Instruction Manual

ET510

ENGLISH

- **2.4" COLOR LCD**
- **BRIGHT LED WORKLIGHT**
- **IP67 GOOSENECK CAMERA**
- **SCREEN MIRROR**
- **AUTO POWER OFF**

WARRANTY

CLEANING

Turn instrument off and disconnect gooseneck camera. Clean the instrument and camera by using a damp cloth. Do not use abrasive cleaners or solvents.

STORAGE

Do not expose to high temperatures or humidity. After a period of storage in extreme conditions exceeding the limits mentioned in the Specifications section, allow the instrument to return to normal operating conditions before using it.
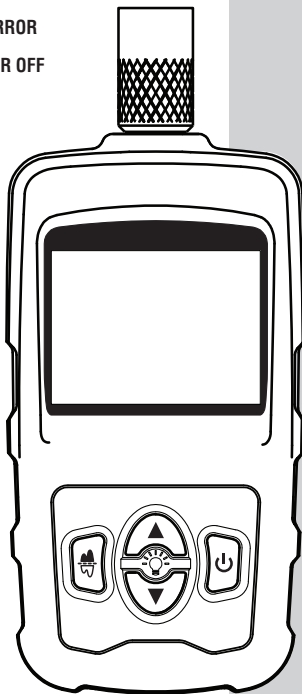
DISPOSAL / RECYCLE

Caution: This symbol indicates that equipment and its accessories shall be subject to a separate collection and correct disposal.

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SETUP

CHARGING

The rechargable lithium-ion battery should be charged before operating the borescope for the first time. The battery can be charged via a standard 120V wall outlet or through a computer USB port. An exhausted battery will take up to 5 hours to charge. It can be left charging overnight without needing to be removed from power. The expected lifetime of the included battery is 500 charging cycles.

WALL OUTLET: Locate the power wall adapter (f) and the USB cable (g). Remove the soft input cover and plug the cable into the borescope's USB port (7). Plug the other end of the cable into the power adapter, and plug the wall adapter into a standard 120V outlet.

COMPUTER: Locate the USB cable (g). Remove the soft input cover and plug the cable into the borescope's USB port (7). Plug the rectangular end into your computer's USB port.
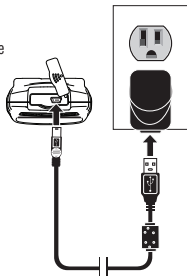
ATTACHING THE GOOSENECK CAMERA

Locate the gooseneck camera (10). Plug it into the camera input socket of the borescope. Rotate the adjustment piece clockwise to lock it into place. The white arrow on the camera head should be pointing up.

POWERING ON/OFF

To power the unit on and off, press and release the power button (2). The borescope will be operational in a few moments.

LIVE VIDEO MODE

On startup, the borescope will enter the live output mode. The screen will show the live output of the gooseneck camera along with the estimated battery life remaining and the auto power off symbol if it is active.

LED BRIGHTNESS

The borescope gooseneck camera head has several LEDs used to light your work area. You can control the brightness using the up and down arrow buttons (3 & 4). The LED brightness ranges from off (LED:0) to full (LED:100). The default setting is 25.

MIRRORING CAMERA OUTPUT

Press the mirror button (5) to mirror the camera output vertically over the x-axis. This feature is useful when reading text or using the mirror attachment with the borescope.

AUTO POWER OFF

The borescope can power itself off after 5 or 10 minutes of non-use, or this feature can be disabled. Press and hold the "mirror" button 🔄 for three seconds until "APO" appears on the screen. Press repeatedly to toggle between off, 5 min, and 10 min. The "APO" prompt will disappear after 5 seconds. A clock icon will appear in the top left corner of the screen when auto power off is active.

BATTERY MAINTENANCE

Please contact Klein Tools customer service at 1-800-553-4676 to make arrangements for battery replacement.
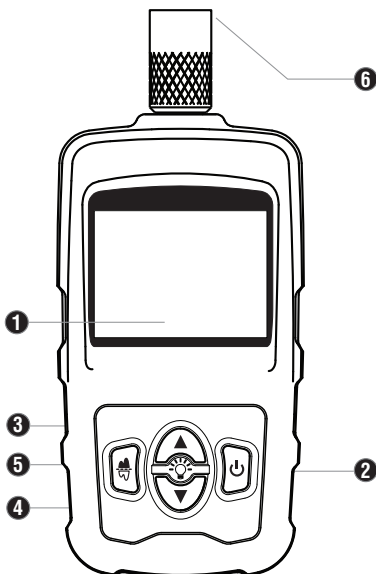
1. **LCD Screen:** 2.4" TFT LCD screen.

2. **Power Button:** Press and release to turn the instrument on and off.

3. **Worklight Up Button:** Increases the brightness of the camera-mounted LEDs up to 100. Press and hold to change quickly.

4. **Worklight Down Button:** Decreases the brightness of the camera-mounted LEDs down to 0 (off). Press and hold to change quickly.

5. **Mirror/Auto Power Off Button:** Short press mirrors the display over the x-axis. Long press enables auto power off mode. Short presses in auto power off mode change auto power off time (off, 5 minutes, 10 minutes).

6. **Camera Input Socket:** Screw into place once the camera output plug is inserted.

7. **USB Charging Port:** Attach the borescope to a computer via USB to charge battery. Attach to included 5V adapter to charge via a standard power outlet.

8. **Camera Head:** Contains the CMOS sensor and LEDs. The arrow on top indicates the camera is right-side up.

9. **Gooseneck:** Rated to IP67 to withstand all ingress of dust and submersion in water up to 1 meter. Caution: bending the gooseneck to 90 degrees or greater can permanently damage it.

10. **Camera Output:** Attaches to borescope body when the notch is oriented correctly.
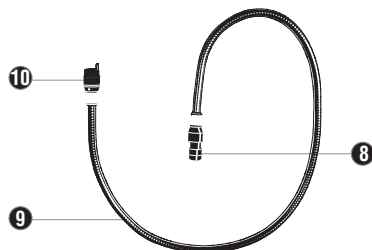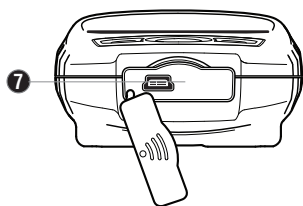
ET510 Borescope
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GENERAL SPECIFICATIONS

The Klein Tools ET510 Borescope is an extendable video camera used to view inaccessible areas. It features a durable camera snake with an adjustable intensity LED worklight, a 2.4" LCD screen, auto power off, and screen mirroring.

- **Dimensions:** 6.53" x 2.84" x 1.55" (16.59 x 7.22 x 3.95 cm)
- **Weight (Main Unit):** 8.08 oz. (229.3 grams)
- **Weight (Gooseneck Camera):** 1.73 oz. (49.0 grams)
- **Operating Altitude:** 2000 meters
- **Operating Temperature:** 0°C /32°F to 50°C /122°F
- **Storage Temperature:** -20°C/-4°F to 60°C /140°F
- **Relative Humidity:** 85%
- **Environmental Protection (Gooseneck Camera):** IP67 (dust proof, water immersible up to 1 meter for up to 30 minutes)
- **Certifications:** CE, WEEE
- **Screen Resolution:** 480 x 234px
- **Color Depth:** 24 bits
- **Fixed Focus Distance:** 1.97"~5.90" (5~15cm)
- **Camera Diameter:** 0.67" (17mm)
- **Gooseneck Length:** 3.28' (1m)
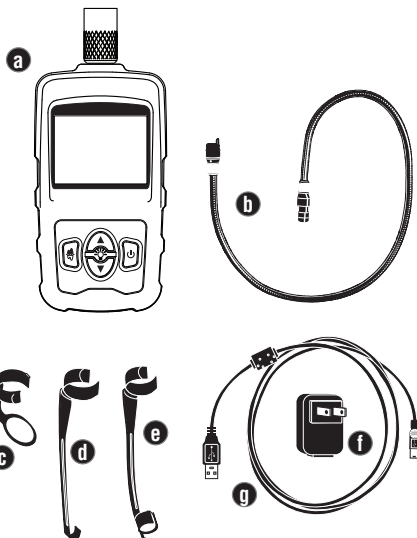- **Battery Life (Typical):** 3 hours continuous operation (LEDs off)

⚠ WARNINGS

To ensure safe operation and service of the Video Borescope, follow these instructions. Failure to observe these warnings can result in severe injury or death.

- The Borescope and gooseneck camera are NOT insulated. Avoid probing areas where energized conductive elements may be present. Shut off power to the nearby work areas before starting work.
- Avoid probing areas where chemicals may be present.
- Do not probe moving machinery that could catch the Borescope and cause harm to the operator and the Borescope.
- The Borescope is not intended for use on people or animals.
- Do not use the Borescope near sources of heat.
- Keep steady footing at all times, following ladder safety procedures when necessary.
- Do not use if the Borescope casing is cracked or broken in any way.

⚠	WARNING SYMBOLS:
👓	Always wear approved eye protection.
✋	Do NOT use on energized circuits.
🔧	Do NOT probe moving machinery.

PACKAGE CONTENTS

- **a.** Main Unit
- **b.** Gooseneck Camera 17mm
- **c.** Mirror Camera Attachment
- **d.** Hook Camera Attachment
- **e.** Magnet Camera Attachment
- **f.** USB Power Adapter/Charger
- **g.** USB Data/Charger Cable