

# Hygienic Reprocessing

## HEINE® Standard F.O. Laryngoscope Handle (LED or XHL)

### General warning and safety information:



**WARNING!** This symbol draws attention to a **potentially dangerous situation**. Non-observance can result in moderate to major injuries.



**NOTE!** This symbol is used for information regarding installation, operation, maintenance or repairs that are important but are not associated with dangers.

	<p>Instructions on hygienic reprocessing must be adhered to, based on national standards, laws and guidelines. They must be implemented in the hospital / practice internal rules and guidelines.</p>
	<p>After each use and charging, carry out hygienic reprocessing. Equipment where there is a suspicion of exposure to Creutzfeld-Jakob disease (CJD) pathogens or variants must not be reprocessed under any circumstances. Please consider the instructions of the manufacturer for the applied reprocessing media. HEINE Optotechnik only approves the agents and procedures listed in this instruction. Hygienic reprocessing is to be carried out by persons with adequate hygienic expertise. The handle inserts, bottom inserts and rechargeable and dry cell batteries are not suitable for automated reprocessing, immersion disinfection or steam sterilization. HEINE rechargeable batteries and their bottom inserts are not suitable for reprocessing using a STERRAD procedure. The described reprocessing measures do not replace the specific rules applicable for your institution/ department. The described reprocessing procedures are represented alongside the corresponding material compatibilities. Reprocessing must be carried out in accordance with an approved processing procedure. HEINE Optotechnik GmbH &amp; Co. KG cannot guarantee the sterility and disinfection of these procedures. This has to be validated by the user e. g. Hospital or the manufacturers of the reprocessing equipment.</p>
	<p>Before using it again, ensure that the handle is completely dry after reprocessing. Hold the handle/insert with the contact pointing downwards during wiping to prevent liquid entry. Liquid should not enter the insert during reprocessing because this could damage the device. In order to avoid recontamination of the processed parts during reassembly, the batteries should remain within the Laryngoscope handle insert during reprocessing of the STANDARD handle. After cleaning, the handle must be rinsed free of residue in order to avoid reactions with subsequent treatment stages/ damage to the materials. For important details regarding the processing procedures, please refer to the FAQs for Hygienic Reprocessing on our Website.</p>
<p>Limitations on reprocessing</p>	<p>Hygienic reprocessing only has a minor influence on the product life as this is determined mainly by wear and tear during use. Periodically check the integrity of the device and that the illumination is sufficient!</p>



## Choice of the reprocessing procedure



The hygienic classification (Spaulding classification) of the laryngoscope handles, as well as the decision for one of the offered reprocessing procedures, is the responsibility of the user or the qualified person(s) responsible for reprocessing. Internal regulations of your hospital/ institution, national directives, recommendations, standards and laws need to be considered.

For highly infectious cases (previous or following patients) (e. g. in case of a proven existence of a dangerous infectious disease (symptomatic or asymptomatic), the reprocessing guidelines in this document are superseded by processes of your institution / practice-internal regulations, national directives, recommendations, standards and laws.

If you, the user or the qualified person responsible for reprocessing,

- have classified the handle as **“non-critical”** (Spaulding classification)
  - i.e. the handle **contacted only intact skin and did not penetrate it** or it did not directly contact the patient
  - and is **not visibly contaminated with microorganisms and organic soil (e. g. blood, body fluids)**

then intermediate level wipe disinfection can be performed (**See Chapter A**).

Otherwise, high-level disinfection (i.e. manual cleaning with immersion-disinfection or automated cleaning and disinfection) and/or sterilization shall be performed (**See Chapter B-G**).

The laryngoscope insert and the bottom insert, need to be reprocessed as shown in **Chapter A**.

**Choose one of the following reprocessing methods:**

		Cleaning and disinfection			
		Intermediate-level wipe disinfection	Automated cleaning and disinfection	Manual cleaning (brushing)	High-level manual disinfection (immersion)
Sterilization	No Sterilization	Chapter A	Chapter B*	Chapter C*	
	Low Temperature STERRAD® / VHP® (Steris)	/	Chapter D	Chapter E	/
	Steam		Chapter F*	Chapter G*	

\*Validated



## Chapter A: Intermediate-level wipes disinfection

**1. Containment and transportation**

Reprocess as soon as possible following use.

**2. Preparation**

Disassemble the blade from the handle and reprocess separately.

**3. Manual cleaning and disinfection**



Pay attention that all surfaces are completely moistened for the complete exposure time specified by the disinfectant manufacturer. If necessary, increase the number of wiping procedures and or the number of wipes. Avoid liquid entry in the Laryngoscope insert and the bottom insert of the laryngoscope handle.

*Equipment*

- Intermediate level disinfection wipes: alcohol and/or quaternary ammonium compounds (e. g. Super Sani-Cloth® by PDI®) having an EPA-registered claim for activity against *Mycobacterium tuberculosis* and Hepatitis B.

*Implementation*

- Using the disinfectant wipe, start from the top of the handle and wipe down 3 times while turning the handle. This procedure is to be repeated 3 times, each with a new disinfectant wipe.
- Pay particular attention to recesses, ridges, difficult to access areas of the snap-in mechanism, below the hinge and the bottom insert.
- For removing the disinfectant and drying afterwards, follow the instructions provided by the disinfectant manufacturer.

**4. Inspection and function testing**



- Check the handle for any visible contaminants or abrasions. Reprocess again if necessary. Dispose if the contaminants cannot be removed.
- Perform functional testing after reprocessing.

**5. Storage**

Store it in such a way that it is protected from recontamination, dust and moisture.

## Chapter B: Automated cleaning and disinfection

1. **Point of use**  
Gross contamination must be removed soon after use, e. g. with a disposable wet wipe or enzymatic pre-cleaner.
2. **Containment and transportation**  
Reprocess as soon as possible following use.
3. **Preparation**  
Disassemble the blade from the handle and reprocess separately.  
Disassemble the handle for reprocessing.  
Clean and disinfect the Laryngoscope handle insert and bottom insert as described in Chapter A.
4. **Cleaning and disinfection of the handle shell**  
 If it is required in your institution or your country, you can perform manual cleaning of the handle shell by brushing before automated cleaning and disinfection.
- 4.1 **Automated cleaning and disinfection of the handle shell**  
*Equipment*
  - Washer/disinfector that conforms to the requirements of ISO 15883 or has a validated procedure corresponding to ISO 15883.
  - Cleaning agent: enzymatic or neutral to mildly alkaline (e. g. CIDEZYME® by ASP®).
  - Neutralizing agent if specified by the cleaning agent manufacturer.*Implementation*
  - The instructions from the manufacturer of the cleaning agents and the washer/disinfector must be followed.
  - Chose a suitable cleaning agent and cleaning program (according to ISO 15883).
  - Recommendation: A program with disinfection lasting at least 5 min. at 93 °C or an alternative, comparable program.
5. **Inspection and function testing**  

  - Check the handle for any visible contaminants or abrasions. Reprocess again if necessary. Dispose if the contaminants cannot be removed.
  - Perform functional testing after reprocessing.
6. **Reassembly**  
Insert the Laryngoscope insert and bottom insert into the handle shell and close it.
7. **Storage**  
Store it in such a way that it is protected from recontamination, dust and moisture.

## Chapter C: Manual cleaning (brushing) and high-level manual disinfection (immersion)

**1. Point of use**

Gross contamination must be removed soon after use, e. g. with a disposable wet wipe or enzymatic pre-cleaner.

**2. Containment and transportation**

Reprocess as soon as possible following use.

**3. Preparation**

Disassemble the blade from the handle and reprocess separately.

Disassemble the handle for reprocessing.

Clean and disinfect the Laryngoscope handle insert and bottom insert as described in Chapter A.

**4. Manual cleaning of the handle shell by brushing**

*Equipment*

- Cleaning agent: enzymatic or neutral to mildly alkaline (e. g. CIDEZYME® by ASP®).
- Warm (30 - 40 °C) demineralized water, Soft plastic brushes.

*Implementation*

- Soak the handle shell for 1 min. submerged in the cleaning solution (30-40 °C).
- Clean all surfaces of the handle shell by brushing (submerged in the cleaning solution).
- Pay particular attention to recesses, ridges, difficult to access areas of the snap-in mechanism, below the hinge and the inner surfaces of the handle shell.
- For removing the cleaning agent and drying afterwards, follow the instructions provided by the manufacturer of the cleaning agent.

**5. Manual immersion disinfection of the handle shell**

*Equipment*

- High level disinfectant for immersion disinfection (compatible with cleaning agent):  
Quarternary ammonium compounds (e. g. neodisher® Septo MED)  
or agent ortho-phthalaldehyde (e. g. Cidex®OPA)

*Implementation*

- Immerse the handle shell in the disinfectant solution as specified by the manufacturer of the disinfectant.
- Pay particular attention to maintain the specified concentrations, temperatures and the contact times.
- For removing the disinfectant and drying afterwards, follow the instructions provided by the manufacturer of the disinfectant.

**6. Inspection and function testing**



- Check the handle for any visible contaminants or abrasions. Reprocess again if necessary. Dispose if the contaminants cannot be removed.
- Perform functional testing after reprocessing.

**7. Reassembly**

Insert the Laryngoscope insert and bottom insert into the handle shell and close it.

**8. Storage**

Store it in such a way that it is protected from recontamination, dust and moisture.

## Chapter D: Automated cleaning, disinfection and low temperature sterilization STERRAD® / VHP® (Steris)

### 1. Point of use

Gross contamination must be removed soon after use, e. g. with a disposable wet wipe or enzymatic pre-cleaner.

### 2. Containment and transportation

Reprocess as soon as possible following use.

### 3. Preparation

Disassemble the blade from the handle and reprocess separately.

Disassemble the handle for reprocessing.

Clean and disinfect the Laryngoscope handle insert and bottom insert as described in Chapter A.

### 4. Cleaning and disinfection of the handle shell



If it is required in your institution or your country, you can perform manual cleaning of the handle shell by brushing before automated cleaning and disinfection.

#### 4.1 Automated cleaning and disinfection of the handle shell

##### Equipment

- Washer/disinfector that conforms to the requirements of ISO 15883 or has a validated procedure corresponding to ISO 15883.
- Cleaning agent: enzymatic or neutral to mildly alkaline (e. g. CIDEZYME® by ASP®).
- Neutralizing agent if specified by the cleaning agent manufacturer.

##### Implementation

- The instructions from the manufacturer of the cleaning agents and the washer/disinfector must be followed.
- Chose a suitable cleaning agent and cleaning program (according to ISO 15883).
- Recommendation: A program with disinfection lasting at least 5 min. at 93 °C or an alternative, comparable program.

### 5. Reassembly



The (XHL) handle can be reassembled before packaging for hydrogen peroxide low-temperature sterilization: Insert the Laryngoscope insert and bottom insert into the handle shell and close it. (with the exception of HEINE rechargeable batteries and their bottom inserts)

### 6. Inspection and function testing



- Check the handle for any visible contaminants or abrasions. Reprocess again if necessary. Dispose if the contaminants cannot be removed.
- Perform functional testing after reprocessing.

### 7. Packaging of the handle for sterilization

Pack the items individually in single or double standardized sterilization pouches suitable for the selected sterilization process.

### 8. Sterilization

#### 8.1 STERRAD® sterilization of the handle

##### Equipment

- STERRAD® NX®, 100NX® or 100S® Sterilizer

##### Implementation

Perform the STERRAD® NX® Standard or Advanced cycle.

#### 8.2 VHP® (Steris) sterilization of the handle

##### Equipment

- V-PRO® 60 Sterilizer, V-PRO® maX Sterilizer
- VAPROX® HC Sterilant

##### Implementation

Perform the V-PRO® 60 or V-PRO® maX Sterilizer's Lumen Cycle.

### 9. Storage

Store it in such a way that it is protected from recontamination, dust and moisture.

## Chapter E: Manual cleaning (brushing), Low temperature Sterilization STERRAD® / VHP® (Steris)

### 1. Point of use

Gross contamination must be removed soon after use, e. g. with a disposable wet wipe or enzymatic pre-cleaner.

### 2. Containment and transportation

Reprocess as soon as possible following use.

### 3. Preparation

Disassemble the blade from the handle and reprocess separately.

Disassemble the handle for reprocessing.

Clean and disinfect the Laryngoscope handle insert and bottom insert as described in Chapter A.

### 4. Manual cleaning of the handle shell by brushing

#### Equipment

- Cleaning agent: enzymatic or neutral to mildly alkaline (e. g. CIDEZYME® by ASP®).
- Warm (30 - 40 °C) demineralized water, Soft plastic brushes.

#### Implementation

- Soak the handle shell for 1 min. submerged in the cleaning solution (30-40 °C).
- Clean all surfaces of the handle shell by brushing (submerged in the cleaning solution).
- Pay particular attention to recesses, ridges, difficult to access areas of the snap-in mechanism, below the hinge and the inner surfaces of the handle shell.
- For removing the cleaning agent and drying afterwards, follow the instructions provided by the manufacturer of the cleaning agent.

### 5. Reassembly



The (XHL) handle can be reassembled before packaging for hydrogen peroxide low-temperature sterilization:

Insert the Laryngoscope insert and bottom insert into the handle shell and close it.

(with the exception of HEINE rechargeable batteries and their bottom inserts)

### 6. Inspection and function testing



- Check the handle for any visible contaminants or abrasions. Reprocess again if necessary. Dispose if the contaminants cannot be removed.
- Perform functional testing after reprocessing.

### 7. Packaging of the handle for sterilization

Pack the items individually in single or double standardized sterilization pouches suitable for the selected sterilization process.

### 8. Sterilization

#### 8.1 STERRAD sterilization of the handle

##### Equipment

- STERRAD® NX®, 100NX® or 100S® Sterilizer

##### Implementation

Perform the STERRAD® NX® Standard or Advanced cycle.

#### 8.2 VHP® (Steris) sterilization of the handle

##### Equipment

- V-PRO® 60 Sterilizer, V-PRO® maX Sterilizer
- VAPROX® HC Sterilant

##### Implementation

Perform the V-PRO® 60 or V-PRO® maX Sterilizer's Lumen Cycle.

### 9. Storage

Store it in such a way that it is protected from recontamination, dust and moisture.

## Chapter F: Automated cleaning and disinfection, steam sterilization

### 1. Point of use

Gross contamination must be removed soon after use, e. g. with a disposable wet wipe or enzymatic pre-cleaner.

### 2. Containment and transportation

Reprocess as soon as possible following use.

### 3. Preparation

Disassemble the blade from the handle and reprocess separately.

Disassemble the handle for reprocessing.

Clean and disinfect the Laryngoscope handle insert and bottom insert as described in Chapter A.

### 4. Cleaning and disinfection of the handle shell



If it is required in your institution or your country, you can perform manual cleaning of the handle shell by brushing before automated cleaning and disinfection.

#### 4.1 Automated cleaning and disinfection of the handle shell

##### Equipment

- Washer/disinfector that conforms to the requirements of ISO 15883 or has a validated procedure corresponding to ISO 15883.
- Cleaning agent: enzymatic or neutral to mildly alkaline (e. g. CIDEZYME® by ASP®).
- Neutralizing agent if specified by the cleaning agent manufacturer.

##### Implementation

- The instructions from the manufacturer of the cleaning agents and the washer/disinfector must be followed.
- Chose a suitable cleaning agent and cleaning program (according to ISO 15883).
- Recommendation: A program with disinfection lasting at least 5 min. at 93 °C or an alternative, comparable program.

### 5. Inspection and function testing



- Check the handle for any visible contaminants or abrasions. Reprocess again if necessary. Dispose if the contaminants cannot be removed.
- Perform functional testing after reprocessing.

### 6. Packaging of the handle shell for sterilization



Only the handle shell can be steam sterilized.

Pack the items individually in single or double standardized sterilization pouches suitable for the selected sterilization process.

### 7. Steam sterilization of the handle shell

##### Equipment

Steam sterilizer (Class B according to DIN EN 13060)

##### Implementation

Use one of the following programs (ISO 17665):

Fractionated vacuum procedure (at least 3 pre-vacuum cycles) and Gravitation procedure:

- Sterilization temperature: at least 132 °C (max. 134 °C)
- Exposure time/holding time: at least 3 min.
- Drying time: at least 20 min.
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### 8. Storage

Store it in such a way that it is protected from recontamination, dust and moisture.

### 9. Reassembly

Insert the Laryngoscope insert and bottom insert into the handle shell and close it.

## Chapter G: Manual cleaning (brushing) and steam sterilization

### 1. Point of use

Gross contamination must be removed soon after use, e. g. with a disposable wet wipe or enzymatic pre-cleaner.

### 2. Containment and transportation

Reprocess as soon as possible following use.

### 3. Preparation

Disassemble the blade from the handle and reprocess separately.

Disassemble the handle for reprocessing.

Clean and disinfect the Laryngoscope handle insert and bottom insert as described in Chapter A.

### 4. Manual cleaning of the handle shell by brushing

#### Equipment

- Cleaning agent: enzymatic or neutral to mildly alkaline (e. g. CIDEZYME® by ASP®).
- Warm (30 - 40 °C) demineralized water, Soft plastic brushes.

#### Implementation

- Soak the handle shell for 1 min. submerged in the cleaning solution (30-40 °C).
- Clean all surfaces of the handle shell by brushing (submerged in the cleaning solution).
- Pay particular attention to recesses, ridges, difficult to access areas of the snap-in mechanism, below the hinge and the inner surfaces of the handle shell.
- For removing the cleaning agent and drying afterwards, follow the instructions provided by the manufacturer of the cleaning agent. Pay particular attention to remove residues from recesses and ridges.

### 5. Inspection and function testing



- Check the handle for any visible contaminants or abrasions. Reprocess again if necessary. Dispose if the contaminants cannot be removed.
- Perform functional testing after reprocessing.

### 6. Packaging of the handle shell for sterilization



Only the handle shell can be steam sterilized.

Pack the items individually in single or double standardized sterilization pouches suitable for the selected sterilization process.

### 7. Steam sterilization of the handle shell

#### Equipment

Steam sterilizer (Class B according to DIN EN 13060)

#### Implementation

Use one of the following programs (ISO 17665):

Fractionated vacuum procedure (at least 3 pre-vacuum cycles) and Gravitation procedure:

- Sterilization temperature: at least 132 °C (max. 134 °C)
- Exposure time/holding time: at least 3 min.
- Drying time: at least 20 min.

### 8. Storage

Store it in such a way that it is protected from recontamination, dust and moisture.

### 9. Reassembly

Insert the Laryngoscope insert and bottom insert into the handle shell and close it.