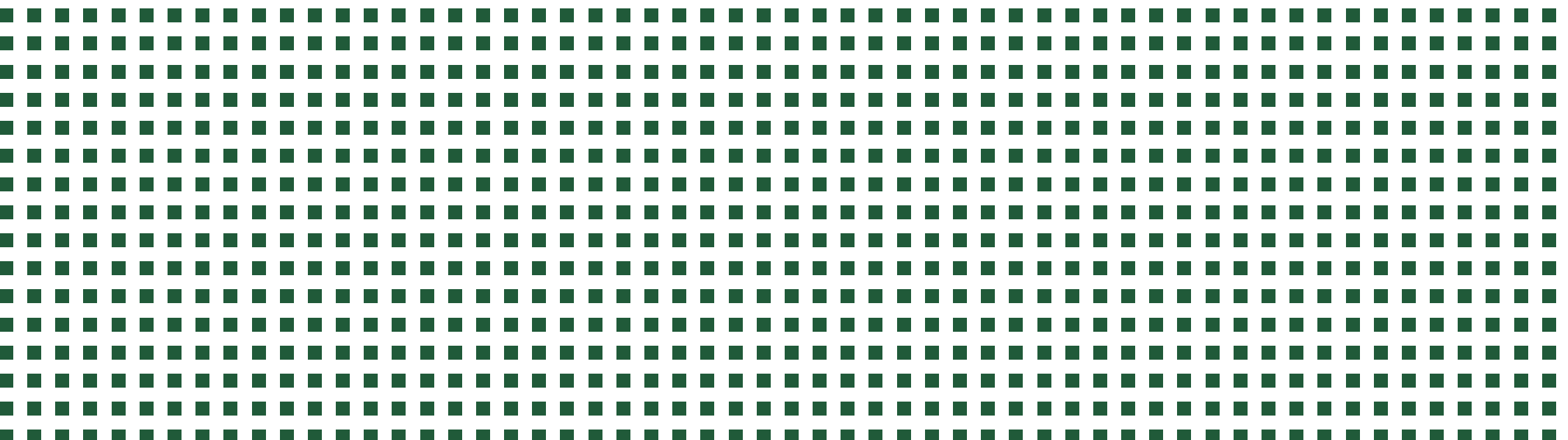


# Tufting

Products and services for the tufting industry







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## Tradition and Future

**Groz-Beckert was founded in 1852 and is active in over 150 countries today with around 7,700 employees. Whether for knitting, weaving, felting, tufting, carding or sewing: Our total product portfolio contains over 70,000 products. As a leading supplier of industrial machine needles, precision parts, precision tools, systems and services for a wide range of textile production and joining methods, Groz-Beckert supports its customers and partners within the textile value chain – and beyond: The Technology and Development Center (TEZ) is a pioneering platform with which Groz-Beckert has been shaping the future of the textile industry together with machine manufacturers, end users, textile producers and institutes since July 2010.**

### Groz-Beckert

Textiles are everywhere and are found in a wide variety of shapes and functions in all areas of life: Fashion, sports and leisure, home textiles, flooring or in architecture. And textiles are also indispensable for mobility – from cars to space travel – and for health.

Groz-Beckert manufactures machine needles, precision parts and precision tools and offers supporting services for all aspects of the textile industry, from fashion, home and domestic textiles to technical textiles.



### Technology and Development Center

Groz-Beckert represents reliable product quality and customer service in the world of textiles. The Technology and Development Center (TEZ) was opened in 2010 in order to develop new development and application fields for textiles in cooperation with customers and partners. Not only is the TEZ furnished with state-of-the-art equipment, it also provides the perfect environment for bundling the competencies and knowledge of Groz-Beckert. As a future-oriented company, Groz-Beckert places great value on the research and continued development of new technologies and application fields in the textile industry.

### About Groz-Beckert

- Founded: 1852
- Head office: Albstadt, Germany
- Employees: 9,282 (as of 31.12.2018)
- Sales: 745 million euros (2018)
- Production companies: Germany, Czech Republic, Portugal, USA, India, China, Vietnam, Belgium
- Distribution network:  
Distribution subsidiaries and partners in over 150 countries

## Tufting product range

**Until 1980, Groz-Beckert was active exclusively in the field of knitting and warp-knitting machine needles. Then the product range was expanded to include sewing and shoe machine, felting and structuring needles. Tufting needles and knives, loopers and reed fingers were added to complete the product range in the years 1998 through 2004 by acquiring the brands Eisbär, SNF and Schlemper and more recently SCHMETZ.**

### Tufting – a definition

Tufting describes a method based on the sewing machine principle, used to manufacture carpets, high quality interior automotive carpets and artificial turf for sports facilities and landscaping. Machine tufting methods use needles to insert the so-called pile yarn into a carrier material. The yarn is fed individually to each of the needles in the needle row, which is the same width as the final product. Then the tufting needles are inserted into the primary backing cloth, a woven or non-woven material. Loopers pick up the yarn before the needles are retracted again. Repeating this process creates a series of loops. Depending on the machine type, the loops can be cut open to create a cut pile. It is also possible to combine loop and cut pile through highly advanced machine, patterning and software components. The carpet types are generally divided into cut pile, loop pile, cut loop and level cut loop.

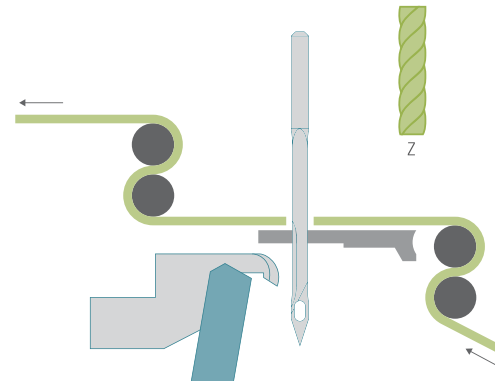
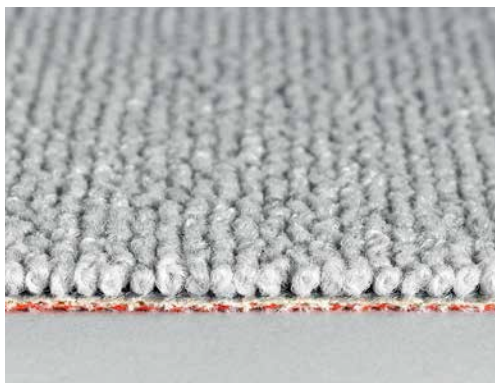


## The tufting technology

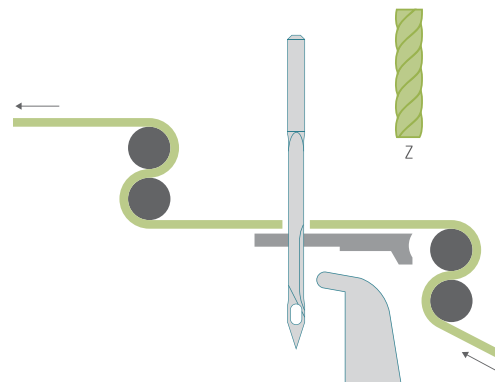
Whether as a carpet, flooring, bath mat or artificial turf – tufted surface textiles are found everywhere, including as high-quality fabric trim in vehicles. Groz-Beckert has the right gauge parts for all processing techniques in its program – both singular and modular for perfectly integrated complete systems.

### For all manufacturing methods

Tufting utilises a backing material (non-woven or woven). The pile yarn is attached into this backing material. The different designs are primarily created with the following four techniques:

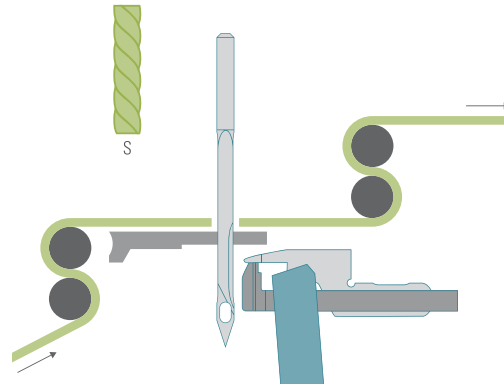


For cut pile, the yarn loops are cut by a special cutting system in an additional step. This cutting process uses a scissor action of the looper and tufting knife.

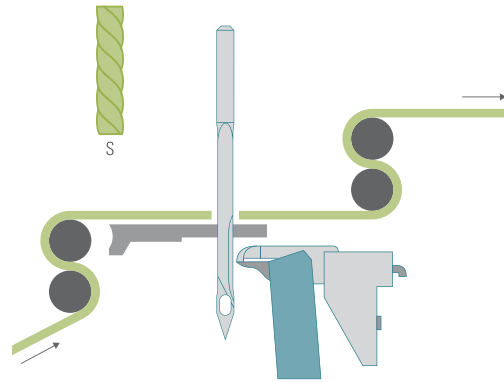


For loop pile, the carpet surface is formed from a series of individual yarn loops.





In the combination of loop and cut pile (cut loop), the high cut pile loop is produced at normal yarn tension and the low loop pile loop is produced at a low yarn tension.



A special combination of loop and cut pile (level cut loop) is produced with air-controlled loopers. If additional patterns are used, different yarn tensions lead to the desired results.





## The full program

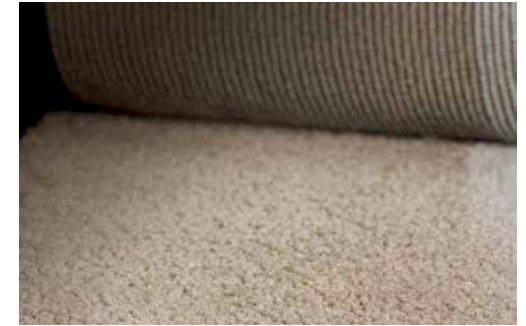
**Tufting gauge parts by Groz-Beckert do all the work: They create the basis for tufted surface textiles. As a carpet or bath mat, artificial turf for sports facilities and landscaping or for high quality fabric trim in vehicles. Tufting machines with a width of up to five metres and up to 4,000 needles, loopers, reed fingers and knives produce high quality textile surfaces at speeds of up to 1,500 RPM. This is only possible in the first place thanks to the perfect coordination and performance of the tufting gauge parts.**



Application-specific tufting systems, precise, high-performance and durable tufting needles and needle modules, loopers, looper modules, reed finger and tufting knives: Groz-Beckert offers a complete range of tufting gauge parts.

## The tufting system

**The use of Groz-Beckert tufting gauge part systems produces measurable benefits in the manufacturing of tufted flooring. The Groz-Beckert tufting system as a whole stands for the highest precision and process reliability – with all components from a single source.**



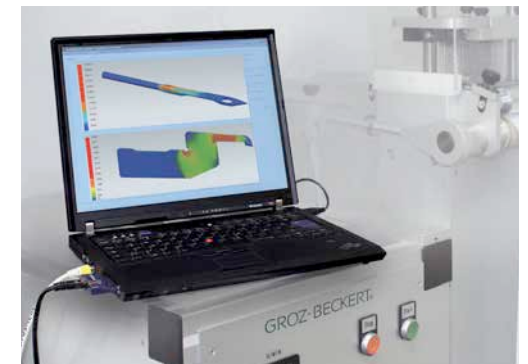
### Perfect combination, optimal interaction

The perfectly matched combination of materials and the functional interaction of each component ensures that the tufting process produces high quality and economical results. The use of a coordinated Groz-Beckert tufting system in all relevant tufting applications pays off. It is developed systematically to satisfy the constantly increasing requirements of industry with regard to precision and process reliability.

The Groz-Beckert gauge parts are developed in close cooperation with, and under consideration of, the requirements and experience of the tufting machine manufacturers, raw material suppliers and in partnership with our customers around the world.

### Highest standards

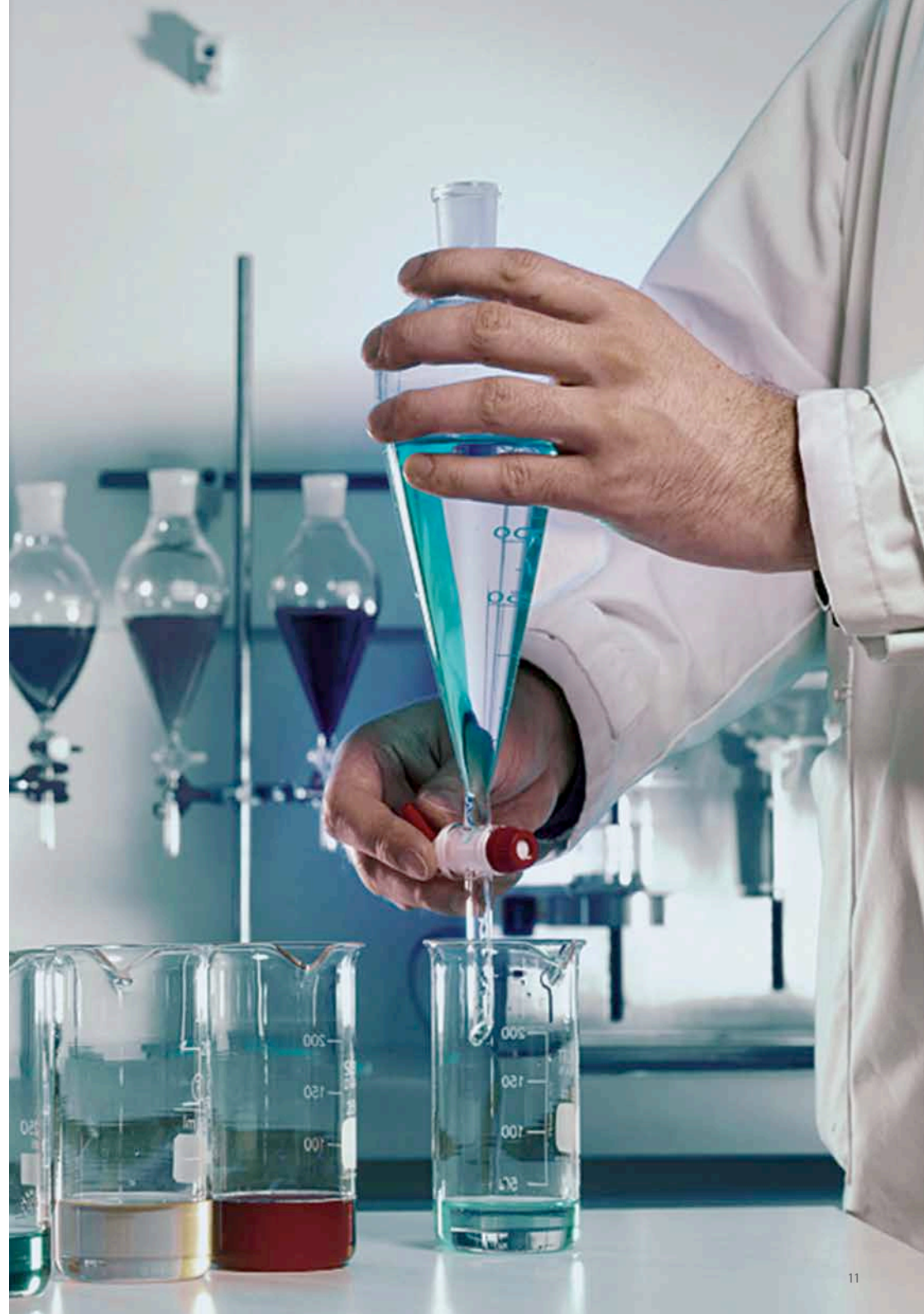
The company places especially high importance on the optimal selection, use and combination of particularly high quality materials – in an advanced production process with strict quality standards. This is ensured through state-of-the-art laboratory and analysis methods.





**Process reliability through the  
Groz-Beckert gauge part system:**

- Development competency
- Process competency
- Production competency
- Application competency



## Needles and needle modules

**Groz-Beckert combines tradition and innovation for state-of-the-art needle technology. The company is renowned around the world for high quality tufting needles in all tufting applications.**

### **Individual needles and needle modules for all needs applications**

Tufting machine manufacturers and carpet manufacturers value the constant high quality and reliability of the products. They also recognize Groz-Beckert as a competent and reliable development partner for all customer-specific requirements. With good reason: Because they receive a full range of needles for all applications and all machine generations. Groz-Beckert needle modules are characterized by consistently high quality, precision accuracy and

long service life, all the way down to the finest of gauges. The product range includes all conventional module types and fixing systems. The use of the needle modules minimizes set up times. As a systems supplier, Groz-Beckert guarantees optimal coordination of the tufting system.





## Loopers and looper modules

**Problem-free and efficient production is guaranteed through the consistent quality and precision of the individual loopers and looper modules.**

### The innovative looper geometry for loop pile goods and velour

The reliable operation of loop pile and cut pile loopers is the basis for a flawless and high-quality product appearance, both with single loopers and in modular designs.

The geometries of Groz-Beckert loopers are optimally adapted to the respective applications. This is why the consistent and precise quality of single loopers and looper modules is a matter of course.

As a component of Groz-Beckert tufting systems, the design and material selection of single loopers and looper modules is matched perfectly so that they interact smoothly. Differing requirements demand individual combinations of the different tufting tools. Many different carpet types have to be supplied with the perfectly matched tools.

### Always a perfect fit – single loopers and looper modules

The tufting industry makes use of different take-up systems – for individual part configuration as well as for module design. As a full assortment provider, Groz-Beckert offers the right tufting tools and tufting systems for every variation. In partnerships and joint ventures with leading tufting machine manufacturers, the tufting tools are continuously refined for the very latest machine generations.

Just like Groz-Beckert tufting needles, Groz-Beckert loopers and looper modules are also impressive with their consistently high precision and service life, right down to the finest gauges. The product range includes all conventional module types and fixing systems. Using modules from Groz-Beckert reduces set up times noticeably in any case.





## Reed finger module

**Straight, offset or in combination: Groz-Beckert offers a wide range of reed finger modules.**

### Flawless product appearance, reduced cost

A system provider thinks of everything: Thus the Groz-Beckert tufting product range also includes a complete assortment of reed finger modules for all gauges. The precision of the Groz-Beckert reed finger modules ensures a uniform and flawless product appearance – and minimizes set up requirements. All reed finger modules are available with the familiar fixing systems.



Straight



Offset



Straight and offset combined

## Tufting knives and knife modules

The selection and utilization of high-quality materials and special production processes has formed the basis of the outstanding quality of Groz-Beckert tufting knives for years.

### Quality which sets standards around the world

Users worldwide can rely on the uniform quality regardless of the batch sizes. This has made Groz-Beckert tufting knives the benchmark for today's industry standard – made from the highest quality materials, with precisely ground blades and high uniformity. All gauges are available for any conceivable application, as are all relevant cutting and opening angles.

Combining them with the Groz-Beckert cut pile loopers ensures a uniform cut appearance and thus an optimal product appearance, even when using sensitive yarn types. Groz-Beckert provides custom solutions such as tufting knife modules for special applications and gauges.



Tufting knives with carbide cutting inserts – particularly well suited for high-end applications such as automotive carpets



Standard tufting knives – universal all-rounder for all applications

# Services



## Always on the safe side

**Tufting services have a lot to offer: From regrinding services for tufting loopers and tufting knives, whether single-piece or modules, to expert application advice, the online catalog, App myGrozBeckert and training at the Groz-Beckert Academy.**

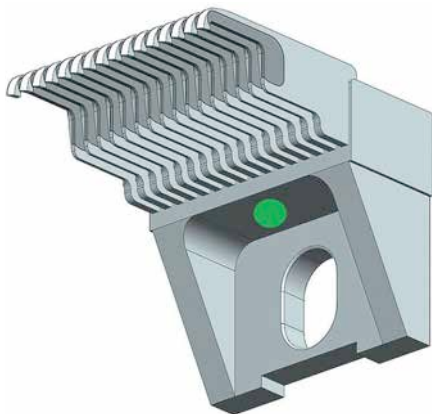
# Regrinding service

Groz-Beckert offers a regrinding service for Groz-Beckert tufting loopers and tufting knives, regardless of whether they are individual parts or modules.

## High sharpness – for high process reliability

A regrinding service for tufting loopers and tufting knives for individual parts and modules increases the service life of gauge parts and makes them more cost effective. Regrinding meets the Groz-Beckert OEM quality you rely on, allowing the products to reach their maximum service life and to continue producing high quality and high value products.

The knives and loopers are inspected upon receipt. If the wear pattern isn't normal, we contact the customer to discuss possible misadjustment of the machine. Loopers and knives in modules can be ground in stages according to their degree of wear. After regrinding, they get a colour code. Identical items with identical colour codes can then be used together in one machine.



| Colour/<br>identifier | RAL<br>Colour | Regrind    |
|-----------------------|---------------|------------|
| Green                 | 6002          | 1. Regrind |
| Yellow                | 1016          | 2. Regrind |
| Orange                | 2004          | 3. Regrind |
| Red                   | 3031          | 4. Regrind |
| Black                 | 9005          | 5. Regrind |

Sample colour table for regrinding of cut-pile looper modules

**TI/SC**  
CPLM &  
LCLM

**HSS**  
CPLM &  
LCLM





## Application consulting

**Groz-Beckert has many years of experience in the tufting industry and extensive expertise in application consulting.**

### **Technical Center Tufting– worldwide, from consulting to solutions**

Groz-Beckert offers a unique package of application consulting services. With the help of the Technical Center Tufting, specific solutions can be efficiently developed together with users.

Comprehensive expertise in all areas of the tufting industry is a given: From the production of automotive carpeting to wall-to-wall and artificial turf. Experienced experts develop solutions and support you in a wide range of areas. The support ranges from selecting the optimal tufting tools to basic testing, further development of tools and process optimization to quality assurance including material and fault analysis.



# Online product catalog Tufting

Whether individual parts or modules – with the online product catalog, Groz-Beckert offers its tufting customers an interactive system that sets new standards in the field of product searches.

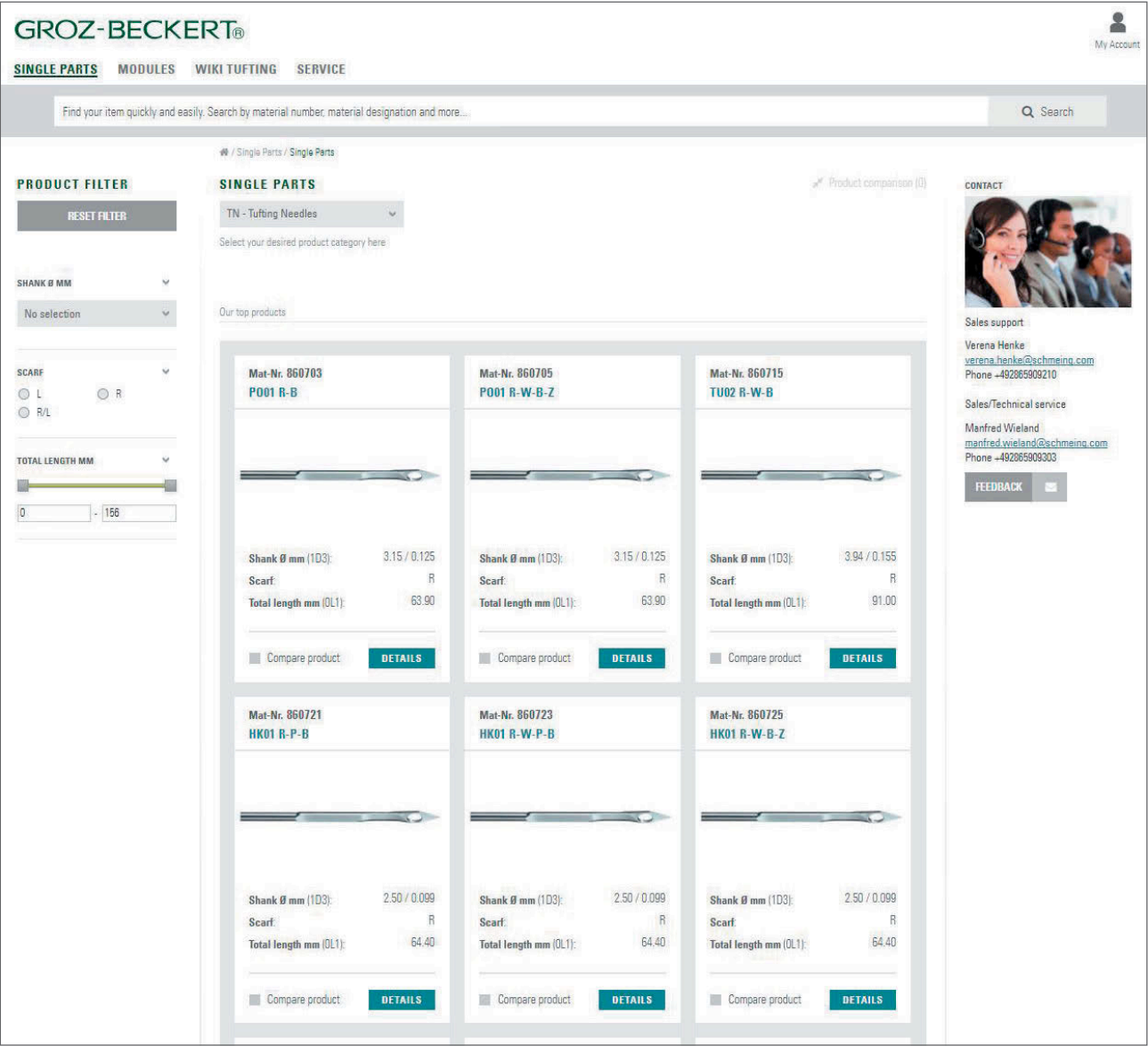
The catalog offers registered users the option of finding the products via the standard designations in use on the market. Of course, this also applies for the designations of previous models; in this case, the customer receives direct access to all key information for the relevant successor model.

The product search can also take place via filter options by restricting the results based on product features or product groups. The user then receives an overview of all products matching the specific requirements.

Both versions provide the user with further information, such as product characteristics, technical dimensions and product images. This information can be compared directly via the comparison function.

In addition to the product catalog, users also have access to a platform with basic knowledge relating to all aspects of tufting and Groz-Beckert products.

The online catalog is available to all tufting customers free of charge. Quick and up-to-date product inquiries help secure a competitive advantage for the users. Register today – at: [www.my.groz-beckert.com/tufting](http://www.my.groz-beckert.com/tufting)



Online product catalog Tufting

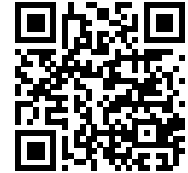
## Groz-Beckert Academy

**Apart from offering personal application advice, Groz-Beckert has always supported their customers by providing product as well as basic knowledge along the textile value chain. Since 2012 this part of the comprehensive service package has a name: The Groz-Beckert Academy has set itself the task of sharing and passing on knowledge, imparting experiences as well as making know-how and competencies accessible.**

Whether it is knitting, weaving, felting, tufting, carding or sewing – the Groz-Beckert Academy offers a comprehensive training program that covers all the most important textile production and joining methods. Using a mix of theory and practice, our experienced trainers share expertise and know-how. As a result, the participants are optimally equipped for their tasks within the textile world.

The course range covers various basic, advanced and special training courses, which are held in the Technology and Development Center (TEZ) in Albstadt. Moreover, the Groz-Beckert Academy offers individual trainings on-site at the customer's location.

All courses are offered in German and English. Selected courses are also held in additional languages, such as Spanish and Chinese.



Das aktuelle Schulungsprogramm  
zum Download





# App myGrozBeckert

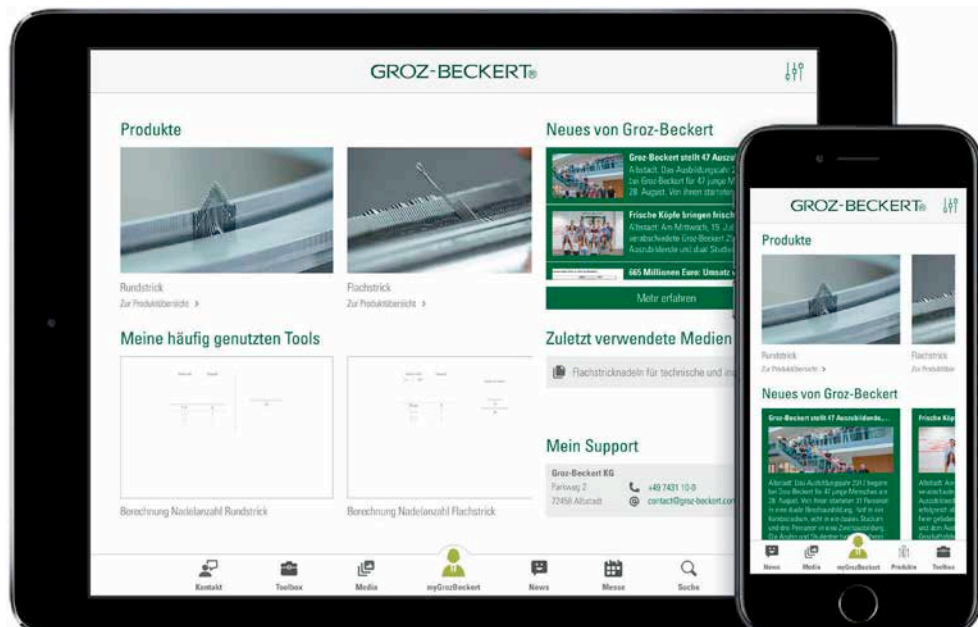
## Your personal work tool

As it is one of the most essential prerequisites of working effectively, Groz-Beckert traditionally places great importance on sharing knowledge and experience. In order to provide mobile access to this know-how and make it available offline, Groz-Beckert developed an app in 2011 that contains well-founded knowledge along the textile value chain and about the company.

Since then, myGrozBeckert has continuously been developed further, and as part of the 2017 relaunch a completely customizable navigation was implemented.

This allows users to save favorites and preferred topics themselves, and change them any time as needed. This is how myGrozBeckert becomes a personal and individually configured work tool.

myGrozBeckert works with all iOS and Android smartphones and tablets, and is available in German, English, and Chinese. The free app can be downloaded through the Google Play Store, the Apple App Store or through various Chinese app stores.



### myGrozBeckert

Individual information on your personal dashboard



### Products

The extensive Groz-Beckert product and service portfolio



### Toolbox

Recommendations, tools and calculation aids



### Contact

The Groz-Beckert contact partners – worldwide



### Media

Animations, videos and brochures



### News

All news about the textile world of Groz-Beckert



### Exhibition

Data and facts on the Groz-Beckert trade fair presence



### Search

Key word search across all areas



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