



**Reiloy USA**  
REIFENHÄUSER GRUPPE

# Screws & Barrels from Reiloy USA

High performance screws and barrels as  
tough as your applications

Leading Wear Protection



# Philosophy

## Reiloy USA has the engineering expertise to manufacture precisely the right components for your application.

### A Different Way of Thinking

**You have many options for screw and barrel suppliers. At Reiloy USA, however, we are so much more than just another supplier.**

The right screw and barrel combination can make the difference between mediocre performance and high-profit productivity. Cycle time improvements, process optimization and reduced wear are some of the benefits - whether running multiple resins or a single resin in a specialized application

We're proud to share in your ongoing quest for quality. Our patented designs and commitment to excellence can help your company produce better products, more cost-effective processes - and higher profits.

Reiloy USA believes in a scientific approach. On staff we have several mechanical and plastics process engineers. The balance of our sales and other support positions are filled with people having years of practical, on-the-floor, industry related experience. Many of us have been in your shoes. Combined with our passion for customer service, we trust you'll find working with us nothing short of a pleasure.

### Custom Designed Screws

**Although a screw can usually process more than one resin, Reiloy USA's approach to screw design is based on using the very best design for the resin or resins to be processed.**

If a number of different resins must be processed using the same screw, that screw should be designed to optimize its performance and allow for all the resins to be processed successfully.

Reiloy USA routinely selects the proper screw design variables (at no extra charge) to provide you with screws designed to fit your particular applications. These custom designed screws enhance melt quality, minimize cycle time, improve part quality and reduce rejects.

Based on the information you provide us, we'll make recommendations for designs, types of steel and secondary treatments crucial to reduce or prevent abrasive, corrosive, adhesive or a combination of all three types of wear.



# Screws

## We thrive on the details, because the details are what make great screws.

We manufacture screws from a wide variety of steels; 4340 high tensile strength alloy steel, PM9V, 420V, and Nitralloy 135 to name but a few. We offer flight hardened screws in Stellite #12, Colmonoy #56, #57 and #83. Many secondary treatments are available such as gas and ion nitride, hard chrome plating, ceramic chrome and carbide encapsulation. All our steels and secondary processes are selected to meet or exceed industry standards.

**The Eagle® Barrier Screw** has been one of Reiloy USA's most effective designs for all types of injection environments and has also been proven successful in extrusion applications.

### The Eagle®

The patented Eagle® is a low shear, distributive and dispersive mixing screw that provides the processor with outstanding color mixing and melt quality - all without increasing melt temperature, burning or degradation while running at very high RPM.

The Eagle® can be designed to process most resins manufactured for your application. This remarkable design has:

- Improved production rates by more than 25%
- Reduced part rejection from more than 5% to less than 1/2%
- Reduced the amount of color concentrate required to achieve optimum color mix from 5% to 2%

The Eagle® is used with custom-designed single-flighted screws and also with barrier designs for special applications

### The Eagle® Barrier

The Eagle® Barrier combines the advantages of the Eagle® mixing design with the melting efficiency of the barrier screw design.

The barrier section "solid" and "melt" channels provide the effective melting of all resins, especially the "hard-to-melt" crystalline resins. The resin is then conveyed through the mixer to produce a high quality, isothermal melt.

The design of the barrier portion of the screw and the mixer itself is dependent upon the type of resin being processed and whether the application is injection molding, blow molding or extrusion. The Eagle® Barrier has been Reiloy USA's most effective design for injection molding and works effectively in extrusion applications as well.

The Eagle® Barrier screw has been used successfully with all melt index resins.



## Rebuilt Screws

Screw repair consists of rebuilding the flights with a full width welded hard facing to the OEM diameter specification and rechroming or renitriding the surface, if required. A properly rebuilt and polished screw can be as effective as a new one and an economical alternative to a new screw purchase.

The decision to repair a screw rather than purchase a new replacement generally should be based on the:

- Size of the screw
- Amount of wear on the root of the screw
- Design of the screw

Reiloy USA suggests that if the design of the worn screw matches your processing needs and the root is not worn enough to alter that design, rebuild it.

# Reiloy Bimetallic Barrels

## Highly wear-resistant barrels as tough as your applications.

Reiloy USA's years of plastic processing experience in many environments combined with our metallurgy knowledge affords us an integral understanding of the materials available. This expertise enables the ability to offer our customers the best solution to fit processing needs.

**Reiloy USA's bimetallic barrels manufactured from Reiloy barrel blanks are:**

- Highly wear resistant
- Tested under tough operating conditions
- Free from distortion
- Stocked in common sizes for timely delivery

### Precise Control

Reiloy Metall, located in Troisdorf Germany, is the only manufacturer of bimetallic barrels in the world who produces its own hard alloys in-house. This provides end-to-end control over the quality of our bimetallic barrels, from the raw materials to the finished barrel.

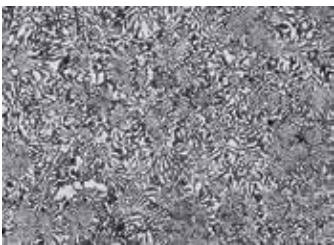
Reiloy's proven process begins with the barrels being heated by electrical fields which cover the entire surface at once. These encompassing electric fields also mean the barrels can be cooled under controlled conditions. This guarantees a barrel absolutely free from distortion, eliminating the need for time-consuming, labor intensive straightening operations.



**Reiloy USA has performed wear tests on hundreds of different tool steels to determine those best suited for use in the manufacture of both barrels and screws.**

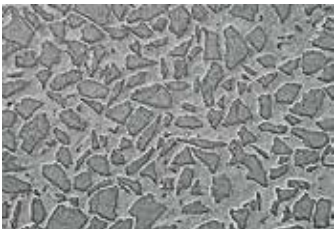


## Armouring Alloys for Bimetallic Barrels



### **R121**

- Outstanding wear characteristics
- Good corrosion resistance
- Hardness at room temperature: minimum 65 HRC
- Suitable for processing plastics containing up to 30% glass fiber



### **R215**

- Hardness at room temperature: minimum 59 HRC
- Microstructure: dispersion hardening of a highly corrosion resistant NI-Co matrix alloy with evenly dispersed, thermally stable tungsten carbides

## Tool Steel Barrels

A-11 tool steels are more resistant to wear than D-2 but each has its place. Reiloy USA also supplies barrels manufactured from nickel alloys.

Our vast knowledge, experience and product line enables us to offer our customers a full range of options and tailor them to any processing environment.



# Precise Technology

## Offering our customers the best solution to fit their processing needs.

Reiloy USA understands the importance of being skilled in today's technology while staying on the cutting edge of ideas to improve processing, production and profits. In fact, we are known as a leader when it comes to bringing ingenuity to the table. However, our goals are always centered on bringing value to our customers.

### Our expertise covers many disciplines within the plastics industry including:

- Injection
- Blow Molding
- Thermoset
- Sheet, Profile Tube and Film Extrusion
- Rotational Molding

**Many molders like the flexibility of converting existing machinery to other uses. Reiloy USA has the technology and the experience to help.**

**Upsizing:** Increasing the capacity of an injection unit without replacing the entire unit is possible and the modification can usually be accomplished at a much lower cost.

Upsizing involves a new screw, barrel, valve and end cap. The capacities of the existing system, plus the barrel design and resins to be processed, are among the factors to be evaluated in confirming the feasibility of upsizing.\*

**Downsizing:** The need to downsize an injection unit usually arises from potentially excessive residence time when attempting to produce a part with a shot size that is a small percentage of the machine's shot capacity. Downsizing involves a new barrel, screw, valve and end cap.\*

**Thermoset Conversions:** Thermoset conversions offer molders the flexibility of molding thermoset resins on a thermoplastic injection molding machine. Converting an existing machine can be done successfully by changing injection unit components manufactured from highly wear resistant materials.

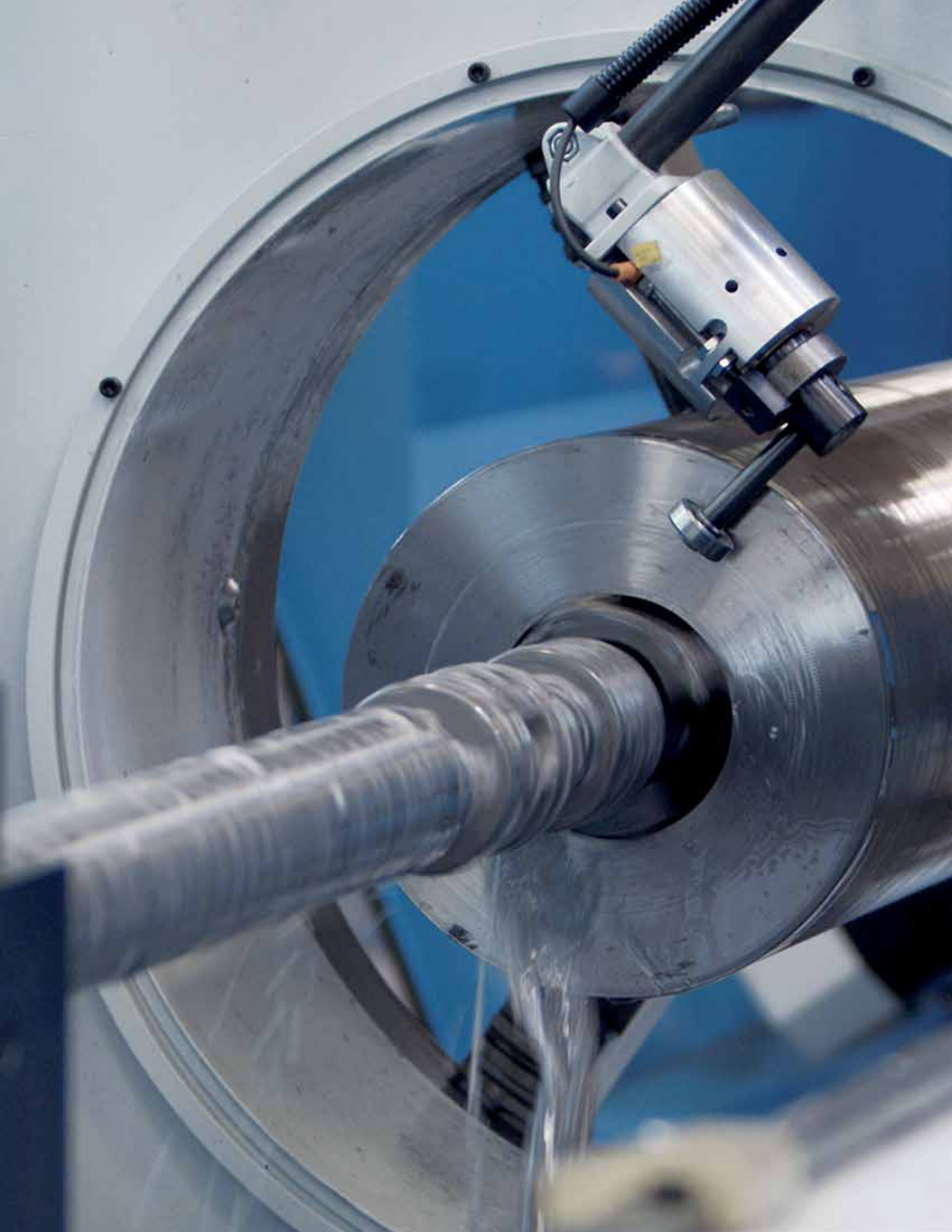
**Additional technology we'd be pleased to tell you more about:**

- LSR (Liquid Silicone Rubber)
- Marbleizing
- Edible Animal Treats

Give us a call to find out more:  
800-247-1144

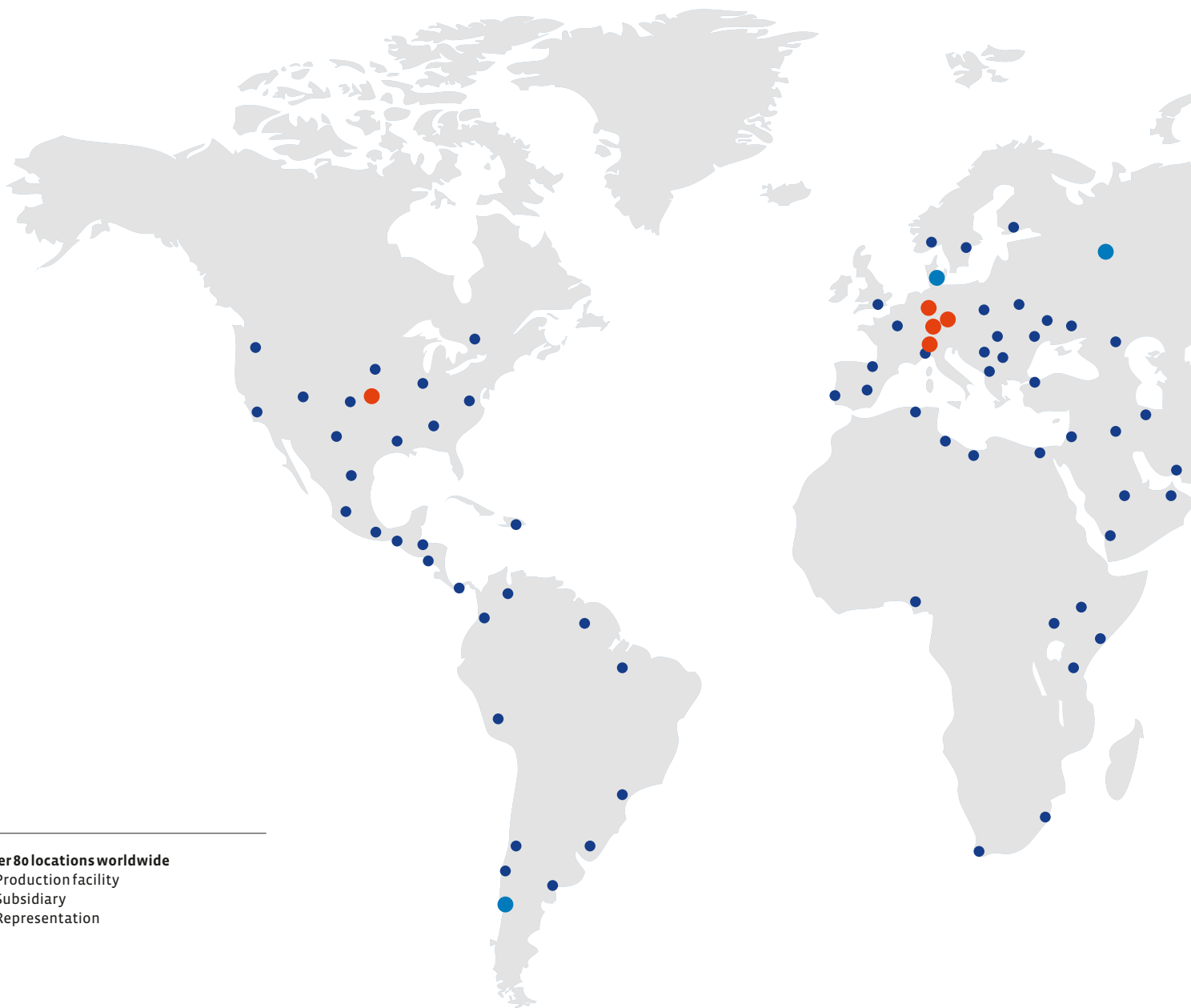
\* Sometimes the existing barrel may be used to meet the requirements.





# Locations of the Reifenhäuser Gruppe

Always close to the  
customer.





The Reifenhäuser Gruppe is the leading provider of innovative technologies and components for plastics processing. Six highly specialized business units with more than 1,200 employees provide advanced solutions for the production of films, nonwovens, monofilaments, strapping tapes, wood polymer composites and injection molding. The company is the biggest network for plastic extrusion technology worldwide.

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