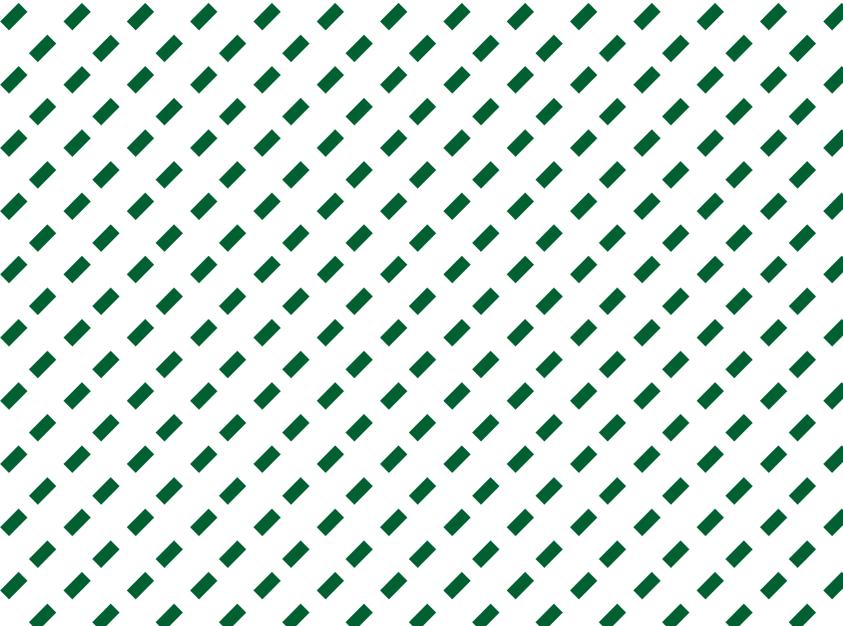


# Sewing

INH Quality Management



## INH Quality Management from Groz-Beckert

Groz-Beckert is the world's leading provider of industrial machine needles, precision parts and fine tools, as well as systems and services for the production and joining of textile fabrics. With around 70,000 product types, Groz-Beckert serves the fields of knitting, weaving, felting, tufting, carding and sewing. Groz-Beckert has stood for variety, precision and quality since 1852 – and fully supports its customers and partners within the textile value chain.

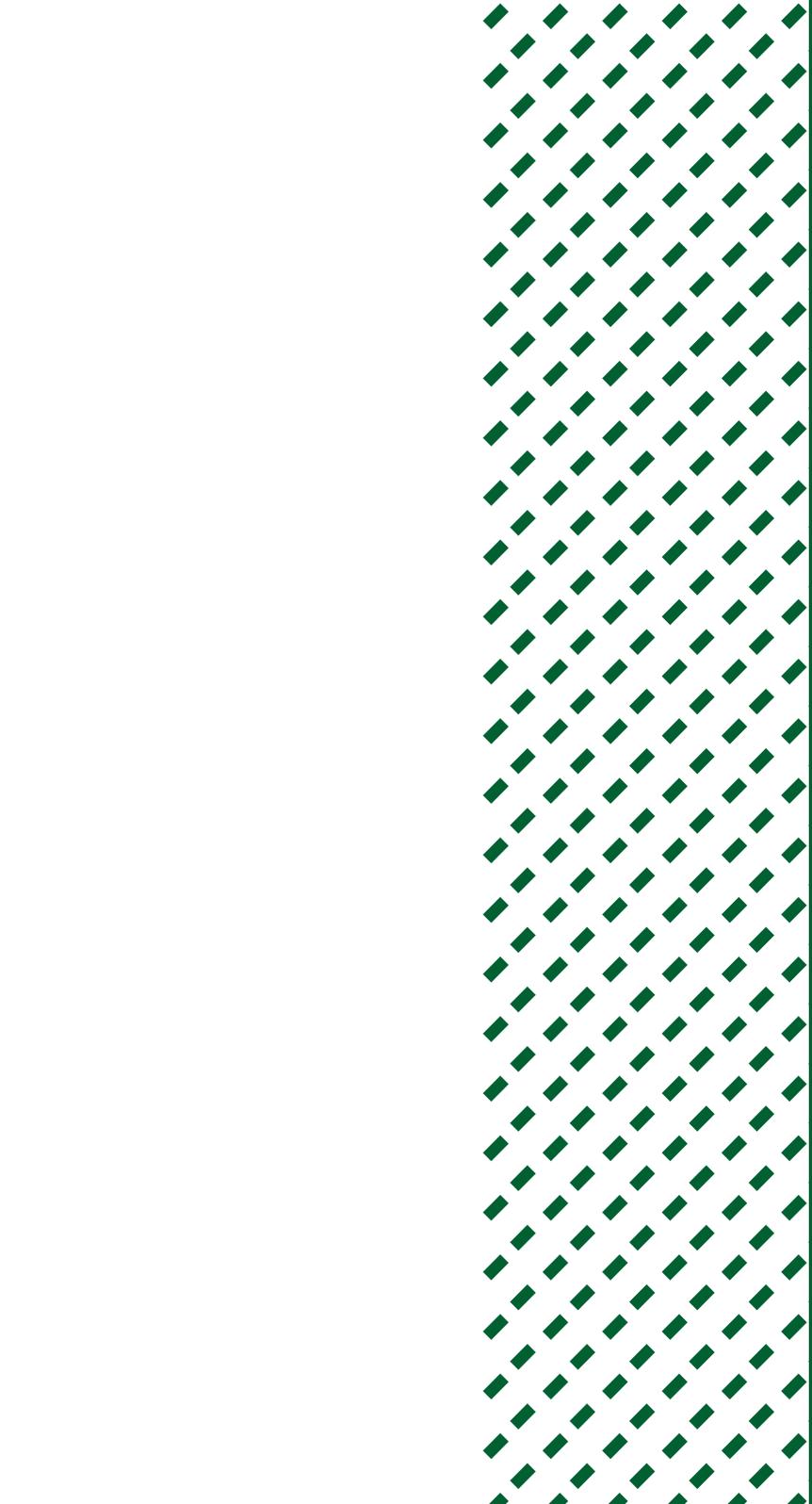


Groz-Beckert has been offering an extensive range of sewing and shoe machine needles for more than 30 years. The high product quality and numerous further developments and innovations have made Groz-Beckert one of the leading providers in this area.

But Groz-Beckert isn't just indispensable due to its high-quality product range, but also due to the numerous services it offers. In addition to the sewing and joining service, customers also have access to a wide range of digital services that support them before, during and after the production process.

These services also include INH Quality Management, which offers the sewing industry a tailor-made solution for handling sewing machine needles. Not only can brand owners' regulations regarding contamination be met more effectively, but the entire handling of needles within the production process becomes more efficient, safer and more orderly.





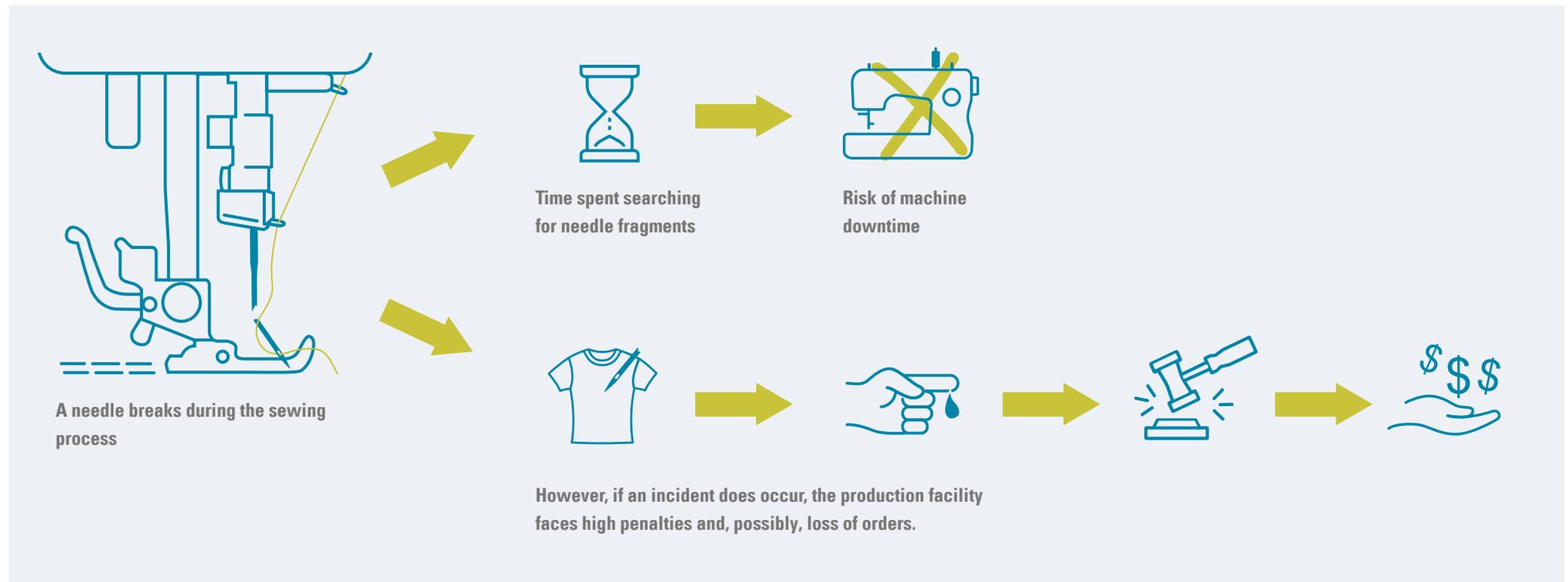
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## Challenges in the sewing industry

The sewing industry faces many challenges today. Alongside the highest possible productivity, maximum occupational safety and increasing environmental considerations play a major role. The buyers or brand owners also place great importance to a safe end product, which is why they make a wide range of specifications (= compliance) for the sewing companies, which ensure the highest possible level of safety for the end consumer.

### The biggest challenge in the production process: A broken needle



# The importance of the sewing machine needle in the production process

The sewing machine needle is of great importance during the production process: It is essential for the sewing process itself. At the same time, handling the sewing machine needle is also a major challenge.

## High expenditure



- High administrative burden in needle dispensing stations for needle storage and dispensing
- High amounts of time spent on needle replacement
- High expenditure for environmentally friendly disposal of needles and their packaging
- High time and space requirements for documentation and physical storage of needle breakages

## No monitoring option



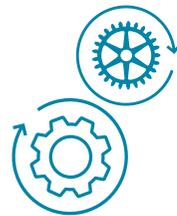
- Needle consumption cannot be determined precisely
- Grey stock of needles within the production floor possible
- No guarantee that every needle breakage will be reported

## Broken and damaged needles



- Strict buyer requirements for handling broken needles
- Duty of documentation of needle breakages
- Long search times for needle fragments in some cases
- Bottlenecks in production possible

## No uniform standard



- Different specifications of the respective customer
- Changing the customer means adapting the work process
- Regulations are sometimes not consistent and lead to gaps in the process



## Conclusion:

Where sewing machine needles are used, a continuous process is required that guarantees complete documentation and a safe end product.

## INH Quality Management as a solution

The patented INH Quality Management developed by Groz-Beckert stands for Ideal Needle Handling. It facilitates the handling of sewing machine needles within the production process and supports adherence to the compliance regulations.



### Handling of needles:

General process that takes into account the buyer's compliance regulations and significantly reduces the effort involved

### Safe end product:

Needle residue in textiles is almost completely avoided, thus reducing penalties

### Efficiency:

Increase of efficiency throughout the production process

### Environment:

Environmentally-friendly disposal of needles on site is made possible, and waste is reduced

### Occupational safety:

Ergonomic work equipment and independent actions



## INH Quality Management and its components

As part of INH Quality Management, an individual process for handling needles is set up. This includes the storage and dispensing of needles as well as a detailed procedure for searching for needle fragments. In addition, INH makes it possible to document and archive all needle changes.

### Digital documentation of all needle changes

With Smart INH, all needle changes are documented digitally. No need to stick on and store broken needles, and damaged or broken needles can be disposed of immediately. The generated image data sets of the replaced needles can be accessed digitally at any time.

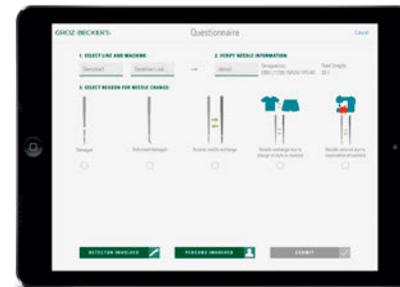
In order to comply with the process, INH Quality Management comprises the following components:



The **needle dispensing trolley** replaces the needle dispensing desk and is used to store new needles and various tools. In addition, it serves as a collection point for used and broken needles.



The **needle return box** is used for collecting and returning broken and damaged needles. The inserted needle pass keeps all data ready for digital documentation.



With the **INH@site app**, all needle changes are documented digitally. The necessary data comes from the needle pass and the INH@office management software.



All relevant data such as production orders or machine inventory are maintained in the **INH@office management program**. Up-to-date data on the key figures and various evaluations is also made available on a daily basis.



Details on the needle dispensing trolley in the data sheet "Needle dispensing trolley"

## The needle dispensing trolley in detail

The needle dispensing trolley is optimally adapted to the INH process and thus enables a smooth and fast needle change.



### Worktop

With holder for a tablet on which the digital documentation of the needle change is carried out



### Drawer 1

Two separate collection containers for used or broken needles



### Drawer 2:

Storage location for new needles



### Drawer 3

Different tools for changing needles



### Drawer 4:

Electronic equipment, e.g. metal detector



### Drawer 5:

Can be used individually, e.g. as additional storage space for new needles



### Drawer 6:

Hanging register for documentation and collection point for empty packaging



### Magnetic broom

For searching for needle fragments and for holding metal parts



## Needle return box

The patented needle return box is used to collect and give back broken or used needles. A connection to INH@office is established via the data matrix code on the inserted needle pass when documenting the needle change.



### The details:

- Every sewing machine in the factory gets its own needle return box.
- A needle pass with a data matrix code printed on it is inserted into the box. This data matrix code refers to the sewing machine to which the box belongs. The currently used needle and the current production order are assigned to the machine via INH@office.
- When documenting a needle change/needle breakage, a connection to INH@office is established via the data matrix code and the data required for the documentation is used.



Needle return box with needle pass and needle

### More benefits:

- The printed scale makes it easy to see whether all pieces of the broken needle have already been found.
- The box contains a strong magnet so that the pieces of broken needle remain safely in the box.
- The box can be closed tightly and securely. This prevents needle fragments from being lost during transport or handover and avoids the risk of injury from sharp needle parts.



Closed needle return box



Details on the needle dispensing trolley in the data sheet "Smart INH"

## INH@office and INH@site

In order to avoid the need for manual documentation of needle breakages and physical storage of broken needle pieces, the INH Quality Management is completed by two software components: the mobile app INH@site for iOs and the web application INH@office designed for a browser. This means that all needle changes can be documented completely digitally.

### How does Smart INH work?

- The INH@site app is installed on the tablet that is mounted on the needle dispensing trolley.
- All relevant factory data is maintained in the INH@office web application (production lines, machinery, production orders, etc.)
- If a needle is changed, the broken needle pieces or the damaged needle are photographed with the app. The relevant documentation is carried out in simple steps directly in the app.

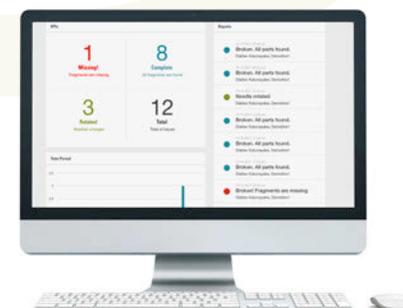
- For this purpose, a connection to INH@office is established via the needle pass inserted in the needle return box. The data required for documentation is automatically used.
- The INH@site app generates an image data set. This includes the picture of the needle or the needle fragments, the time and place of the needle change and the associated production order. This image data set is transferred to INH@office and stored securely in a cloud.



The damaged needle or broken needle pieces are photographed



Documentation in INH@site



INH@office provides the required data for documentation. The generated image data set is saved there.

## Overview of the INH process

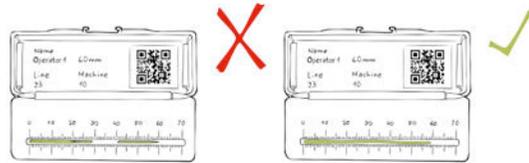
INH Quality Management specifies a continuous process for the replacement of sewing machine needles. This includes a close-knit procedure for searching for needle fragments as well as detailed and secure documentation of each needle change.



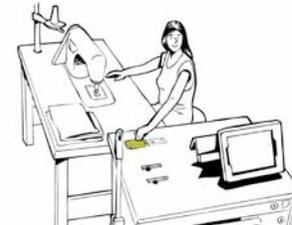
Extracts from a sample INH process in the event of a needle breakage:



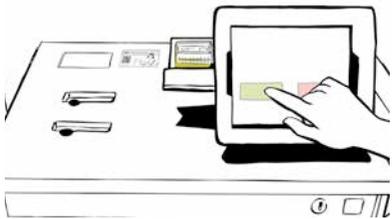
A needle breaks.



The operator searches for pieces of broken needle and collects them in the needle return box.



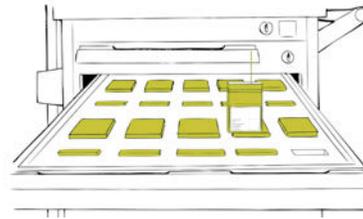
Once all fragments have been found, the operator hands over the closed return box to the needle dispensing person. This can be done either directly on the sewing machine or at a fixed trolley location.



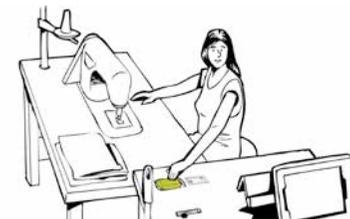
The needle dispensing person uses INH@site to take a picture of the broken needle and carries out the documentation.



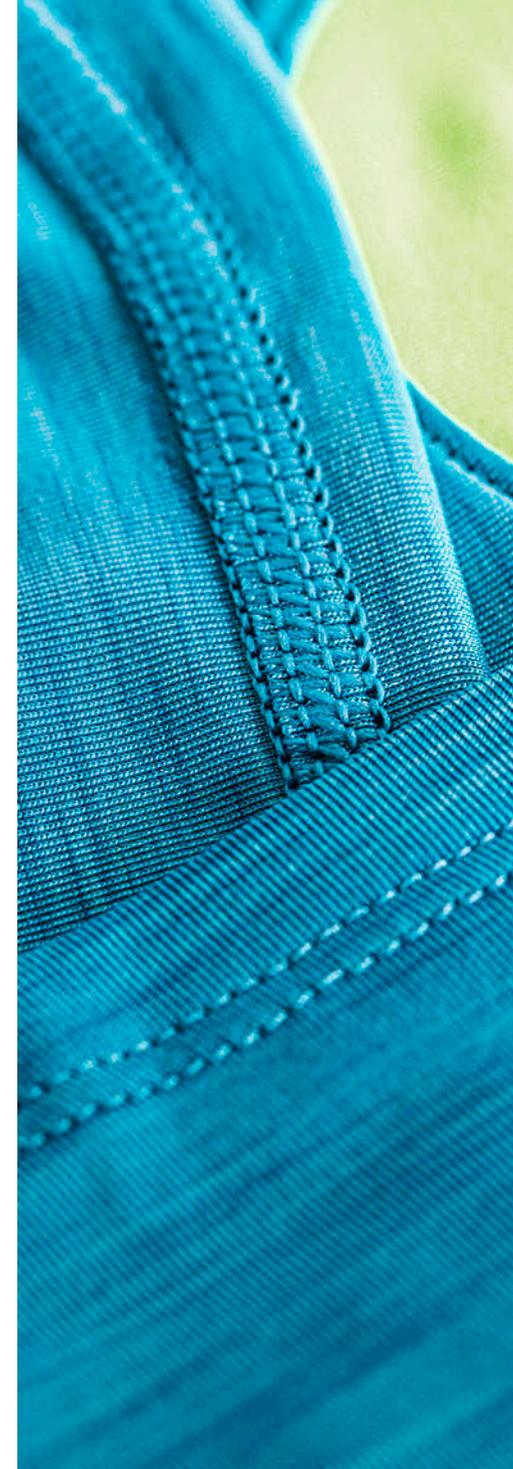
The needle dispensing person inserts the pieces of broken needle through the opening into the collection container.



The needle dispensing person removes a new needle and places it in the needle return box.



The operator takes the closed box and inserts the new needle into the machine.



## Overview of the INH process



Details on the needle dispensing trolley in the data sheet "Smart INH"

INH Quality Management uses the following procedure for searching for needle fragments:



1. The operator removes the mounting shank of the needle from the sewing machine and the broken needle piece hanging from the thread.



2. The operator searches on the ground around the sewing machine while seated.



3. The operator searches the workstation with the magnetic tool.



4. The operator stands up and pats down their body carefully.



5. The operator uses the magnetic brush under the table to check for needle fragments.



6. The operator uses the hand-held scanner to search first at the point most recently sewn, and then over the entire garment.



7. The operator inspects the garment at the metal detector.



8. The mechanic searches for needle fragments in the sewing machine and in the oil bath.

### Note:

If not all needle fragments are found despite extensive searches, an authorized person confirms that the sewing process can be continued.

# INH Quality Management – a benefit across the board

The use of INH Quality Management not only helps to meet the buyer’s compliance requirements, but also contributes to improving overall efficiency and ensuring a safe end product.



| Maximized profits   | Increased efficiency   | Transparency  | Improved carbon footprint   | Increased safety and responsibility   |
|---|--|---|---|---|
| Virtually rules out needle fragments in the end product and thus avoidance of penalties | Uniform and consistent process   | Complete documentation, as both needle breakages and all needle changes are recorded. | Avoidance of waste and storage space due to digital documentation of needle breakages | Safe end product  |
| Reduction of production downtime  | Significant reduction of effort required for handling needles                  | Detailed overview of needle consumption and detection of problem areas                | Immediate disposal of used and broken needles possible according to local regulations | The needle supply is located in a safe place that can only be accessed by authorized personnel. |
| Securing new orders   | Customer audits can be carried out without any problems (including digitally). | Only needles that are currently in use are located within the sewing lines.           |   | Independent actions of employees<br><br>Ergonomic work equipment                                |



## Final information

### The scope of delivery of INH Quality Management includes:

- Needle dispensing trolley incl. accessories
- Analysis of the existing process and definition of an individual INH process
- Installation and training by Groz-Beckert
- Free app INH@site
- Free access to INH@office
- Free cloud storage
- Technical support for INH@site and INH@office
- Continuous development

### The following accessories are available:

- Needle return boxes
- INH passes
- Needle passes
- Recycling boxes



INH passes with strip



Recycling boxes

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