

## Small Animal Laryngoscope - Model LS-2 Instructions for Use



Penn-Century's Small Animal Laryngoscope is designed to facilitate visualization of the epiglottis for tracheal intubation and use of Penn-Century's MicroSprayer® Aerosolizers and Dry Powder Insufflators™. Each laryngoscope comes with a custom-made small, tapered stainless steel blade for moving aside the tongue of the anesthetized animal. Blades are available in standard sizes for Mouse, Rat and Guinea Pig, and can be ordered to size for specific requirements. The Model LS-2 comes with a fiber-optic LED light source offering clear, bright illumination, and a new, easy-grip handle in a curved ergonomic shape that rests securely and comfortably in the palm of the hand. The handle is coated with a non-slip Santoprene™ coating - a thermoplastic elastomer made of EPDM rubber and polypropylene. The Model LS-2 operates with a 3 volt lithium battery provided. Both the handle and detachable blade assembly are sterilizable and autoclavable, *according to manufacturer instructions provided.*

### Features

- Ergonomic handle and a wide, sturdy base, meets Global ISO Green Standards
- Lightweight handle with a durable grip designed to fit the clinician's hand
- Bright LED light with a covered light pipe with custom-made blade for use in small animals
- Long-lasting LED light provides consistent uses for approximately 50,000 hours.
- Efficient technology extends battery life beyond that of a standard incandescent bulb light source.

## Product Components

Penn-Century Small Animal Laryngoscope - Model LS-2 is based on pediatric laryngoscope components that are modified extensively for use in small animals. The Laryngoscope consists of:

1. A silicon-coated **handle** that contains a LED light source and 3-volt lithium battery (included)
2. A detachable **blade assembly** with a stainless steel fiber-optic bundle, housed inside a light pipe
3. A **metal blade tip** attached to the end of the fiber-optic light pipe. The blade tip is hand-made and is sized for use with a specific animal. It is designed to push aside the animal's tongue

***NOTE: When using the device, or connecting or disconnecting the blade assembly, do not grasp or push on the fiber-optic light pipe or metal blade tip, or use either for leverage. You may bend or damage them.***

## Assembly and Use of the Small Animal Laryngoscope



Insert blade green "hooks" at bottom of blade assembly into metal bar at top of handle as shown. Push down on rear of blade assembly to click it into place and turn on light.

### 1. To attach the blade assembly to the handle:

- Locate the two green hook-like prongs at the bottom of the blade assembly.
- Slide these "hooks" under the metal bar on the top, front of the handle as shown in photo above.
- Firmly push down on the back of the green base to lock it in place. (Note that there is a metal sphere on each side of the blade assembly that will fit into two spherical cavities at the top of the handle to hold it securely.) Once the blade assembly snaps into place, the light will come on.



The blade tip of the Model LS-2 is hand-made and is sized for use with a specific animal. Shown left are two examples of blade assemblies with blade tips for Mouse (LS-BA-M) above, and Guinea Pig (LS-BA-GP) below.

*Additional Blade Assemblies are available for purchase for use with different animals and may be attached to either Penn-Century Small Animal Laryngoscope Model LS-1 (discontinued) or Model LS-2 (current model.) (Note: Will not fit any other laryngoscope handle.)*

2. **Use in the animal:** It is not necessary to insert the entire blade tip into the mouth of the animal. Insert ~~only~~ the very tip of the blade only in the animal's mouth. The tip is intended only to push aside the animal's tongue. Do not forcefully bend or manipulate the blade tip as this may cause it to break. Note that the blade is sharp and should be handled with care.
3. **To turn off the light and save battery power,** detach the blade assembly from the handle when not in use. With your thumb, push up firmly on the rear of the blade assembly, or grasp the square green base and push it up from the rear.
4. **Care, cleaning and disinfecting.** Please note that the Penn-Century Small Animal Laryngoscope – Model LS-2 is made from modified components from two different manufacturers. Detailed instructions on the materials that may or may not be safely used to clean and disinfect the blade assembly and handle are enclosed with the device. **PLEASE REVIEW EACH OF THEM CAREFULLY PRIOR TO USE.**
  - **For care and cleaning of the handle, refer to the Greenlight II instructions below.**
  - **For care and cleaning of the blade assembly, refer to the Welsh Allyn instructions below.**
5. **Do not use bleach on any part of the device. Do not soak or sterilize the Light/Battery Cartridge enclosed inside the handle. Follow instructions for opening and removing the battery cartridge prior to cleaning the handle.** Both portions of the device are autoclavable and can be used with disinfectant.
6. **Always store your handle and blade assembly** in the packaging that was provided when shipped.
7. **Replacing the battery:** The Small Animal Laryngoscope Model LS-2 operates with a 3-volt CR-123A lithium battery that is housed inside the handle. When the battery needs replacement, you may open the bottom of the handle with your fingers. Place your fingers in the curved bottom of the handle and twist it in a counter-clockwise direction. Slide out the green plastic cartridge inside the handle that contains the battery. Remove the old battery and insert the new one according to the + and – symbols on the side of the cartridge. Slide the cartridge and spring back into the handle. Screw the handle bottom in place in a clockwise direction.

**WARNING: This device is for laboratory use only; not for human in vivo use. Do not point at sensitive targets.**

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