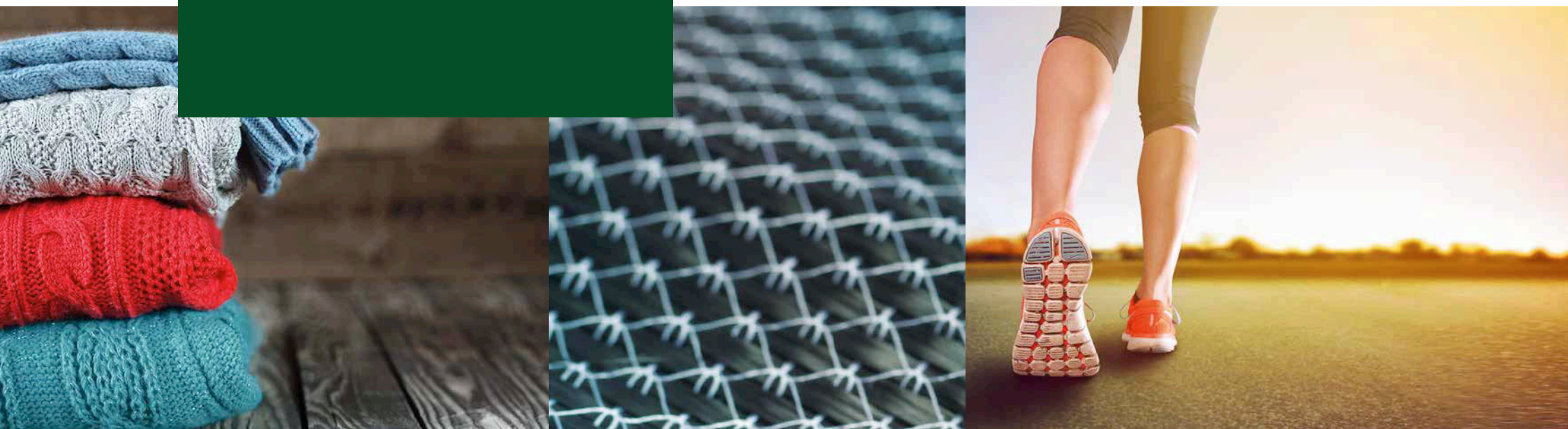


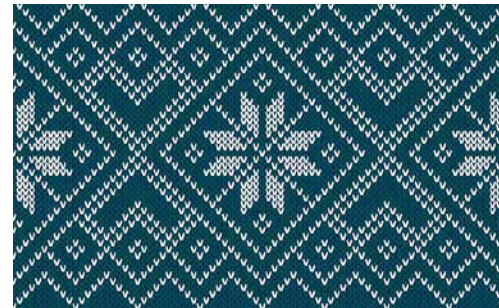
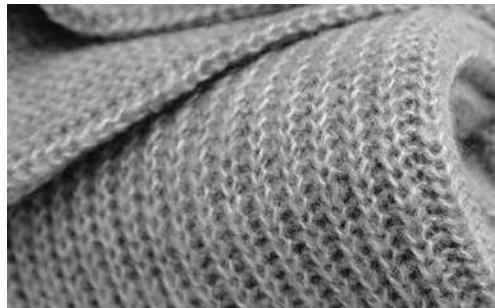
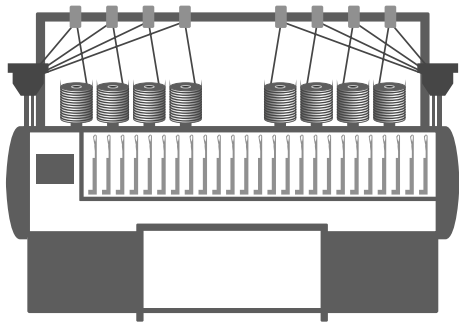
Knitting

Products and services
for the flat knitting sector



Flat knitting technology

Groz-Beckert develops, produces and sells machine needles, precision parts, precision tools and systems for different textile production and joining methods. Its product portfolio serves the fields of knitting and warp knitting, weaving, felting, tufting, carding and sewing. Specifically for the knitting industry, Groz-Beckert offers more than 4,800 high-performance needles and system parts for the production of flat knitted textiles.

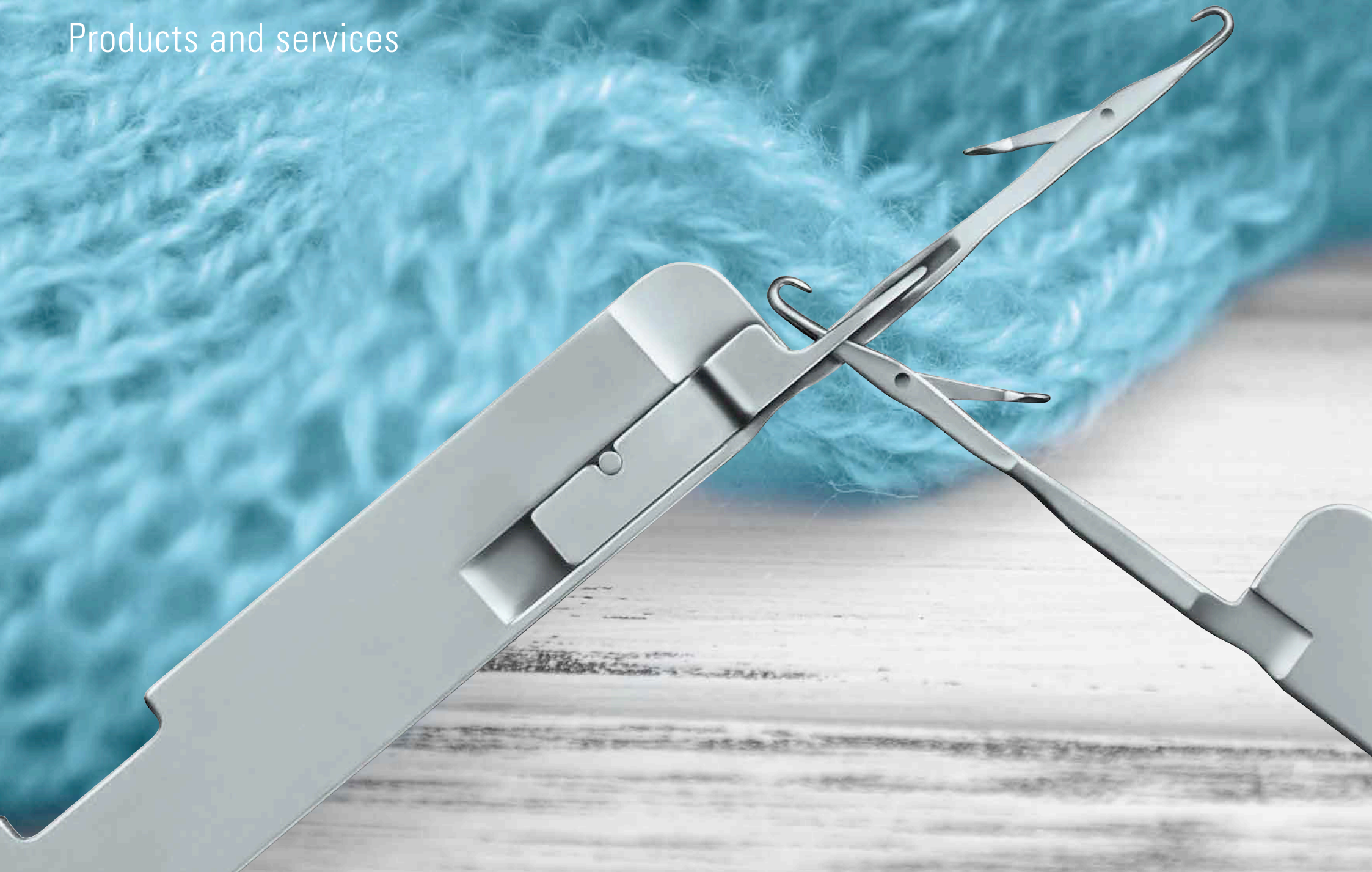


Flat knitting machines use up to four needle carriers arranged in an upward sloping V-shape opposite each other. In the same way as with circular knitting machines, the needle movement is implemented by cams. These cams are fitted to the carriages of the flat knitting machine. The carriage moves horizontally backwards and forwards over the needle carriers. In the flat knitting sector, gauges of E 2.5 to E 18 are customary. Typical applications include the manufacture of outer wear such as sweaters, jackets, waistcoats, accessories such as collars, cuffs and hats, as well as 3D shaped parts for technical applications such as seat covers or biaxial knit fabrics used as reinforcement components for composite constructions.

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Products and services





Over 160 years of development and a worldwide company network

Groz-Beckert stands for outstanding customer service with individually tailored systems and solutions. Alongside flat knitting needles and system parts, the Groz-Beckert performance spectrum encompasses wide-ranging services.



Transfer needle
Vo-Spec. 112.88-68 G 05



Compound needle and jack
SN-M 90.56-46 G 8

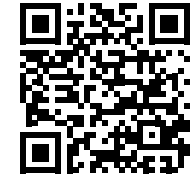


Transfer needle
Vo-Spec. 87.92 G 03



Transfer needle
Vo-Spec. 88.128 G 03

Product portfolio



More information on system parts

At Groz-Beckert, all the components of knitting systems are precisely inter-coordinated. The perfect interaction between knitting machine needles and system parts guarantees an even, flawless loop formation process, and consequently superb fabric quality and outstanding productivity. Machine manufacturers the world over place their trust in Groz-Beckert as a development partner and quality supplier. We continue the further development of our product spectrum on the basis of this broad fund of expertise.

Knitting machine needles

- Latch needles
- Spring-loaded latch needles
- Compound needles
- Links needles

System parts

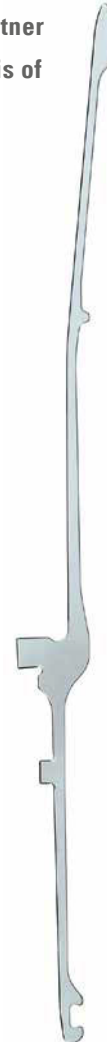
- Joint parts
- Intermediate jacks
- Selection parts
- Holding-down parts
- Transfer parts
- Takedown comb parts



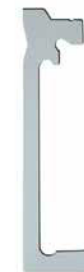
Transfer needle
Vo-Spec. 87.92 G 03



Transfer needle
Vo-Spec. 88.128 G 03



Joint part
KT-2/ 137.50 G 2



Intermediate jacks
ZS-2/ 35.50 G 1



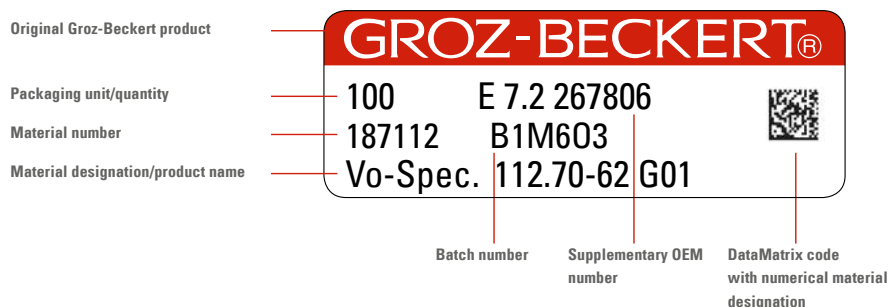
Selection part
ATF-2/ 90.45 G 1



Holding-down part
NT-R 28.40-18 G 1

Product designations

What information can I find on the product labels?



What information does the product designation contain?

Vo-Spec. 112.70-62 G 01

1 2 3 4 5 6 7

- 1 Punched latch needle
- 2 Transfer needle
- 3 Total length in mm
- 4 Thickness 1 in 1/100 mm
- 5 Thickness 2 in 1/100 mm
- 6 Groz-Beckert
- 7 Variant from Groz-Beckert

Vosa-Spec. 89.75-55 G 015

1 2 3 4 5 6 7

- 1 Punched latch needle with lateral milled part
- 2 Transfer needle
- 3 Total length in mm
- 4 Thickness 1 in 1/100 mm
- 5 Thickness 2 in 1/100 mm
- 6 Groz-Beckert
- 7 Variant from Groz-Beckert

SN-UM 85.150-110 G 7

1 2 3 4 5 6 7

- 1 Compound needle and jack
- 2 With transfer spring, mounted
- 3 Total length in mm
- 4 Thickness 1 in 1/100 mm
- 5 Thickness 2 in 1/100 mm
- 6 Groz-Beckert
- 7 Variant from Groz-Beckert

KT 139.85 G 4

1 2 3 4 5

- 1 Joint part
- 2 Total length in mm
- 3 Thickness in 1/100 mm
- 4 Groz-Beckert
- 5 Variant from Groz-Beckert

Glossary

Knitting machine needles

Vo... (Vo, Vosa ...)	Punched latch needles with one butt
Wo...	Punched latch needles with two butts
Deha, Ravisa, ...	Latch needles in wire
Vo-Spec. / Vosa-Spec.	Spring-loaded latch needles
SN (SN-N, SN-S, SN-M, ...)	Compound needles
Links needles	Latch needles with two hooks

System parts

KT	Joint parts
ZS	Intermediate jacks
AT	Selection parts
NT	Holding-down parts
UT	Transfer parts
AK (AK-S, AK-K, SN-S, SN-K)	Takedown comb parts

Topics taken from practice



Every customer has individual needs and challenges. By providing experience, expertise and available capacity, Groz-Beckert can help its customers on the road to success as a supplier of systems and solutions. What are your aims?

- Do you want to squeeze the very most out of your producing facilities?
- Are you in the business of producing flawless knit fabric to a premium standard of quality?
- Are you seeking new market fields and applications?
- Do you want your production to be sustainable and gentle on resources?

Talk to Groz-Beckert to discover ways of achieving your goals with maximum efficiency.

Pattern diversity and flexible use of yarn

Modern flat knitting machines not only carry out complex loop forming sequences, they have to cope with wide-ranging functional requirements and the most stringent aspirations. Alongside a wide variety of patterning and color possibilities, end customers also demand flexible use of yarn. Latch needles, compound needles and system components are a vital core component at the heart of every flat knitting machine.

The exceptional surface quality of Groz-Beckert needles in the areas of the transfer clip and stitch support, the inside arch of the hook, and the latch head, guarantees the gentlest possible treatment of the yarn during loop formation. The extreme contour accuracy of Groz-Beckert needles in terms of transfer clip and latch seat positioning, and the latch design itself, guarantee a consistently high standard of fabric quality.

Profitability/Productivity

Reduced needle consumption and improved process reliability during the transfer process due to exceptional surface quality and high contour accuracy

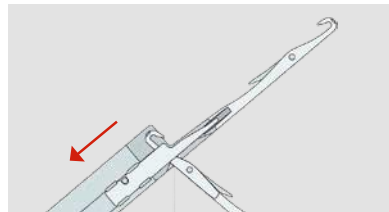
Quality

Consistent, flawless fabric quality, minimal subsequent work required

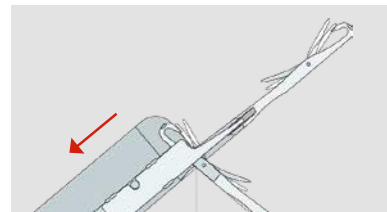
Innovation

Flexibility in terms of patterning possibilities and yarn input opens up scope for whole new fields of business.

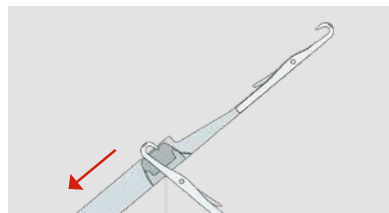
Transfer technologies



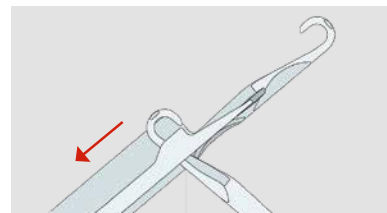
Latch needle with transfer spring



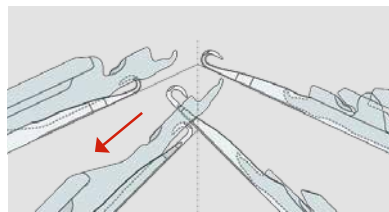
Spring-loaded latch needle with transfer spring



Latch needle with back slot



Compound needle with transfer spring



Compound needle with special jack for transfer function



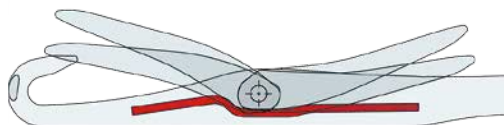
Transfer needle
Vo-Spec. 112.88-68 G 05

Compound needle with jack
SN-M 70.68-53 G 4

Reliable thread lay-in with spring-loaded latch needles

Rapidly changing fashion trends, more elaborate designs and patterning techniques, complex knitting processes and high quality requirements imposed on loop formation appearance – all of these can be implemented using spring-loaded latch needles.

Groz-Beckert spring-loaded latch needles are used for apparel textiles but also in other areas such as technical and medical applications. Spring latch-loaded needle technology is also ideally suited for the production of 3D fabrics.



The latch spring guarantees automatic spring-back of the needle latch to the open or closed position. This ensures reliable lay-in of the thread. Loose stitches are prevented from escaping. The effect is evident in uniform loop formation, even when knitting bulky, fluffy, or multiple thread yarns.

Profitability/Productivity

Reduced needle consumption and improved process reliability due to reliable thread lay-in and latch function when opening and closing

Quality

Uniform, flawless fabric quality

Innovation

Flexibility in terms of patterning possibilities and yarn input opens up scope for whole new fields of business.

Groz-Beckert patent

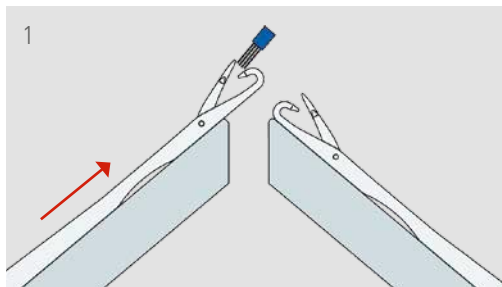
DE 10051029, EP 1197591
US 6,439,001 und JP 3857100



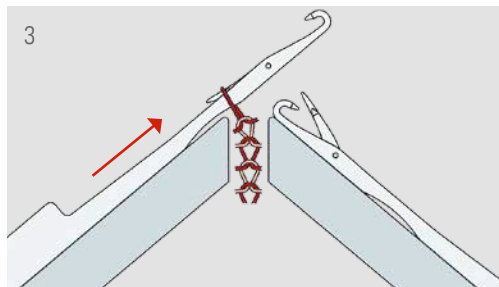
Vo-Spec. 112.70-62 G 01

Vo-Spec. 112.88-68 G 08

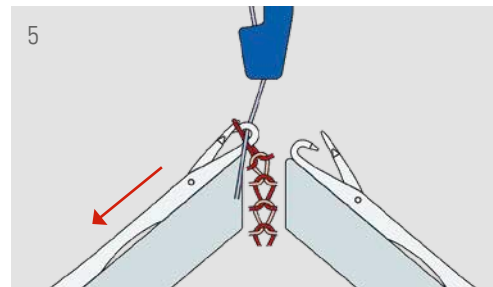
Function of spring-loaded latch needles



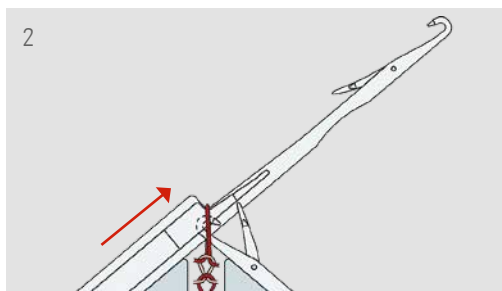
1 The needle latch is spring loaded. It springs back automatically to the open and closed position, guaranteeing simple knitting-on.



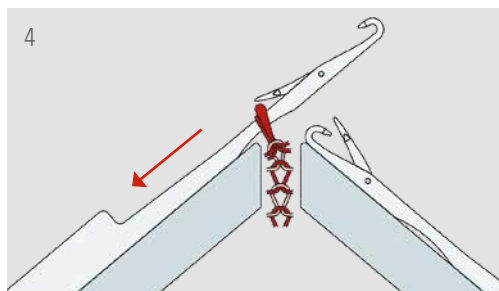
3 The low position adopted by the latch when open allows the loops to slide easily over the latch.



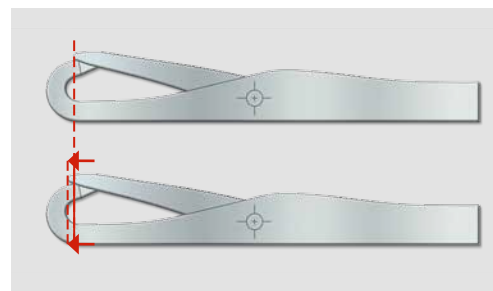
5 The spring-loaded effect means that a greater latch projection can be dispensed with. The loop slides more easily over the closed head during loop formation. The result is a uniform loop structure.



2 During transfer, the latch is opened securely and at an adequate distance from the hook.



4 The latch is raised again, preventing the escape of loose stitches. Bulky and fluffy yarns are no longer spliced open on needle takedown and can be processed without problems. This also applies to multiple-thread knitting.



Spring-loaded latch in comparison to a needle with large latch projection

Fully fashioned complete articles

Compared to traditional flat knitting, fully fashioned knitting enables the complete production of three-dimensional and anatomically fitting shapes. Complete fully fashioned articles do away with the need for disturbing seams, opening up scope for creative ideas, such as flowing structural elements on shoulder, neck and sleeve edges.

Although the knitting technology involved calls for a high level of technical expertise, it guarantees extremely good product quality and precisely identical articles as a result of the automated production process. The saving of costs, time and other production factors is a further positive side-effect. Working in close cooperation with machine manufacturers, Groz-Beckert continues to develop its portfolio of compound, spring-loaded latch and transfer needles for fully fashioned complete articles.

Profitability/Productivity

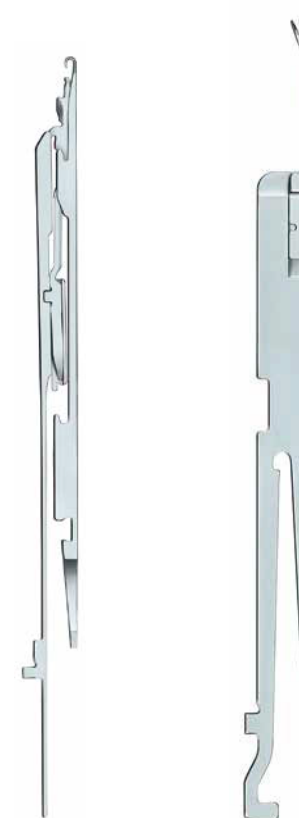
Time and cost efficiency by eliminating the need for making up and other production factors

Quality

Consistent, flawless fabric quality due to the automated production process

Innovation

Seamless and three-dimensional fully fashioned knits offer potential for creative designs.

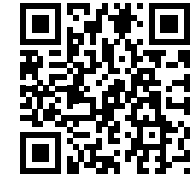


Compound needle
SN-M 100.68-53 G 2

Transfer needle
Vo-Spec. 112.70-62 G 01

Technical and industrial textiles

Yarns and knitting techniques which expose flat knitting needles to high levels of wear call for special needle properties. The Groz-Beckert range encompasses latch and compound needles for extreme demands.

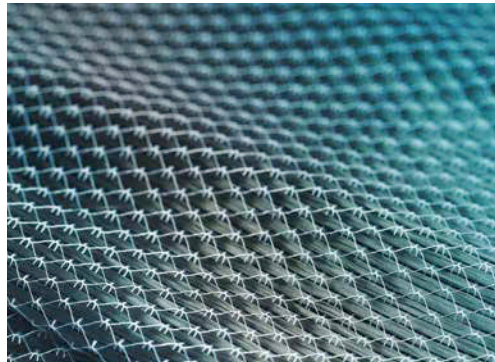


More information is provided in the product data sheet „Flat knitting needles for technical textiles“

These needles are perfectly suited for the manufacture of technical and industrial textiles as well as fully fashioned fabrics for special applications such as shoe uppers.

Profitability/Productivity

Reduced needle consumption and improved process reliability due to greater hook stability, improved casting off behavior in tight-knit fabrics and reliable latch function when opening and closing

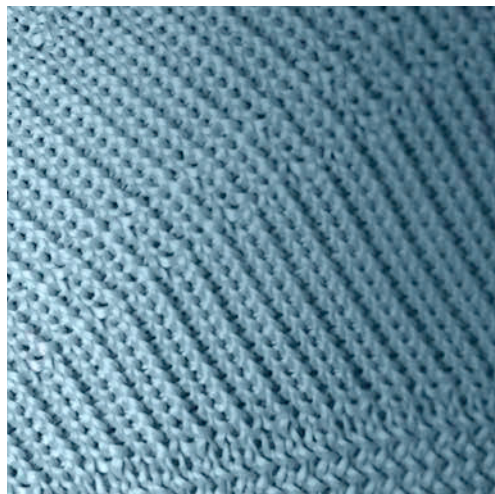


Quality

Uniform, flawless fabric quality

Innovation

Special needle characteristics enable entry into new and innovative fields of business, for instance using multi-gauge needles enables the processing of a wide yarn spectrum.



Latch needle: Vosa-Spec. 89.68-52 G 07



Latch needle: Vosa-Spec. 89.75-64 G 044



Spring-loaded latch needle: Vo-Spec. 112.70-62 G 08



Spring-loaded latch needle: Vo-Spec. 112.88-75 G 012



Compound needle: SN-M 100.90-80 G 1

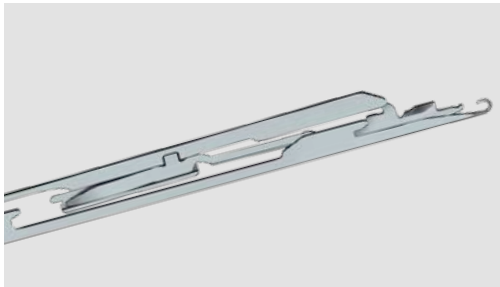


Compound needle: SN-M 100.68-53 G 2

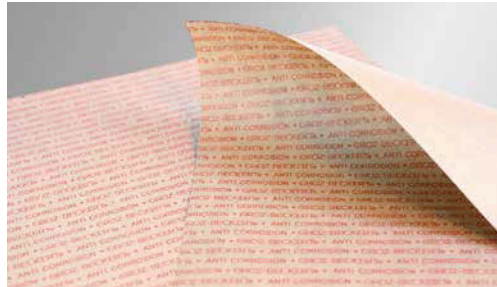
Packaging, transport and storage

Smart packaging solutions from Groz-Beckert provide you with active support in improving your cost efficiency. Less work effort directly reduces your set-up times. The effect: Reduced production costs compared to competitors.

Protective film with corrosion protection oil



Corrosion protection paper



Packaging made of fracture-resistant material with adhesive tape



Packaging solution for needles and system parts

Climatic influences such as humidity and temperature fluctuations have a permanent impact on knitting machine parts and could compromise quality due to corrosion. To counter this effect, Groz-Beckert developed systems for packaging its products which can comprise three components:

- Corrosion protection oil surrounds the product with an active corrosion protection.
- Corrosion protection paper reduces the influence of oxygen and water on the product.
- Plastic packaging prevents damage during transport and storage.

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KNITTING , WEAVING , FELTING , TUFTING , CARDING , SEWING

