Compact and robust
Conical twin-screw extruders for profile extrusion

Engineering Value

KraussMaffei
Berstorff
Facts and figures regarding the conical series

Applications

Coextruded window profiles
Window profiles in core technology, with regrind, extruded
Skirting boards
Gutters
Cable ducts

Other applications:
- Special customer-specific solutions
- Technical profiles
- Window main and secondary profiles

Conical series (monoextrusion)

<table>
<thead>
<tr>
<th></th>
<th>KMD 43 K/P</th>
<th>KMD 53 K/P</th>
<th>KMD 63 K/P</th>
<th>KMD 73 K/P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Output range [kg/h] hard PVC</td>
<td>30 – 100</td>
<td>50 – 160</td>
<td>80 – 220</td>
<td>120 – 330</td>
</tr>
<tr>
<td>Motor power output [kW]</td>
<td>19</td>
<td>28.2</td>
<td>37.4</td>
<td>57</td>
</tr>
<tr>
<td>Screw torque, max. [Nm]</td>
<td>4,000</td>
<td>7,500</td>
<td>12,000</td>
<td>21,500</td>
</tr>
<tr>
<td>Screw speed, max. [min⁻¹]</td>
<td>41</td>
<td>33</td>
<td>28</td>
<td>24</td>
</tr>
<tr>
<td>Screw length</td>
<td>1,160</td>
<td>1,430</td>
<td>1,700</td>
<td>2,320</td>
</tr>
<tr>
<td>Screw diameter [mm]</td>
<td>43 – 82</td>
<td>53 – 101</td>
<td>63 – 120</td>
<td>73 – 151</td>
</tr>
<tr>
<td>Screw heating/cooling</td>
<td>Internal</td>
<td>Internal</td>
<td>Internal</td>
<td>Internal</td>
</tr>
<tr>
<td>Extrusion height [mm]</td>
<td>1,000</td>
<td>1,000</td>
<td>1,000</td>
<td>1,000</td>
</tr>
</tbody>
</table>

Dimensions [mm]

<p>| | | | | |</p>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Length incl. adapter</td>
<td>2,445</td>
<td>2,530</td>
<td>3,100</td>
<td>3,940</td>
</tr>
<tr>
<td>Width incl. control cabinet</td>
<td>975</td>
<td>1,040</td>
<td>1,330</td>
<td>1,445</td>
</tr>
<tr>
<td>Height incl. hopper</td>
<td>2,000</td>
<td>2,300</td>
<td>2,210</td>
<td>2,340</td>
</tr>
</tbody>
</table>

Output for coextrusion upon request
Compact and robust
Conical twin-screw extruders for profile extrusion

Conical twin-screw extruders from KraussMaffei Berstorff are particularly suitable for the middle and lower output range and feature a large number of impressive advantages. They offer high processing-technology flexibility and process stability.

Your advantages at a glance:
- Optimum melt homogeneity thanks to a long processing unit
- Extended processing window when using different formulations
- Higher specific throughput and output rate thanks to a longer pre-heating zone
- Excellent unvarying product quality over a defined performance range
- Low maintenance thanks to internally heat-balanced screws and an air-cooled barrel
- High cost-efficiency thanks to a long service life of the processing unit, even with high output rates
- Active wear resistance thanks to a deep-nitratated barrel and molybdenum-welded screws
- Powerful gearbox; robust and compact design
- Excellent price-performance ratio
Impressive encounter
Take a tour of the conical twin-screw extruder using the KMD 43 K/P as an example

Standard dosing unit
For processing many different materials

Robust gearbox
Ensures low maintenance costs and a long service life

Drive concept
Ideally dimensioned; the standard version comes with an AC drive unit
Rectangular filling opening
Allows optimum screw filling

Long pre-heating zone
For high processing-technology flexibility

Vacuum degassing
With a stable waste pipe and a quick connection for easier cleaning

Vacuum degassing unit
With solids separator

Processing unit
With molybdenum-welded screws and a deep-nitrated, air-cooled barrel

Short, compact and space-saving design
Conical series
Impressive concept of the longest screw: Flexibility and process reliability

The conical series sets new standards. The processors benefit from high processing-technology flexibility and permanent process stability thanks to long processing units.

The substantially longer processing units in the conical extruders produce a much wider processing window when different formulations and materials are used. Dry blend, regrind and pulverized powder can therefore be easily processed with only one geometry. In particular, the longer pre-heating zone has a better thermal influence on the material to be processed thanks to barrel temperature control.

The simple conical screw concept offers the processor crucial advantages, for example optimum heat input through barrel heating. The multi-phase screw concept leads to perfect material processing and a homogeneous melt. Crossed-grooved geometries with no flight interruption ensure safe self-cleaning and a quick change of color.

The longer metering zone results in homogeneous processing of the melt and high pressure stability. The optimized, self-regulating internal heat-balancing system is energy efficient and ensures even material processing in the extruder. The screws in the entire conical machine series are molybdenum-welded along their entire length. The armored layer ensures active wear resistance in conjunction with the deep-nitrated barrels.

Comparison of the pre-heating zone in the old and new series

<table>
<thead>
<tr>
<th>Old series</th>
<th>Pre-heating zone</th>
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<tbody>
<tr>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Current series</th>
<th>Pre-heating zone</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>+ 100%</td>
</tr>
</tbody>
</table>
Conical series
Product information in detail

Flexible, space-saving and efficient – KraussMaffei Berstorff systems for efficient coextrusion

Coextruders for production based on core technology, layer technology or combination technology
The models in the conical series are available both in the standard design as mono-extruders and as coextruders for profile extrusion. Coextrusion is an important trend in plastics processing. For example, window main profiles are made of cost-effective recycling material in the core or in the non-visible area of the profile and only a thin outer layer is applied from colorfast new material. KraussMaffei Berstorff supplies a wide product range of coextruders and unique, space-saving coextrusion concepts such as column combinations or piggyback combinations. In addition to ever scarcer recyclates, producers are increasingly using dry blends made of materials with a high filler proportion for cost reasons. The type of application, but also the available production space determine the extruder arrangement.

Piggyback concept saves space
Combinations of parallel basic extruders and one or two piggyback extruders are used frequently. Depending on the output rate and the amount of recyclate or filler proportion, a coextruder from KraussMaffei Berstorff can be used to process both the core layer and the top layer. For example, the conical KMD 63 K/P coextruder in a KraussMaffei Berstorff system containing a parallel twin-screw extruder in core technology extrudes the invisible core; however, it can also be used in layer technology to produce the outer layer of the profile.
C6 control system – flexible system for open-and closed-loop control and monitoring of an extrusion line

With its new, innovative C6 control system, KraussMaffei Berstorff offers fast, direct access at all times to the individual units of an extrusion line, the extruders which work conjointly to produce the product, and to integrated downstream equipment.

With its numerous monitoring and control functions, the C6 control system ensures optimal production preparation and transparency throughout the production process, thereby satisfying the most stringent requirements for excellent product quality and a high level of process reliability.

Multi-touch technology for intuitive operation
The C6 control system is equipped with the latest multi-touch technology and state-of-the-art hardware components. A high-resolution 24-inch full HD screen provides an optimal overview. The intuitive operation and clear screen layout facilitate fast intervention and provide a comprehensive process overview. Units and functions can easily be operated and activated via the touchscreen display.

With the C6 control system, KraussMaffei Berstorff has placed a particular emphasis on maintaining continuity in the design in terms of both its operation and its functionality, which have proven successful over a great many years.

Maximum flexibility
The C6 control system offers the user an incredibly high level of flexibility. The composition of parameter pages can be chosen freely, and display and parameter texts can be tailored to individual requirements. In addition, the system components can be connected and disconnected as required.

Fast, secure access management using RFID technology
The C6 control system allows fast, secure access by means of non-contact identification using RFID readers. Remote diagnostics via the Internet and data interfaces to connect to the company network tip the balance to make the C6 control system the perfect solution for all your extrusion line’s control tasks.

Your benefits:
– Modern, innovative operating philosophy
– Fast, intuitive operation
– Highly flexible
– Maximum process reliability
– Optimal monitoring of integrated system concepts and standalone machines
– A variety of user-friendly models

Various operating configurations are available

Swivel-mounted on switching cabinet (standard version)  Mounted on switching cabinet door, tilting (option)  Boom-mounted version (option)  Mobile version (option)
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

The KraussMaffei Group has a global presence. Countries with subsidiaries are marked in light blue. In the white-colored regions, the Group is represented by over 570 sales and service partners.
Compact and robust: Conical twin-screw extruders for profile extrusion.

The twin-screw extruders in the conical series from KraussMaffei Berstorff are particularly suitable for the lower profile-performance range, both as mono-extruders and coextruders.

Moreover, they offer crucial advantages with regard to design and process technology. The short, compact design saves valuable production space; by positioning the screw axes diagonally, there is space for a robust transfer gearbox and a strong back-pressure bearing. This machine design ensures maximum functional capability even during rigorous continuous operation. Due to the relatively small screw diameter, minimum back-pressure forces arise in the metering zone, which contributes to the high service life of the back-pressure bearing. The screw concept has been specially designed for processing PVC and achieves extremely gentle material processing.