

**Doctor Holder**  
Pneumatic

# Operating Manual

Product description: CLOUTH HS-1 QUICK-TOP



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## 1 General

### 1.1 Information on these instructions

These instructions contain important information on the safe and proper use of the doctor holder. It is intended for persons who are entrusted with the installation, commissioning, operation and maintenance of the product. The doctor holder is an aid.

### 1.2 Explanation of Symbols

In this manual, the following icons are used.



#### **DANGER!**

**Type and source of danger!**

A failure to comply with a danger notice with the signal word “Danger” will cause death or extremely serious injuries.

Take this measure to prevent the danger.



#### **WARNING!**

**Type and source of danger!**

A failure to comply with a danger notice with the signal word “Warning” can cause death or extremely serious injuries.

Take this measure to prevent the danger



#### **CAUTION!**

**Type and source of danger!**

A failure to comply with a danger notice with the signal word “Caution” can cause injuries.

Take this measure to prevent the danger.



#### **NOTE:**

A “Note” indicates additional information to work easier and better, or provides notes for using the doctor holder.

### 1.3 Limitation of liability

The manufacturer is not liable for damage caused by improper use or non-compliance with these operating instructions.

### 1.4 Declaration of incorporation in accordance with the Machinery Directive 2006/42/EG:

The doctor holder is initially supplied as an aid. When connected to the overall machine, it becomes partly completed machinery in the sense of the Machinery Directive 2006/42/EG.

The operator is obliged to carry out a new risk assessment after connection to the overall machine in order to ensure the safety of the overall system.

At the request of the operator, the manufacturer shall issue a declaration of incorporation certifying that the doctor holder complies with the essential requirements of the Machinery Directive 2006/42/EG.

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#### 1.5 Copyright

These instructions are protected by copyright. Reproduction or disclosure to third parties is only permitted with the express permission of the manufacturer.

#### 1.6 Guarantee and warranty

Our General Terms and Conditions (GTC) apply exclusively to all business relationships with our customers. These are available at [\[https://www.clouth.com/de/mediathek/allgemeine-geschaftsbedingungen\]](https://www.clouth.com/de/mediathek/allgemeine-geschaftsbedingungen) or can be sent on request. Deviating general terms and conditions of the buyer shall not become part of the contract unless we have expressly agreed to their validity in writing.

## 2 Safety

### 2.1 Proper use

The proper use of doctor blade holders is to guide doctor blades.  
Any other use is prohibited.

### 2.2 General Cause of Risks



#### **DANGER!**

- Risk of crushing due to moving parts
- Risk of injury from sharp doctor blades
- Danger from compressed air

### 2.3 Responsibility of the operator

The operator is responsible for:

- Compliance with all applicable safety regulations and regular maintenance of the doctor holder.
- Performing a risk assessment to identify hazards in the workplace.
- The definition and implementation of necessary protective measures, including safety labeling.
- Ensuring the safety and health of employees when using work equipment.
- Provide operating instructions for the operating personnel.
- Within the European Union, observe EU Directive 89/391/EEC on “Improving the safety and health protection of workers at work” as well as national regulations (for example, in Germany the Ordinance on Industrial Safety and Health (BetrSichV)).

### 2.4 Employee qualification

The operator must ensure that only appropriately qualified and authorized personnel work on this machine. He is responsible for ensuring that the operating and maintenance personnel have the necessary qualifications. The personnel must be at least 15 years old. All persons working with or on the machine must have read and understood these operating instructions. The operator must document in writing that the operating and maintenance personnel have read and understood these instructions, as well as the regular training courses.

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#### 2.4.1 Operating staff

Before starting work, the operating personnel must be adequately trained in the type and scope of the respective activity and possible hazards. Training must be carried out regularly (at least once a year). Training must be carried out after every technical change.

#### 2.4.2 Maintenance staff

The staff for maintenance and repair must be qualified and

- o be sufficiently trained for the respective activities
- o know and follow the relevant technical rules and safety regulations

Qualified staff are those who, based on their technical training and experience as well as knowledge of relevant provisions, applicable standards and safety regulations, can carry out the required activities and recognize and avoid possible dangers.

#### 2.5 Safety marking

Safety signs may be attached to the machine to indicate danger zones or the use of personal protective equipment. Missing safety signs and safety signs that are no longer legible must be replaced immediately by the operator.

#### 2.6 Personal protective equipment

When working with the doctor holder, always wear the personal protective equipment provided by the operator.



##### **Wear safety glasses!**

Risk of eye injuries and loss of vision due to flying dirt particles.  
Protect your eyes by wearing safety glasses.



##### **Use foot protection!**

Risk of slipping on slippery surfaces, injuries from sharp doctor blades or falling parts!  
Protect your feet by wearing foot protection.



##### **Use hand protection!**

Danger from sharp and hot doctor blades.  
Protect your hands by wearing cut-resistant and heat-resistant hand protection.



##### **Wear protective clothes!**

Danger of being pulled in by moving machine parts or getting caught on machine parts. Danger from sharp doctor blades!  
Wear close-fitting and cut-resistant protective clothing.

#### 2.7 Safety devices

The doctor holder does not have its own safety devices. These must be ensured by the operator.

#### 2.8 Secure against restarting

Before carrying out maintenance and cleaning work on the doctor holder, the area must be disconnected from the power supply and compressed air and secured against being switched on again.

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#### 2.9 Behavior in the event of danger

In the event of danger, the system must be switched off immediately and the emergency number dialed.

### 3 Environmental protection

When disposing of the doctor holder, the applicable national environmental regulations in the country of use must be observed.

## 4 Technical data

#### 4.1 Presentation of the technical data

|                             |                                                                                              |
|-----------------------------|----------------------------------------------------------------------------------------------|
| PRODUCT DESCRIPTION         | CLOUTH HS-1 QUICK-TOP                                                                        |
| TYPE                        | Tube holder / Single tube holder                                                             |
| OPERATING MODE              | Pneumatic                                                                                    |
| TOP PLATE                   | Carbon fiber-reinforced polymer / with pre-assembled QUICK-TOPSYSTEM (to pull the top plate) |
| TOP PLATE THICK             | 4 mm (standard)                                                                              |
| TOP PLATE LENGTH            | Doctor blade length plus 30 mm                                                               |
| FINGER                      | Stainless steel                                                                              |
| BLADE GAP                   | 4,5 mm (standard)                                                                            |
| SEALING                     | spring steel sealing                                                                         |
| BOTTOM TRAY / ADAPTER STRIP | Stainless steel / with integrated longitudinal axis                                          |
| PRESSURE TUBE               | CLOUTH AIRFLEX 230 / CLOUTH AIRFLEX 100                                                      |
| TUBING CONNECTION SYSTEM    | AIRFLEX ADAPTER-KIT                                                                          |
| WEIGHT                      | Weight per meter 8,25 kg                                                                     |
| DOCTOR BLADE HOLDER LENGTH  | Length of the top plate plus 120 mm (2x60 mm standard)                                       |
| MEASUREMENTS OF BLADE NIP   | 2,5 bar (550 N/m)                                                                            |
| CONNECTION                  | Standard-connection G1/4 internal thread                                                     |

#### 4.2 Technical data in detail

- Product description: CLOUTH HS-1 QUICK-TOP
- Specific properties and applications:  
This doctor blade holder can be used in all areas/positions of the paper machine.

#### 4.3 Alternative versions

- **Doctor holder with compressed air connection:** This is the standard version. There are no alternative options available.
- **Doctor holders in various lengths:** The dimensions of our doctor blade holders (width x height) are constant, while the length varies depending on the roller length. For modifications, such as changing from third-party holders to CLOUTH doctor holders, adapter are usually used.

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## 5 Construction and function

### 5.1 Short description

The CLOUTH HS-1 QUICK-TOP doctor blade holder is used for the secure mounting and precise positioning of doctor blades during roll cleaning. As a versatile system, it is suitable for use in almost all areas of the paper machine. The cover plate, equipped with the pre-assembled QUICK-TOP system (for easy removal of the cover plate), as well as the fingers and pressure hose, can be completely removed from the base tray.

### 5.2 Overview

CLOUTH HS-1 QUICK-TOP top plate



Figure 1

CLOUTH HS-1 QUICK-TOP bottom try

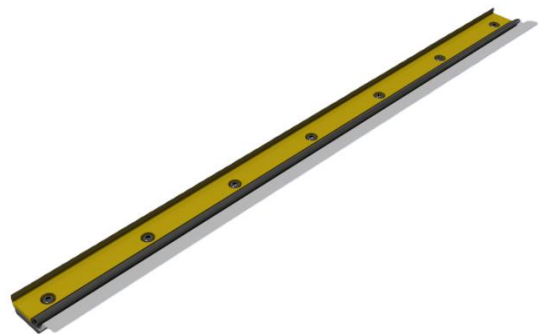


Figure 2

pressure tube with AIRFLEX ADAPTER-KIT



Figure 3

doctor blade holder with doctor blade

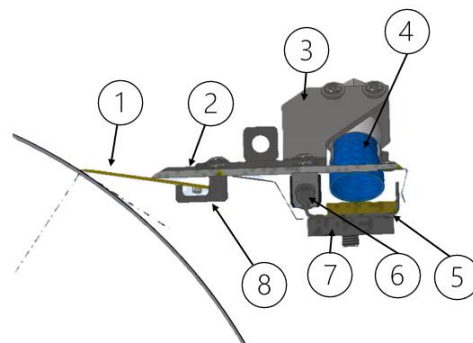


Figure 4

1. doctor blade
2. top-plate
3. QUICK-TOP
4. pressure tube
5. bottom try
6. centre bearing
7. adapter strip
8. doctor blade guide

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#### 5.3 Scope of delivery

- doctor holder
- operating manual

#### 5.4 Process and functional description

The doctor holder is pneumatically operated. The doctor blade is pressed against the roll surface by increasing the pressure, effectively removing contaminants. To retract the blade, the pressure tube is vented, releasing the pressure and allowing the blade to lift off the roll surface.



#### NOTE:

The tubes must be operated with a maximum pressure of 2.5 bar. A higher operating pressure is not permitted.

#### 5.5 Description of the assemblies

The doctor holder is divided into an upper and a lower section. The upper section, preassembled with the QUICK-TOP SYSTEM (for removing the top plate), including the fingers and pneumatic hoses, can be pulled out of the lower section. The bottom tray is mounted onto the doctor beam. These assemblies consist of the following component:

##### 5.5.1 Doctor holder top (top-plate)

- Top-plate
- Finger with central bearing
- Compressed air tube with AIRFLEX ADAPTER-KIT
- QUICK-TOP

##### 5.5.2 Connections (pressure tube, AIRFLEX ADAPTER-KIT)

- The threaded closure pieces on the doctor holder are connected to the company's compressed air system on the tender side and drive sides. The operator is responsible for the connection to the entire machine.

##### 5.5.3 doctor holder base (bottom tray)

- bottom tray with integrated center pole
- spring steel
- insulation strip
- adapter strip

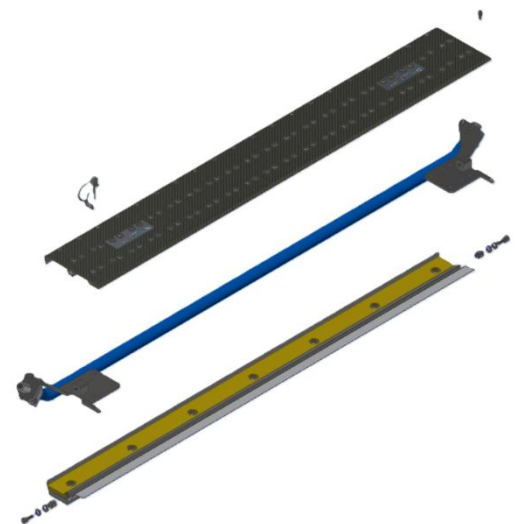


Figure 5

#### 5.6 Displays and controls

The operator has the option of ordering a control cabinet or control panel. The operator is responsible for the connection to the entire machine.

#### Explanation:

- **Optional order:** The operator can purchase a control cabinet or control panel for the control of the doctor holder if required.
- **Self-responsible connection:** The connection of the control cabinet or control panel to the entire machine is the responsibility of the operator.

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- **Integration into the control system:** The operator must ensure that the control cabinet or control panel is properly integrated into the control system of the overall system.
- **Safety:** The operator is responsible for compliance with all applicable safety regulations when connecting and operating the control cabinet or control panel.



#### Note:

The control cabinet or panel must comply with applicable standards and safety regulations.

## 6 Operating mode

The pneumatic mode of operation allows this doctor holder to adapt to the roller efficiently and precisely through the use of compressed air.

## 7 Accessories, tools, auxiliary means

Tools for pulling the doctor blades:

CLOUTH DOCTOR-PULL HS-1

Tools for adjusting the doctor system:

CLOUTH-SCHABERWINKEL EINSTELLEHRE

CLOUTH DOCTOR-GAUGE

CLOUTH DOCTOR-CHECK

Cleaning tools:

CLOUTH DOCTOR-CLEAN II

## 8 Transport



#### Note:

When transporting the doctor holder to the machine within the company, the following safety precautions must be observed to prevent damage to the product and injury to persons:

- **Suitable means of transport:**  
Use suitable transport equipment such as pallet trucks, forklifts, or trolleys designed for the weight and dimensions of the doctor holder. Ensure that the transport equipment is in perfect condition and regularly maintained.
- **Safe handling:**  
Carry the doctor holder carefully and use appropriate lifting aids if necessary. Pay attention to the weight of the doctor holder and avoid sudden movements. Wear appropriate protective equipment, such as protective gloves and safety shoes.
- **Transport safety:**  
Secure the doctor holder on the means of transport to prevent it from slipping or falling over during transportation. Use suitable lashing equipment and observe the center of balance.
- **Transport routes:**  
Choose suitable transportation routes that are free of obstacles and unevenness. Ensure that the transport routes are adequately lit and marked.  
**Internal traffic regulations:**  
Observe the internal traffic regulations and speed limits. Watch out for pedestrians and other vehicles.
- **Caution in tight areas:**  
Be particularly careful when transporting the doctor holder through narrow spaces or doors. Use a guide if necessary.
- **Protection from damage:**

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Protect the doctor holder from impacts, vibrations and other external influences during transportation. Make sure that no other objects can fall onto the doctor holder.

- **Packaging:**  
If possible, leave the doctor holder in its original packaging until installation.



#### **Note:**

If you have any questions or uncertainties regarding transportation, please contact the manufacturer.

### 8.1 Transport inspection

The doctor holder must be checked for damage before transportation.

### 8.2 Symbols on the packaging

The transport box is labeled with the company logo.

### 8.3 Packaging

Wooden transport box

### 8.4 Transport dimensions

Transport dimensions and weight: Varies according to customer-specific requirements.

### 8.5 Storage

Store the doctor holder in a dry, clean and level place.

## 9 Installation and commissioning



#### **Note:**

Installation and initial commissioning may only be carried out by qualified and authorized personnel.

### 9.1 Requirements for the installation location

- level and strong surface
- enough space for operation and maintenance
- Protection against extreme temperatures and moisture

### 9.2 Preparations

- Checking the scope of delivery  
Cleaning the installation place

### 9.3 Installation

- Positioning the blade holder
- Fastening the doctor holder

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#### 9.4 Connect

- Compressed air connection produces (are handled by the operator)

#### 9.5 Initial commissioning

- Carry out a function test
- Doctor blade insert
- Make adjustments (angle adjustment according to customer specifications)

#### 9.6 Operation and use

The operator is responsible for determining how the doctor holder is operated and when it is put into operation.

##### Explanation:

- **Responsibility of the operator:** As the doctor holder is a tool that is integrated into a complete system, is the operator responsible for operation and commissioning.
- **Integration in the overall plant control system:** The operator must ensure that the doctor holder is properly integrated into the control system of the overall system.
- **Staff training:** The operator is responsible for providing the operating personnel with sufficient training and information on the safe operation of the doctor holder. See chapter 2.4.  
**Compliance with regulations:** The operator must ensure that the operation and commissioning of the doctor holder complies with the applicable standards and safety regulations. See chapter 2.3.



##### Note:

The manufacturer of the doctor holder accepts no responsibility for the operation and commissioning of the product by the operator after acceptance.

#### 9.7 Safety

Observe the safety instructions in this manual.

#### 9.8 Activities before use

- Visual inspection of the blade holder
- Function test of the doctor holder and the safety devices

#### 9.9 Switching on and off

The operator is responsible for deciding when to put the doctor holder into or out of operation.

##### Explanation:

- **Operator's own responsibility:**  
As the doctor holder is integrated into an overall system, the decision to switch it on and off lies with the operator.
- **Integration in the control system:**  
The operator must ensure that the doctor holder is properly integrated into the control system of the overall system to ensure safe switching on and off.
- **Staff training:**  
The operator is responsible for adequately training the operating personnel and informing them about safe switch-on and switch-off procedures. See chapter 2.4.
- **Compliance with regulations:**  
The operator must ensure that switching the doctor holder on and off complies with the applicable safety regulations and standards. See chapter 2.3.

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#### Note:

The manufacturer of the doctor holder accepts no responsibility for the operator switching the product on and off after acceptance.

### 9.10 Normal operation

Normal operation of the doctor holder is the sole responsibility of the operator. Care must be taken to ensure that the doctor holder is used exclusively for its intended purpose.



#### Note:

The manufacturer of the doctor holder accepts no responsibility for damage or injury caused by improper use or failure to observe the operating instructions.

#### 9.10.1 Special acts

- The doctor holder may only be cleaned and the doctor blades changed on a machine that is not in operation and at a standstill.



### WARNING!

#### Risk of injury from moving components

- Cleaning and doctor blade replacement may only be carried out when the machine is at a standstill in order to avoid injuries from moving parts.
- Before starting any work, the machine must be disconnected from the power supply and secured against unintentional reactivation.
- **Cleaning**
  - The doctor holder and doctor blades must be cleaned regularly to remove deposits and contaminants.
  - Use appropriate cleaning agents and tools for cleaning.
  - Follow the manufacturer's instructions regarding cleaning agents and procedures.
- **Doctor blade replacement:**
  - When replacing the doctor blades, ensure that the new doctor blades are correctly inserted and secured.
  - Use only doctor blades recommended by the manufacturer.
  - Dispose of worn doctor blades properly and in accordance with regulations.
- **Documentation:**
  - Keep a maintenance log in which you document the cleaning and maintenance work performed.



#### Note:

The manufacturer of the doctor holder assumes no responsibility for damage or injuries caused by improper cleaning or blade replacement.

#### 9.10.2 Activities after Use

- Cleaning of the doctor holder
- Visual inspection for damage, wear, or leaks

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#### 9.10.3 Cleaning

Cleanliness is a basic requirement for proper maintenance of the doctor holder and doctor blade. Deposits and/or dirt between the doctor blade and the top plate can cause irregular contact pressure, resulting in an uneven angle of attack. Additionally, these deposits can cause problems during doctor blade replacement.



#### **WARNING!**

##### **Risk of injury from moving components!**

- Make sure that the machine is switched off and disconnected from the power supply before cleaning, and secured against unintentional restarting.



#### **CAUTION!**

##### **Hazard from liquids and flying dirt particles!**

- Wear appropriate protective equipment during cleaning, such as safety goggles and protective gloves.
- Do not direct the water jet onto electrical components or connection.



#### **Note:**

Improper cleaning (for example, using unsuitable tools) or excessive compressed air cleaning of the doctor holder can cause the seal to tear out of the doctor holder.

#### **Explanation:**

- **Effective cleaning:**
  - Regular and thorough cleaning of the doctor holder should be carried out using compressed air or water. This effectively removes deposits, dirt, and production residues.
- **Drying:**
  - Dry the doctor holder thoroughly after cleaning to prevent corrosion.
- **Documentation:**
  - The regular cleaning of the doctor blade holders must be included in the maintenance schedule.

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## 10 Maintenance

Maintenance may only be carried out by qualified and authorized personnel. See chapter 2.4.



### WARNING!

#### Risk of injury from moving components!

- Before starting maintenance work, the machine must be disconnected from the power supply and secured against unintentional restart.
- Wear appropriate protective equipment during maintenance work, such as safety goggles and protective gloves.

#### Explanation:

- **Manufacturer Recommendations:**
  - Manufacturer recommendations serve as guidelines for maintenance intervals.
  - Depending on operating conditions, more frequent maintenance may be required.
- **Maintenance Schedule:**
  - The maintenance schedule includes all relevant maintenance tasks, intervals, and responsibilities.
  - Completed maintenance work is documented by the operator.



### Note:

- The manufacturer of the doctor holder assumes no liability for damages caused by improper maintenance or failure to follow the manufacturer's recommendations.

### 10.1 Maintenance Schedule

The maintenance of the doctor holder must be included by the operator in the maintenance schedule. Perform these tasks on the doctor holder at regular intervals. This ensures the functionality of the doctor holder and extends its service life. Operating with damaged or non-original parts compromises operational safety. There is a risk of injury and potential property damage.

#### Explanation:

- **Operator's responsibility:**
  - The operator is responsible for integrating the doctor holder into their existing maintenance schedule.
  - This ensures smooth operation and the longevity of the product.
- **Maintenance Schedule:**
  - A comprehensive maintenance schedule must include all relevant maintenance tasks, intervals, and responsibilities.
  - Documentation of performed maintenance activities is of great importance..
- **Manufacturer Recommendations:**
  - The manufacturer's maintenance recommendations must be strictly followed.
  - Nichteinhaltung kann zum Verlust der Gewährleistungsansprüche führen.
- **Warranty Loss:**
  - Failure to adhere to the manufacturer's maintenance recommendations may void the warranty for the doctor holder.
  - This means the manufacturer will not be liable for damages caused by inadequate maintenance.

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#### Note:

- The manufacturer's maintenance recommendations must be followed, and all performed work must be documented.
- If there are any questions regarding the maintenance of the doctor holder, the operator may contact the manufacturer.

## 10.2 Maintenance Tasks

To ensure smooth operation, we recommend performing a visual inspection for leaks, contamination, and damage at the start of each shift (but at least once daily). The operating personnel are responsible for this. Maintenance of the doctor holder is carried out according to the manufacturer's maintenance schedule. The manufacturer recommends the following maintenance intervals:

- **Regular Visual Inspection:**
  - Check the doctor blade holder for damage, wear, or leaks.
  - Pay special attention to tube, connections, and the doctor blade holder.
- **At Every Shutdown:**
  - Inspect the doctor blade holder for damage, wear, or leaks.
  - Clean the doctor blade guide by removing dirt, deposits, and production residues using a suitable high-pressure cleaner or water tube.
  - Regularly replace doctor blades according to manufacturer recommendations or when visible wear occurs.
- **Semi-Annually:**
  - Monitor the level of contamination; recommendation: regular cleaning of the systems to ensure smooth operation.
  - Inspect the doctor blade holder for damage, wear, or leaks.
- **Cleaning:**
  - Regular removal of dirt, deposits, and production residues using a suitable high-pressure cleaner or water tube.
- **Pressure Tubes:**
  - Pressure tubes are wear parts with a limited service life. Their lifespan is influenced by storage conditions, operating stress, and various operating factors. We recommend annual replacement to ensure the functionality and safety of the doctor blade holder. Replacement intervals are to be determined by the operator
- **Doctor Blade Replacement:**
  - Regular replacement of doctor blades according to manufacturer recommendations or upon visible wear.
  - Use original spare doctor blades to ensure optimal performance and safety.
- **Function Check:**
  - Check the proper function of all components, including compressed air connections, blade holder, and any existing control elements.
  - Test contact pressure and doctor blade angle.
- **Lubrication:**
  - Lubricate moving parts according to manufacturer specifications to reduce wear.
- **Leak Test:**
  - Check connections and tubes for tightness to avoid compressed air losses.
- **Manufacturer Recommendations:**
  - Depending on operating conditions, more frequent maintenance may be necessary.
- **Documentation:**
  - Maintain a maintenance log documenting all performed maintenance tasks, intervals, and materials used.

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### WARNING!

#### Risk of injury from moving components!

- Before starting maintenance work, the machine must be disconnected from the power supply and secured against unintentional restart.
- Wear appropriate protective equipment during maintenance work, such as safety goggles and protective gloves.



#### Note:

- If there are any questions regarding the maintenance of the doctor blade holder, the operator may contact the manufacturer.

## 11 Possible Malfunctions and Measures

The doctoring process is indirectly influenced by: the pulp, surface temperature, temperature differences, and the condition of the screen and felt.

| Error / Fault                                                   | Cause                                                                                                                                                                                                                                                         | Recommended Action                                                                                                                                                                                                                                                                                                                                           |
|-----------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Non-functional doctor blades                                    | <ul style="list-style-type: none"> <li>• Doctor blade used beyond the wear edge</li> </ul>                                                                                                                                                                    | <ul style="list-style-type: none"> <li>• In the future, ensure that the doctor blades are not worn beyond the wear edge.</li> <li>• Never increase the pressure when using a worn doctor blade.</li> </ul>                                                                                                                                                   |
| Uneven wear of the doctor blade                                 | <ul style="list-style-type: none"> <li>• Poor roller or cylinder surface</li> <li>• Dirty or damaged doctor blade holder</li> <li>• Deposits on the roller or cylinder surface</li> <li>• Doctor blade bar, holder, or blade not properly adjusted</li> </ul> | <ul style="list-style-type: none"> <li>• Use a more flexible doctor blade</li> <li>• Clean, repair, or replace the doctor blade holder</li> <li>• Clean the roller or cylinder surface</li> <li>• Overhaul the roller or cylinder</li> <li>• Check the adjustment of the doctor blade bar, holder, and blade; correct the adjustment if necessary</li> </ul> |
| Excessive wear in the middle or at the ends of the doctor blade | <ul style="list-style-type: none"> <li>• The doctor blade holder was adjusted so that it does not match the roller or cylinder surface</li> </ul>                                                                                                             | <ul style="list-style-type: none"> <li>• Readjust or reposition the doctor blade holder in the bar</li> <li>• If the misalignment is too large, send the bar for refurbishment</li> <li>• Replace the old, bent doctor blade holder bar</li> </ul>                                                                                                           |
| Excessive wear on one side                                      | <ul style="list-style-type: none"> <li>• The doctor blade holder is not set parallel to the roller/cylinder</li> </ul>                                                                                                                                        | <ul style="list-style-type: none"> <li>• Adjust the bearings and brackets parallel to the roller/cylinder axis</li> </ul>                                                                                                                                                                                                                                    |
| Even wear but rough doctor blade tip                            | <ul style="list-style-type: none"> <li>• Deposits on the roller</li> <li>• Excessive pressure on the doctor blade</li> <li>• Doctor blade material is too hard</li> </ul>                                                                                     | <ul style="list-style-type: none"> <li>• Clean the roller / cylinder</li> <li>• Reduce the doctor blade pressure</li> <li>• Use softer doctor blades more frequently</li> </ul>                                                                                                                                                                              |

## Doctor Holder

### Pneumatic

| Error / Fault                                                                                | Cause                                                                                                                                                            | Recommended Action                                                                                                                                                                                                                                                   |
|----------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Excessive wear in the web area                                                               | <ul style="list-style-type: none"> <li>Fine and filler particles from the paper web embedded in the roller/cylinder surface</li> </ul>                           | <ul style="list-style-type: none"> <li>Clean the roller / cylinder</li> <li>Bevel the doctor blades</li> <li>Use doctor blades with slotted ends to prevent excessive pressure buildup at the roller/cylinder edges</li> </ul>                                       |
| Excessive wear at the ends of the doctor blades                                              | <ul style="list-style-type: none"> <li>The paper web lubricates the roller/cylinder</li> </ul>                                                                   | <ul style="list-style-type: none"> <li>Slot the doctor blade ends to relieve pressure.</li> </ul>                                                                                                                                                                    |
| Partial chipping at the tip of the doctor blade                                              | The doctor blade is affected by: <ul style="list-style-type: none"> <li>Electrostatic charge</li> <li>Electrolysis</li> <li>Heat</li> </ul>                      | <ul style="list-style-type: none"> <li>Isolate the doctor blade assembly from the machine frame</li> <li>Use plastic blades</li> </ul>                                                                                                                               |
| Bulging doctor blade tip or burr at the trailing edge                                        | <ul style="list-style-type: none"> <li>Doctor blade material too soft</li> <li>Doctor blade pressure too high</li> <li>Doctor blade angle too shallow</li> </ul> | <ul style="list-style-type: none"> <li>Use harder doctor blades</li> <li>Reduce doctor blade pressure</li> <li>Check the doctor blade angle and readjust if necessary; if adjustment is not possible, use shorter doctor blades for a steeper blade angle</li> </ul> |
| Protruding doctor blade ends beyond the roller or cylinder surface                           | Doctor blade extends beyond the roller edge <ul style="list-style-type: none"> <li>Not centered</li> <li>Too long Incorrect oscillation</li> </ul>               | <ul style="list-style-type: none"> <li>Center the doctor blade</li> <li>Adjust the doctor blade length</li> <li>Adjust the oscillation stroke</li> </ul>                                                                                                             |
| Impact point at the trailing edge                                                            | Doctor blade contacts deposits on the roller during the startup phase                                                                                            | Change the doctor blade and remove deposits from the cylinder                                                                                                                                                                                                        |
| Wavy wear at regular intervals                                                               | Incorrect roller moistening                                                                                                                                      | <ul style="list-style-type: none"> <li>Close the moistening device</li> <li>Ensure even moistening using spray nozzles</li> </ul>                                                                                                                                    |
| Saber-shaped deformation of the doctor blade                                                 | Excessive heating of the doctor blade tip                                                                                                                        | Use doctor blades with expansion slots<br>Use plastic blades                                                                                                                                                                                                         |
| Doctor blade catches on the roller surface, rattles, or falls out of the doctor blade holder | Doctor blade not suitable for the respective doctor blade holder type                                                                                            | Adjust riveting and doctor blade length to fit the doctor blade holder                                                                                                                                                                                               |
| Doctor blade moves out of the holder due to oscillating movement                             | Doctor blade is not fixed in the doctor blade holder                                                                                                             | Use a DOCTOR-CLIP to fix the doctor blade in the doctor blade holder                                                                                                                                                                                                 |
| Doctor blade cannot be pulled out of or inserted into the holder                             | Doctor blade holder contaminated                                                                                                                                 | Clean the doctor blade holder at regular intervals                                                                                                                                                                                                                   |
| Pressure hose not functioning                                                                | Pressure hose is leaking / hardened                                                                                                                              | Clean the doctor blade holder, replace the pressure hose.                                                                                                                                                                                                            |

## Doctor Holder

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| Error / Fault                                                  | Cause                                                                                        | Recommended Action                                                                                                                                                                        |
|----------------------------------------------------------------|----------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Doctor blade bar cannot be engaged or disengaged               | Beam is difficult to move<br><br>The pneumatic cylinders have excessive play in the rod eyes | Clean the doctor holder system and repair the manual actuation of the doctor holder beam<br><br>Pneumatik Zylinder erneuern                                                               |
| Vibrations in the doctor blade system                          | Bearing is worn out                                                                          | Replace the bearings on both sides                                                                                                                                                        |
| Doctor blade holder without blade contacts the roller/cylinder | The doctor holder without a doctor blade is in contact with the roller / cylinder.           | Realign the doctor system and adjust it so that the doctor holder, when the doctor blade is retracted, maintains a distance of approximately 3–5 mm from the roller or cylinder surface.. |
| Doctor blade holder is prone to vibrations                     | Turnbuckles have excessive play                                                              | The doctor holder and beam must be secured. Replace the turnbuckles on both sides.                                                                                                        |
| Fingers detach from the top plate                              | Worn rivets on the top-plate                                                                 | Replace the rivets; if necessary, replace the entire top-plate.                                                                                                                           |

## Doctor Holder

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## 12 Disassembly and Disposal

Disassembly of the doctor blade holder may only be performed by qualified and authorized personnel. Before starting disassembly work, the following steps must be carried out:



### **WARNING!**

#### **Risk of injury from moving components!**

- Switch off the machine in which the doctor blade holder is integrated and secure it against unintentional restarting.
  - Ensure that no compressed air remains in the system.
  - Wear appropriate protective equipment, such as safety goggles and protective gloves
- 
- **Prepare the doctor blade holder:**
    - Remove all doctor blades from the doctor blade holder.
    - Disconnect all connections (compressed air, and if applicable, electrical).
  - **Perform disassembly:**
    - Loosen the fasteners securing the doctor blade holder to the machine.
    - Carefully remove the doctor blade holder from the machine.
  - **Disposal:**
    - Dispose of the doctor holder and all dismantled parts in accordance with the applicable environmental regulations.



### **Note:**

- Care must be taken when disassembling the doctor holder to avoid damage.
- Make sure that no small parts get into the machine.
- If you have any questions or uncertainties regarding disassembly, please contact the manufacturer.

## Doctor Holder

### Pneumatic

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#### Attachment

#### Quality documentation

Customer-specific data

#### Data sheets, drawing

Customer drawing

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