Time-tested technology for the most exacting standards
Hose extrusion lines

Engineering Value

KraussMaffei
Berstorff
Proven technology for the highest standards
Hose and tube extrusion lines

KraussMaffei Berstorff offers individual hose and tube extrusion lines for producing different types of high-pressure, automotive and industrial hoses and tubes. Cost-effective, reliable and rugged! And everything from a single source. From extrusion technology through to winding of the end product.

In its capacity as a general contractor, KraussMaffei Berstorff provides all services for the manufacture of a powerful extrusion line:
- Conception of the extrusion line and test laboratory, design, production and installation of the machine, training of the operators, and commissioning
- Optimum technical matching of all individual components
- In-depth project know-how
Impressive encounter:
Take a tour of a complete extrusion line for producing high-pressure hydraulic hoses

KraussMaffei Berstorff extrusion lines for the production of hydraulic high-pressure hoses enable you to meet the most varied customer requests.

Combining innovative extrusion technology with state-of-the-art downstream equipment, the ultra-modern hose production line perfectly meets the ever rising market requirements. Extrusion lines for hydraulic hose production are designed to meet specific customer and process requirements. They produce a wide variety of hoses with several braided steel fabric layers of high tensile strength for operating pressures ranging between 70 and 420 bar and burst pressures of over 1000 bar, depending on the hose diameter.

Typical materials:
EPDM, NBR, SBR; reinforcing material made of special steel or textile filaments

Typical products:
1 SN, 2 SN, 4 SH hydraulic high-pressure hoses

Line components for the production of high-pressure hydraulic hoses:
1 Extrusion line for the production of various rubber layers
2 Braiding machines
3 Bandaging system
4 Mandrel removal, pressure test, packaging
5 Mandrel check
6 Mandrel processing
Impressive encounter:  
Take a tour of a complete extrusion line for producing automotive hoses

Innovative ideas are combined with mature technology to achieve maximum efficiency and outstanding reliability. In terms of performance, quality and productivity, KraussMaffei Berstorff hose extrusion lines for the production of automotive hoses and manifolds are a class of their own. These lines guarantee excellent ease of operation, shortest set-up times for material changes and high machine availability – starting with the preparation of the rubber compound right through to the winding of the final product.

Thanks to outstanding flexibility in customized plant engineering and design, KraussMaffei Berstorff is in a position to meet the most diverse product requirements and process-engineering conditions. The comprehensive and in-depth process know-how makes KraussMaffei Berstorff a reliable partner for automotive hose production.

Depending on your individual requirements, the lines can be designed for different extrusion processes with fully integrated reinforcement production and PLC system.

These lines meet almost all requirements of a state-of-the-art production plant. Regardless of the specific automotive hose you want to produce – KraussMaffei Berstorff hose extrusion lines raise the bar in all areas – today as well as in the future.

**Typical materials:**
EPDM, NBR, SBR; reinforcing material made of special steel or textile filaments

**Typical materials:**
Hoses designed for exhaust systems, power trains, oil cooling, clutches, brakes, air-conditioning systems, fuel supply, steering gears, electronic stability control, air-flow routing and suction systems
Line components for the production of automotive hoses:

1 GE 90 KS x 16D extruder with straight die and diameter measuring device
2 Knitting machine with caterpillar take-off
3 GE 90 KS x 16 D extruder with vacuum zone, crosshead die and diameter measuring device
4 Caterpillar take-off
5 Drum cooling system
6 Caterpillar take-off
7 Caterpillar take-off with cutters and discharge systems

Different hoses for applications in the automotive sector.
Impressive encounter: Take a tour of a complete extrusion line for producing industrial hoses

The KraussMaffei Berstorff product range offers perfect solutions for cost-effective hose production.

These lines have stood the test of time in day-to-day production of a wide variety of fabric-reinforced hoses used for various industrial applications. Depending on the hose type, they provide maximum performance at minimum manpower requirements and set new standards in the production of industrial hoses. Further highlights are short retooling times and outstanding reliability. The perfect interplay of the different machine components achieves maximum precision and product quality. Thanks to the wide extruder range and the different machines for producing the reinforcing material, these systems can be perfectly tailored to any application.
Industrial hoses are characterized by high resistance to pressure, temperature and media.

**Typical materials:**
- EPDM, NBR, SBR; reinforcing material made of special steel or textile filaments
- Water hoses, autogenous, construction, suction and conveying hoses as well as hoses used in the food, beverage, cosmetics, chemical, pharmaceutical and fueling industries

**Line components for the production of industrial hoses:**

1. GE 90 KS x 16D extruder with straight die and diameter measuring device
2. Cooling system with loop control
3. Spiraling machine with caterpillar take-off
4. GE 90 KS x 16 D extruder with vacuum zone, preheating device, crosshead die and diameter measuring device
5. Caterpillar take-off
6. Cooling system
7. Caterpillar take-off with loop control
8. Caterpillar take-off with support air water barrier
9. Double plate winder with passage control and release agent system
Extrusion technology
Production base for unparalleled product quality

The extensive extruder program comprises tailored solutions for your specific hose production providing efficient plastication of the rubber compound and thus uncompromising product quality combined with outstanding cost-effectiveness.

Optimum adaptation to your specific product and process requirements
Make sure to choose the right extruder for your product and production process. The cold-feed rubber processing extruders in the GE-K series or the Vac GE-K degassing extruders form the optimum basis for cost-effectiveness in hose production. The simple and yet sturdy machine design, low maintenance requirements, unparalleled output rates and minimum operating cost are the highlights of both rubber extruder series. KraussMaffei Berstorff precisely tunes the extrusion technology to your specific requirements adapting even the last process detail to the desired finished product – from high-pressure and automotive hoses up to industrial hoses. Base your planning on an extruder concept that guarantees high availability throughout the entire life cycle.

Cost benefits and technical advantages of the GE-K series
- Low-wear screws and barrels for high machine availability
- Powerful and durable drive units
- Easy access to all machine components for rapid servicing and maintenance
- Compact design – extruder, gear unit, drive, temperature control system and electrical equipment are all mounted on a common base frame

Unparalleled efficiency in processing standard rubber compounds
The GE-K extruder series stands for time-tested technology and outstanding production reliability – extruders you can bank on! Thanks to the compact design of the machines, they require only little space to develop their full potential. This highly automated extruder type is easy to operate without any excessive requirements in terms of process engineering. With its high productivity and cost-effectiveness, the GE-K extruder is an investment that pays off within an extremely short time.

Your benefits:
- Robust machine design
- Low maintenance requirements
- Long service life
An option for more …
The high degassing capacity of cold-feed Vac GE-K vacuum extruders guarantees excellent material quality, in particular when processing moisture-sensitive compounds. Thanks to the special screw and barrel configuration, volatile matter and trapped moisture are reliably removed from the rubber compound.

The barrel length, screw geometry, drive power and screw speed are perfectly adapted to the specific process.

Cost benefits and technical advantages of the Vac GE-K series
- Low-wear screws and barrels for high machine availability
- Special screw surface treatment for abrasive compounds
- Strong and durable drive units
- Special screw geometry for intensive material degassing
- Easy access to all machine components for rapid servicing and maintenance
- Compact design – extruder, gear unit, drive, vacuum pump, temperature control system and electrical equipment are all mounted on a common base frame

State-of-the-art extrusion dies for all diameter ranges
The straight and crosshead dies used in hose production and hose sheathing give high-quality products at outstanding output rates and unparalleled reliability combined with low maintenance requirements and short retooling times. KraussMaffei Berstorff uses flange connections and clamp or bayonet joints to link the extrusion die with the processing section. To ensure easy and rapid cleaning as well as quick extrusion tool replacement, the connections are designed for manual or hydraulic operation.
Downstream Equipment
High-performance solutions for sustainable optimization of the entire hose production process

Closely linked work steps characterize the multi-stage rubber hose production process. All components of the downstream equipment are perfectly matched – sophisticated technology along with sturdy design, high reliability and maximum output rates.

To enhance the compression strength, the extruded hoses are provided with one or several reinforcement layers. The reinforcing material is generally composed of textile or metallic filaments that are converted into a braided, knitted or spiral-type fabric, depending on the required compression strength and intended application.

KraussMaffei Berstorff offers customized solutions for this purpose: computer-controlled knitting, spiraling or braiding machines for sheathing hoses within a diameter range of 6 to 110 mm. These fully automatic machines process filaments of different materials and thickness. Thanks to their short retooling times, they ensure high cost-effectiveness in particular for small and medium production batches and meet the most exacting standards in terms of quality, productivity and durability.

Your benefits:
- Customized downstream equipment
- Most modern and reliable technology
- Excellent product quality
Bandaging machines
Bandaging machines are designed for wrapping the hoses with a tape to prepare them for vulcanization in an autoclave. This highly cost-effective solution ensures short set-up times and reliable production of a wide variety of hose sizes.

Vulcanization technology
During vulcanization in an autoclave, the plastic rubber compound is converted into elastic rubber. This process gives the hose its typical properties like mechanical resistance, long-term flexibility, high tensile strength as well as chemical stability and aging resistance.

The horizontal or vertical autoclaves used for this purpose are tailored to individual customer requirements.

Test equipment
Hose extrusion lines are equipped with non-contact optical measuring systems to ensure compliance with the applicable tolerances and standards. These systems control the production process with a high degree of reliability. KraussMaffei Berstorff uses various devices and systems for static, dynamic and visual checks within the frame of off-line sampling. This equipment checks the hose quality under almost authentic operating conditions.

KraussMaffei Berstorff system solutions enable true professionals in hose production to utilize a vast value-creation potential and to achieve maximum productivity. KraussMaffei Berstoff production lines – your key to success!
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

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.
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Hose extrusion lines

Place your trust in KraussMaffei Berstorff’s expertise in the area of rubber processing: Bring your production up to scratch and guarantee your company a competitive edge through complete system solutions, turnkey production plants and customized services. Count on extruder concepts that effortlessly achieve the high flexibility that is indispensable today for manufacturing different products. Plan your production with a system concept that ensures high availability over the entire service life of the machine.

www.kraussmaffeiberstorff.com