User manual

LEADER Hasty

EN Read this manual carefully, before the first use

Product references

D11.04.349	**LEADER Hasty - 2.4m probe & 1 wireless sensor**
D11.04.351	**LEADER Hasty - 2.4m probe & 2 wireless sensors**
D11.04.359	**LEADER Hasty - 2.4m probe & 3 wireless sensors**
D11.04.350	**LEADER Hasty - 4m probe & 1 wireless sensor**
D11.04.352	**LEADER Hasty - 4m probe & 2 wireless sensors**
D11.04.360	**LEADER Hasty - 4m probe & 3 wireless sensors**

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1 INTRODUCTION

1.1 LEADER Hasty presentation

The **LEADER Hasty** is for use in the rescue of buried victims and combines 2 functions in a single appliance:

- The wireless seismic sensor detection mode (from 1 to 3 sensors depending on the selected version) to listen for life signs from buried victims and to locate them under the rubble . This equipment is fitted with adjustable filters that are used to reduce parasite noise such as pneumatic drills, the passage of trucks, etc.
- The search camera mode with an audio sensor to see and communicate with victims. This equipment has been designed to accurately and visually locate victims in confined spaces, to dialogue with them and assess their need for assistance and rescue.

1.2 LEADER Hasty composition

- 1 watertight and shock proof transport case
- 1 control box with screen and keyboard with its straps (shoulder strap and hand strap).
- 1 2.4m telescopic boom fitted with a pivoting camera, lighting and a microphone and loud-speaker module.
- 1 camera head protection cap to be refitted after use.
- 1 boom support strap.
- 1 stereo anti-noise headset with microphone.
- 1, 2 or 3 wireless, high sensitivity seismic sensors.
- 3, 6 or 9 AAA batteries to power the wireless seismic sensors.
- 1, 2 or 3 magnetic plates (magnets) for the use of the sensors on metal structures.
- 1, 2 or 3 probes for use of the sensors on loose soil.
- 1 removable antenna to be fitted on the control box to enable wireless communications between the sensors and the control box.
- 1 rechargeable control box battery pack.
- 1 100/240V 50/60Hz charger block delivered with a set of international adapters.
- 1 backup battery pack for 10 AAA batteries (not included).
- 1 sun shield.
- 1 articulated arm used to fix the control box to the boom.
- 4 yellow caps to seal the boom tip for immersion.
- 1 micro SD card to record and view photos/videos.

Available options:

- 1 stereo noise reducing headset with microphone and suitable connectors.
- Extra battery pack.
- 1 90m reel of cable fitted with a pivoting camera, lighting and a microphone and loud speaker adaptable to the **LEADER Hasty** and LEADER Cam.
- 1 90m reel of cable fitted with a watertight camera and lighting adaptable on the **LEADER Hasty** and LEADER Cam.
- A 4m long telescopic boom.

• Read the instructions carefully before using the product.
• The device should not be dropped or suffer shocks.
• Do not disassemble the product as this will invalid the warranty.
Do not attempt to repair the product or replace parts (except when this manual provides specific instructions to do so). Refer all servicing to your distributor, or at Leader maintenance service.

1.3 General functions

FUNCTIONS	IN SEARCH CMERA MODE	IN SEIMSIC SEARCH MODE
Digital x 2 zoom	Yes	
Audio headset volume control	Yes	Yes
Microphone volume control	Yes	Yes
Push to Talk	Yes	Yes
Screen brightness control	Yes	Yes
Left and right handed user	Yes	Yes
Image rotation top (0°) bottom (180°)	Yes	Yes
Noise filter control (low and high pitch)		Yes
Wireless sensor charge level indication		Yes
Battery charge level indication	Yes	Yes
Separate control of each seismic sensor		Yes
Mono or Stereo listening mode (listen to selected sensors using 1 or both ears)		Yes
Visualisation markers to identify the strongest seismic peak		Yes
Picture taking	Yes	
Video recording (with no sound)	Yes	
Audio recording (recording of sounds on the communications boom)	Yes	
Photo and video gallery to view recordings	Yes	

1.4 Detailed technical specifications

Refer to product data sheet available on our website at **www.leader-group.eu**.

2 LEADER HASTY DESCRIPTION

2.1 Control box description

The polypropylene control box is composed of:

- A 7 inch TFT colour 16/9 high brightness screen.
- A keyboard for settings and scrolling through the different menus.
- A rechargeable battery pack.
- A removable aerial to communicate with the wireless seismic sensor(s).
- Connectors for the watertight connection of the camera, antenna and audio headset. Colour coding to assist in the rapid connection of each element to its corresponding connectors.
- A watertight cap to fit to the aerial connector when not used.
- A rubber band around the edge for better shock protection.
- 4 attachments to fix the carrying strap and the handle.

The control box:

- Has an ergonomic graphic interface including an intuitive menu with subtitles in English only.
- Is reversible for use by a right handed or left handed operator (function selectable from the menu).
- Is IP54, i.e. water and dust resistant.
- Has been tested to be resistant to 2 metre falls.
- Offers the possibility of using a second optional headset at the same time as the first, for use by an interpreter, a doctor or an instructor.
- Is supplied with a sun shield.

- To clean, use a dry and soft cloth.
- Never use solvents, or alcohols of any kind, to avoid of discoloration and / or distortion of the unit.
- Avoid blows or excessive pressure on the screen.

2.2 Connection description

For easier connection of the accessories:

- Each female connector on the control box is identified using a colour code and a symbol.
- Similarly, the cable for each accessory has a coloured ring around the male connector corresponding to the colour code on the control box connectors.

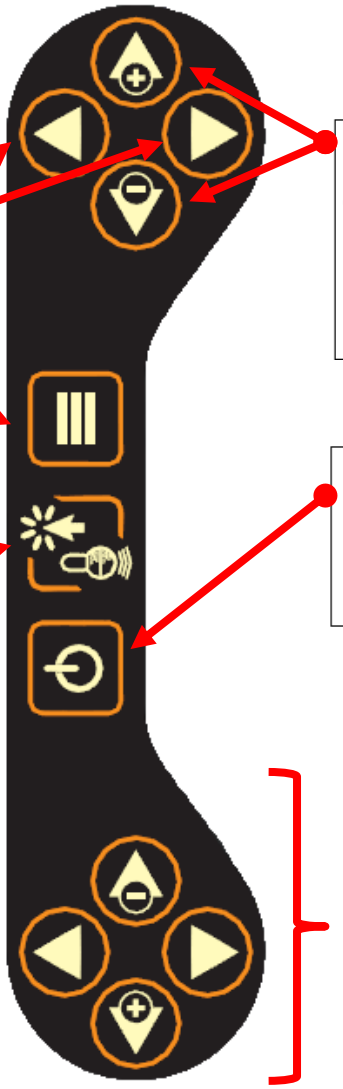
The audio / USB connector is used to connect either the audio headset or a specific USB stick supplied by **LEADER** to update the software when necessary. No other USB peripherals should be connected.

2.3 Keyboard description

The keyboard has photo luminescent keys for better visibility in the dark.

The keyboard is reversible for use by a right handed or left handed operator. To switch from one to the other, the corresponding function must be selected.

"Right hander mode" view:



Right / left keys:
- to control the direction of the pivoting camera head.
- to make settings/selections in the sub-menus.

Keys + and – :
- to control the brightness of the lighting on the camera head
- to scroll up and down in the menus
- to make settings in the submenus.

Menu key
Used to display and hide the available functions.

Triple use key:
- **Validation**: Used to select/validate the menu functions
- **Push-To-Talk**: In camera mode, pressing the key down continuously allows to talk to the victim
- **Photo/Video**: take a picture, start and stop video recording in the Picture/Video functions

ON/OFF Key
Used to power on the control box by pressing it once. To switch off, press for 2 seconds.

Duplicate keys
- The rescuer can use them depending on the position
- Used by an instructor during training to explain operation
-  Functional for a left hander when the **"right/left hand"** function is set to **"left hander".** The keys are all reversed, as well as the picture display and the menus on the screen

2.4 Description of the telescopic boom

The carbon fibre boom is lightweight and robust.

It is equipped with a head including a camera, LED lighting, and a microphone/speaker module.

The 47mm head diameter makes it possible to insert it into standard 51mm diameter core driller holes.

The sensitivity of the microphone makes it possible to hear whispers.

The camera head can be mechanically oriented 85° to the right and 85° to the left (170° total). The directional camera and head provide a 260° field of vision without any blind spots. The telescopic boom extends from 1.10 to 2.40 m (option: telescopic boom from 1.10 to 4 m) and it has a removable handle.

- **Camera head protection**

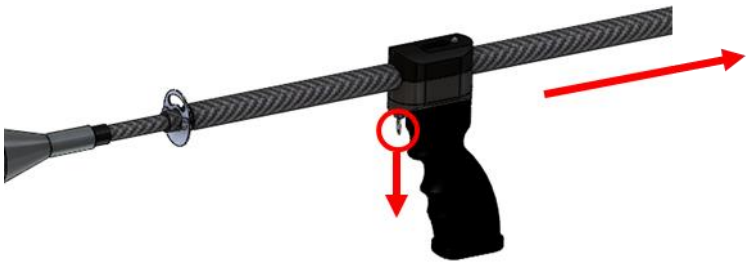
The camera head mounted on a flexible articulation is protected by a watertight plastic sleeve over its entire length and by a non-scratch sapphire lens on its face.

- **Control box fixture to the boom**

The supplied "articulated arm" is used to fix the control box to the boom. This accessory composed of a flexible metal part can be bent at will to point the screen to the required position.

- **Removable handle**

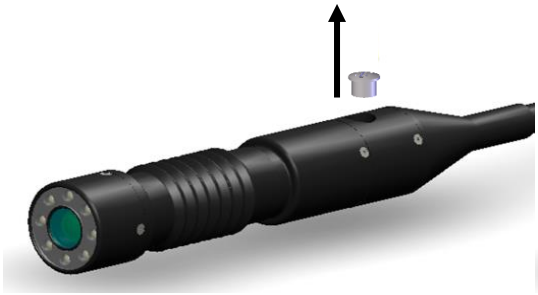
The boom handle is removable to be able to pass the entire boom length through a 51 mm diameter hole.
To remove the handle, pull the pin towards the bottom and slide the handle to the rear.



- **Camera head water tightness for immersion**

This system makes it possible to search under water to a maximum depth of 2m.

To make the camera head watertight, a cap needs to be fitted to the microphone/loud speaker. The metal microphone/loud speaker mesh must be unscrewed and replaced by the watertight cap.



2.5 Audio headset description

The **LEADER Hasty** has a noise reducing headset with a microphone. It is equipped with a neck band, an omnidirectional microphone, 2 300 ohm earpieces and a connection cable (length 2 m) with a specific watertight connector once connected to the control box.

The audio headset is used to:

- Communicate with the victim in search camera mode.
- To listen to the wireless sensors in seismic mode.

A second optional headset can be connected to the control box using a Y connector allowing two headsets to be connected to the same connector.

2.6 Description of the wireless seismic sensor

The **LEADER Hasty** has one, two or three wireless seismic sensors which are used to locate a buried victim. These **exceptionally sensitive** sensors are capable of detecting the slightest sounds made by victims.

The different search methods are not explained in this manual. Refer to the operational search instructions used in your field interventions.

In an open area these wireless sensors have a maximum range of 100 m.

In operation, depending on the configuration of the zone, these wireless sensors can be used up to about 30 m.

A wireless sensor has:

- A removable base to access the battery compartment (3 AAA batteries).
- An aerial.
- An **ON/OFF** button with LED.
- A strap to handle the sensor in the ruins or rubble.
- A number corresponding to its pairing number.

Magnetic plates (magnets)

Each wireless sensor is shipped with a magnetic plate that can be screwed directly onto its lower part. This plate can be used on the metal beams of collapsed buildings which are well known to conduct vibrations optimally.

Metal probes

Each sensor is also shipped with a probe that can be screwed directly onto its lower part. These probes are used on loose soil to increase vibration reception.

3 USING THE CONTROL BOX

3.1 Control box power supply

The **LEADER Hasty** is delivered with a lithium polymer battery pack which is inserted into the back of the control box.

The battery pack is recharged **SEPARATELY** from the control box.

Charging can be carried out at between 0°C and 45°C (maximum temperature) using the supplied charger.

During charging, a LED located on the charger provides the following indications:

- Green: battery charged or battery not connected to the charger.
- Red: battery charging.

During operations, if the battery pack is run down, the user can either use another battery pack (supplied as an option), or the backup battery pack as a replacement for the initial battery pack. The backup battery pack requires 10 AAA batteries (not provided).

The battery pack can **ONLY** be charged using the supplied charger block. It can be used with 100/240VAC - 50/60Hz.

The international adapters can be used to recharge the battery pack on all US, Australian, European, and UK power outlets.

Battery pack

Charger block

Mains adapters

Once the appliance is powered on, if the camera or at least one seismic sensor is turned on, an icon showing the battery pack charge level remains displayed on the top right of the screen.

5 icons to show the control box battery pack charge level

Icon displayed when the backup battery pack is being

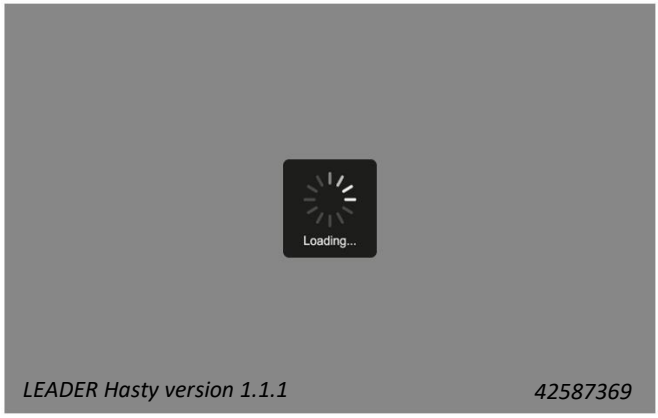
3.2 Powering on the control box

Powering on

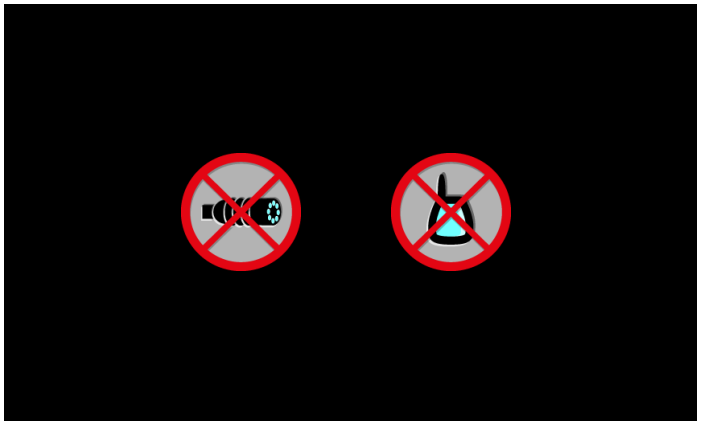
The device is powered on by pressing the **ON/OFF** key once.

On powering on, a first screen is displayed.

A loading screen quickly follows. On the bottom left of the screen it shows the version of the device software and on the bottom right the serial number.



If neither the boom nor the sensors are connected, the screen shows the following icons **"camera not connected"** and **"sensor not connected".** The device will remain on this screen for 5 minutes before powering off automatically if no action is detected.



If, on the other hand, either the camera or the sensor(s) are connected, then the screen is only displayed briefly until the control box detects the connection(s).

Turning off the control box

To turn off the control box, press the **ON/OFF** key for 2 seconds.

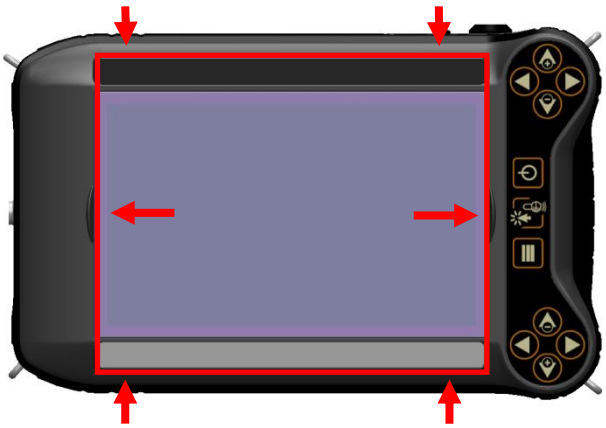
A message is displayed indicating that the battery should not be removed until the message disappears:

Please follow these instructions so that the software closes correct"***Please, DO NOT REMOVE the battery pack while this message is displayed***"ly and to guarantee it operates correctly the next time it is launched.

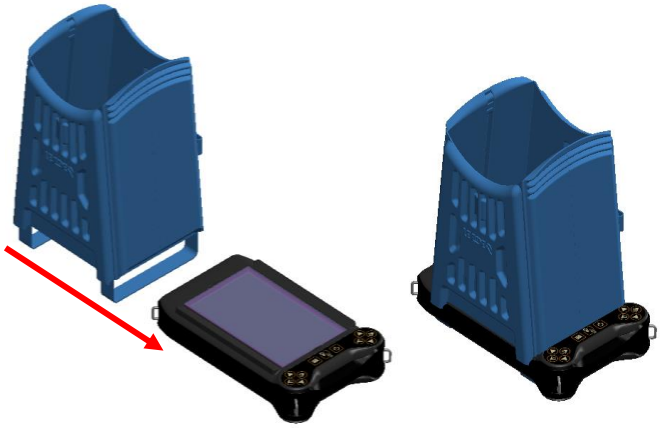
3.3 Using the sun shield

In bright light, the sun shield is used to place the screen in a dark area to be able to see it better.

To hold the sun shield on the control box it must be correctly positioned on the face on the forms designed to this effect. The red line shows the position.



The wide elastics are used to fast it quickly and easily.



It is stored flat for easier transport. An elastic on its side is used to keep it flat and fix it to the control box. By placing it on the screen face, it protects the screen when moving around when the search device is not in use.

It has small inner pockets to store an SD photo card for example.

4 SEISMIC SEARCH MODE

4.1 Using the seismic sensor

To power on the wireless sensor, the push button must be pressed for at least 1 second. When the sensor is powered on, the green push button LED lights:

- **Slow flashing:** no connection with the control box.
- **Fixed:** connection with the control box in progress.
- **Fast flashing:** connection with the control box established.
- **Very fast flashing:** pairing sequence in progress (see Pairing section).

To power off the sensor, the push button must be pressed for at least 1 second.

If the sensor does not connect with the control box, it powers off automatically after 20 seconds.

To connect several wireless sensors, it is important to use the following powering on sequence:

1. Power on the control box until the **LEADER Hasty** logo is displayed.
2. Press the sensor push button. When its LED flashes quickly the connection is complete and the corresponding sensor bar chart appears on the control box screen.
3. Repeat step 2 for the next sensor.

Important: Do not power on all the sensors at the same time, but one after the other. Wait for the powered on sensor to appear on the screen before powering on the next sensor.

4.2 Pairing the seismic sensor

To be recognised by a control box, the sensors must be paired to it. Initially the sensors are paired with the control box they are delivered with in the factory.

However, each sensor can be used on any **LEADER Hasty** or LEADER Search control box.

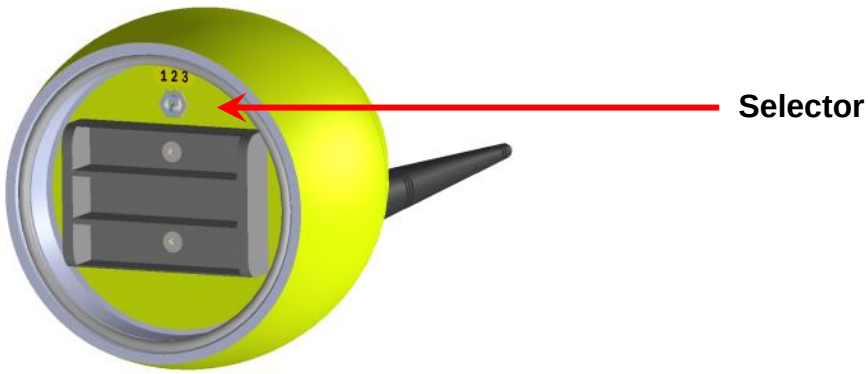
If you need to pair a sensor to another control box, follow the sequence described below:

1. Turn off the control box
2. With the sensor powered off, press the push button for 15 seconds and then release it. The green LED will flash very quickly and then go out At this stage the sensor is no longer paired to any control box
3. Turn on the sensor to be paired. The sensor's LED flashes very quickly again. If the LED on the sensor to be paired does not flash quickly, repeat step 2.
4. Turn on the control box. The sensor will then carry out the pairing sequence for a few seconds and then switch off automatically.
5. Switch the sensor back on. it is now recognised by the control box and its bar-chart format signal appears on the screen.

A selector in the sensor battery compartment can be used to select the sensor number **(n°1, n°2 or n°3).**

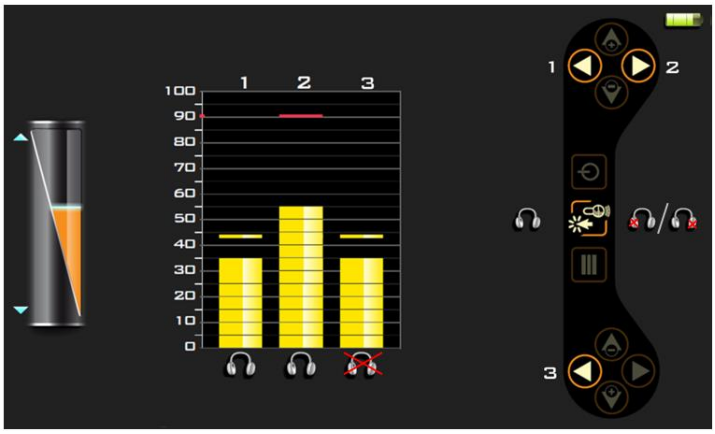
The sensor number is memorised by the sensor during the pairing sequence. To make the sensor memorise a new number, it should first be unpaired, the switch must be placed on the required sensor number, and then the pairing sequence carried out.

Once paired, the sensor keeps the number assigned to it, even if the selector is mistakenly positioned on another number.



4.3 Seismic search mode

The screen that is displayed when the seismic mode is activated:



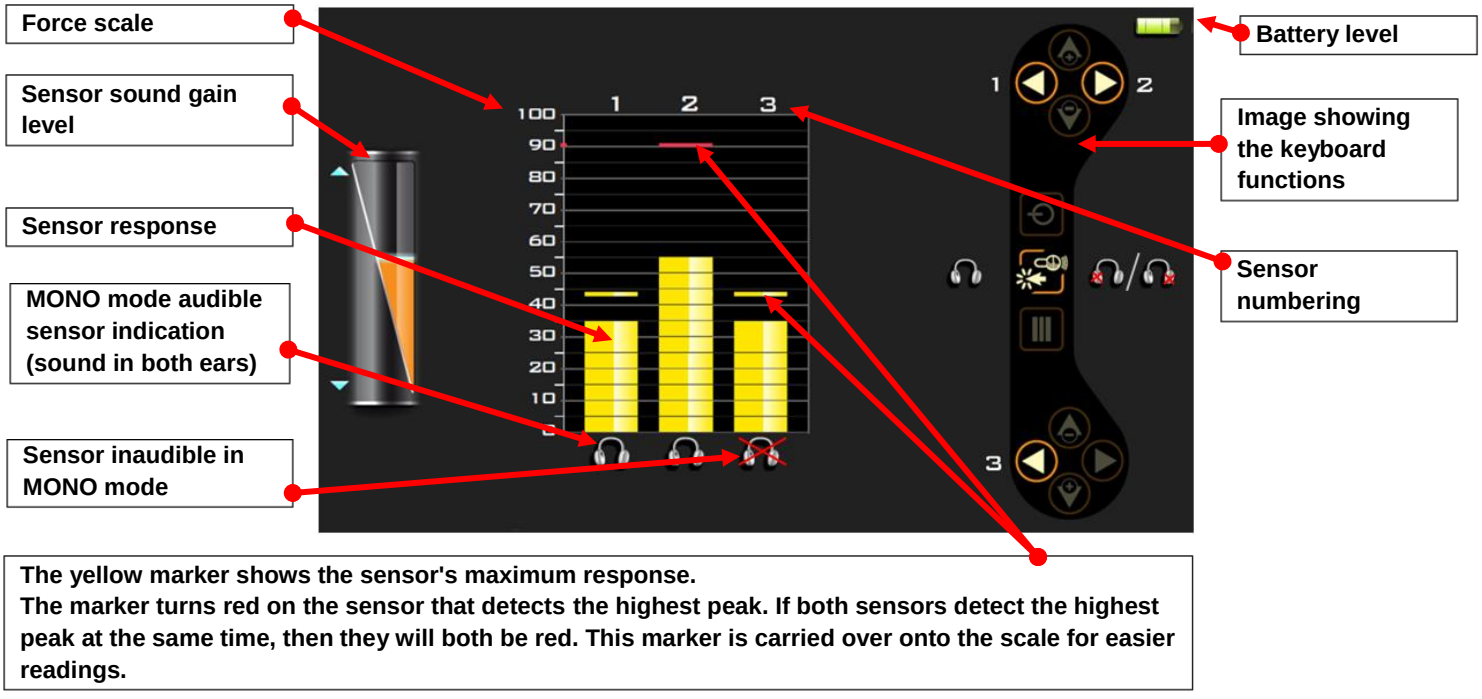
The "**seismic"** mode can be selected when one or more seismic sensors are connected. Here three sensors are connected.

This mode is active automatically if the boom is not connected to the control box.

If the boom is connected, there are 2 methods of switching to seismic mode:

- Press Menu, select the **"seismic"** icon and validate using the validation key.
  or
- remove the boom connector. The software then directly switches to seismic mode (caution: at least one sensor must be connected).

4.3.1 Seismic mode specificities



The yellow marker shows the sensor's maximum response.
The marker turns red on the sensor that detects the highest peak. If both sensors detect the highest peak at the same time, then they will both be red. This marker is carried over onto the scale for easier readings.

Viewing signals

Each sensor connected to the control box is shown on the screen as a bar-chart. The signal levels detected by the sensors are shown on the screen as:

- Yellow bar charts.
- A yellow marker showing the maximum level of signal detected by a sensor.
- The red marker shows the highest level of signal detected by all the sensors. This level is also carried over in red on the bar chart scale for easier reading. If several markers indicate the same maximum intensity, then they all turn red.

If there is no bigger signal, the yellow and red markers remain visible for 2 seconds.

Selection of sensors to listen to:

There are 2 listening modes:

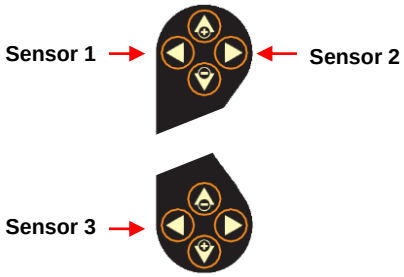
- **MONO** mode: the sensor or sensors are listened to using both ears.
  It is shown by this Headset icon: 

- **STEREO** mode: the sensors are listened to either using the right ear or the left ear.
  It is shown by one of these 2 Headset icons:  

By default the device is in **MONO** mode.
To switch from one mode to another, press the Validation icon: 

In MONO mode:

- the selection of a sensor to listen to or not is made using the ◄ and ► keys:
  - sensor 1 = key ◄ on the top keyboard
  - sensor 2 = key ► on the top keyboard
  - sensor 3 = key ◄ on the bottom keyboard



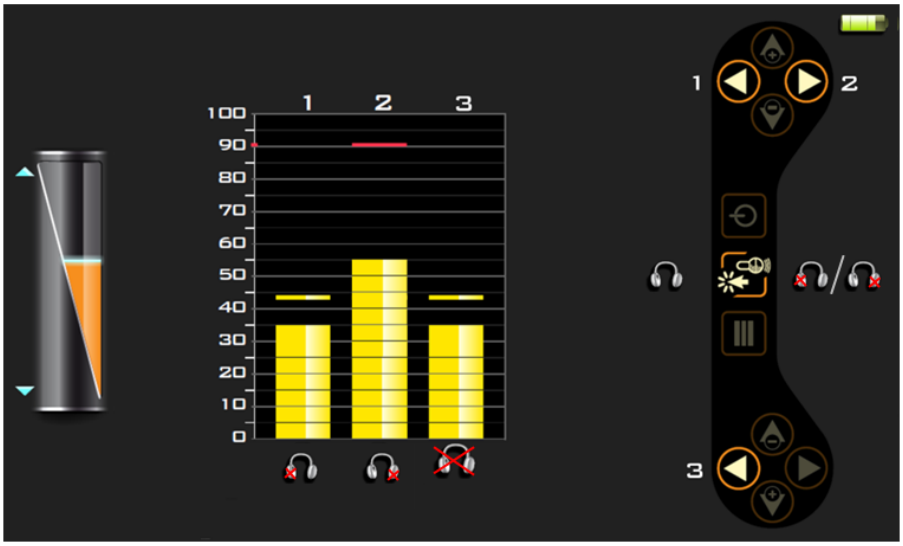
- A **"headset"** icon  under the bar chart = audible sensor.

- A **"headset with a red cross"** icon  under the bar chart = inaudible sensor.

In STEREO mode:

- Repeatedly pressing the ► key for sensor 1 or the ◄ key for sensor 2 (top keyboard) or the ◄ key for sensor 3 (bottom keyboard) makes it possible to listen using the left or right headset earpiece or to cut the sound in both ears.
- An icon showing the **"headset with a crossed out earpiece"**  or  under the bar chart = sensor audible in the left or right ear.
- A **"headset with a red cross"** icon  under the bar chart = inaudible sensor.

In the example below, sensor 1 can be heard in the right ear, sensor 2 in the left ear and sensor 3 is inaudible in **STEREO** mode.



Signal gain:
To refine the visual and sound perception of the signals detected by the sensors, the gain can be controlled using:

- The ▲ navigation key to increase it.
- The ▼ navigation key to decrease it.

This operation applies to all the connected sensors. By default the sensor sound gain is set to 50%.

4.3.2 Selection of seismic mode settings

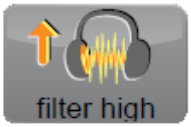
Access to the different settings functions uses the menu key.

Up to six icons can then appear. When a function is not active, the icon is greyed out.

The "▲" and "▼" navigation keys are used to select the required function. Pressing the validation key gives access to the menu.

Pressing the menu key again is used to hide the menu and display the main screen.

4.4 Menu: Description of the seismic mode functions



- The "**filter high"** function gives access to the low-pass filter settings used to remove high pitched sounds. The function is used to remove all frequencies above its setting threshold (Setting threshold: 600Hz to 3000Hz).

- The "**filter low**" function gives access to high-pass filter settings and is used to remove all bass noises. The function is used to remove all frequencies below its setting threshold (Setting threshold: 20 Hz to 300Hz).

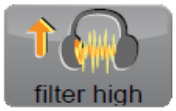
- The "**battery levels"** function gives access to the connected wireless sensor battery levels.

- The "**brightness"** function is used to set the screen brightness.

- The "**camera"** function gives access to the search camera menu if the boom is connected.

- The "**left/right hand"** function is used to allow the control box to be used by a left handed or right handed operator by reversing the image and the keyboard operation.

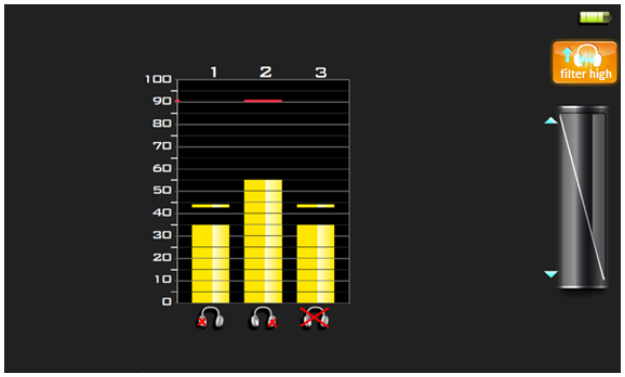
4.4.1 Filter control function



The **LEADER HASTY** is equipped with two filters that are used to remove surrounding noise, a **"low-filter"** and a **"high-filter".** The seismic sensors can detect vibrations from 20 to 3000Hz.

The filters are used to remove parasite noise that is inevitable during an intervention or caused by the weather.

By default the filters are not activated. The settings bar at the right of the screen is at the minimum. The "▲" and "▼" navigation keys are used to increase or reduce the selected filter's cut-off frequency.

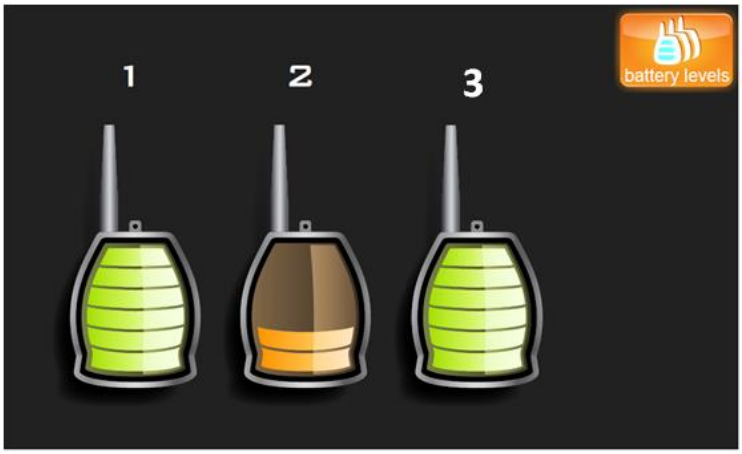


Filter use:

To eliminate parasite noise, increase the low filter cut-off frequency until the noise disappears from the headset. If the noise can still be heard, reset the **"low"** filter to zero and repeat the operation using the high filter. To exit filter settings, press the menu key.

4.4.2 Sensor battery level function

Once selected, the "battery level" battery function is used to view the **“battery level”** for each connected wireless sensor. A six level scale clearly shows sensor autonomy. To exit the battery menu, press the menu key.
Wireless sensor autonomy is about 8 hours and varies depending on the type of batteries used (3 AAA batteries). The screen below shows 3 connected sensors.



Wireless connectivity

Wireless devices are subject to environmental constraints which affect their use.
A wireless desk telephone, for example, can have connection/reception difficulties. However it is not less useful than a wired telephone!
Indeed, in some cases linked to the location itself, interferences can prevent the signal from being displayed on searching device for a few seconds. It returns in a reasonable period to continue searching.

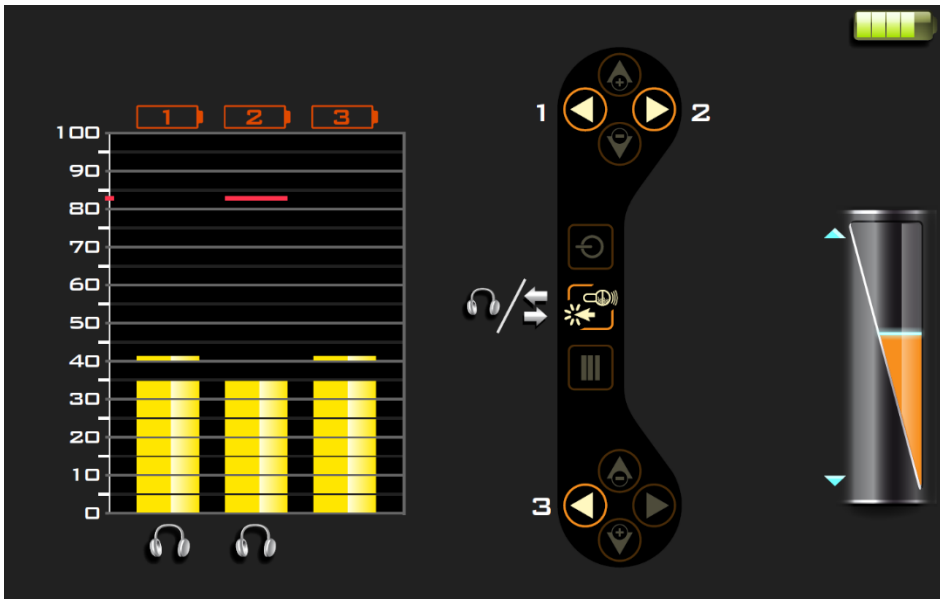
To make it right; Adopt the attitude of someone who is aware that the wireless equipment has certain usage constraints and apply the following advice to your victim search equipment:
- Place the sensors in view of the control box: Avoid placing them in holes.
- Position yourself up high with the control box.
- Leave as much free space as possible between the control box and the sensors: Nobody between the box and sensors; the human body creates a natural barrier; do not show your back to the sensors.
- Consider the weather: depending on humidity/electricity in the air/sun, wireless will work better or worse (eg: A radio can emit further in good weather).

Despite these constraints, wireless technology unquestionably has operational advantages which overcome them:
- Rapidity of movements in rubble (no trapped wires).
- Safety of sensor holder during moves (no imbalance due to trapped wire).
- Efficiency of the search operations (larger zone covered).
- Freedom of movement.
- 30m range on average, much broader than the length of wired sensors (8m in general).

Low battery display

A battery icon  displays above the corresponding graph bar when the batteries of a sensor become low (20% remaining power).
With a low battery level, it increases the risk of disconnections and reconnections. It is therefore recommended that you replace the batteries with new ones.

Here, the 3 sensor batteries are low. 



It is also possible to view the battery charge level by selecting **"sensor battery"** in the menu.

Battery level - "Sensor battery" function

10% level **50% level** **Full 100% level**

However there are still 8 hours of battery life. 
From the moment the battery indicates 10%, there will not have sufficient power to ensure a perfect wireless connection between sensor and control box.
The device will continue to work but there is a risk of disconnections and reconnections.
It is therefore recommended to replace the batteries with new ones.

4.4.3 Function to set screen brightness

The **"brightness"** function is used to vary the screen brightness to adapt to surrounding light conditions.

Reducing the brightness also saves battery power during the intervention and increases the equipment's autonomy.

By default, brightness is set to 50% of its power.

The device memorises the brightness setting. The user can therefore switch from search camera mode to seismic sensor mode (and vice versa) without the setting being impacted.

4.4.4 Left hander / right hander function

The left/right hand function is used to set the control box for use by a left handed or right handed person. When selected, the function reverses the image and the function displays (menu and sub-menu), as well as the keyboard operation.

By default the software is set for use by a right handed person.

4.4.5 Switching to camera mode

There are two ways of switching from **"seismic mode" to "camera mode":**

- Using the menu by selecting the **"camera"** icon.

or

- By directly connecting the boom to the control box. The screen automatically shows the camera image. The seismic sensors can remain powered on.
  The opposite is also true: by disconnecting the boom, the seismic mode automatically reappears (the sensors must be powered on and connected).

5 SEARCH CAMERA MODE

5.1 Using the main functions

The search camera mode and its menu appear when the boom is connected. Pressing the menu button accesses the different functions  .

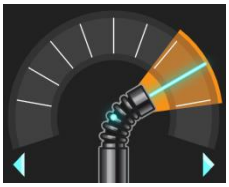
Up to ten icons can then be selected. The "▲" and "▼" navigation keys are used to select the required function. Pressing the validation key  gives access to the required function. Pressing the menu key  again exits the menu window and returns to the main screen.

5.1.1 Camera direction function

The right/left camera orientation is achieved using the ► or ◄ keys without using the menu. When the camera rotates, an icon is displayed on the screen showing its position.

The camera head can be mechanically oriented 85° to the right and 85° to the left (170° total). The directional camera and head provide a 260° field of vision without any blind spots.

- Pressing keys ► or ◄ first displays the icon and shows the camera position.
- Pressing the ► or ◄ key again moves the camera to the right or left depending on the key that is used. On the screen, the position icon shows 9 increments. The key must be pressed several times to pass from one increment to the next. Keeping the key pressed down permanently rotates the camera continuously.
- The icon disappears after 2 seconds if there is no action on the ► or ◄ keys.

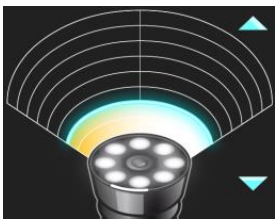


Example of right rotation.
The blue axis shows the direction.
The orange zones show the field of vision.

5.1.2 Boom end lighting intensity function

The intensity of the lighting at the tip of the boom is controlled directly using the ▼ and▲ keys without using the menu. When modulating the lighting, an icon is displayed on the screen showing the intensity level:

- 8 lighting intensity levels can be selected.
- Pressing the ▼ or▲ keys displays the icon and checks the lighting intensity.
- The lighting only changes when the ► or ◄ keys are pressed a second time.
- Continuously pressing a key makes it possible to increase or decrease the lighting intensity continuously.
- The icon disappears after 2 seconds if there is no action on the ► or ◄ keys.



Example of the "lighting" icon

5.1.3 Push to Talk function (Communicating with the victim)

By default, listening to the victim has priority. Transmission from the rescuer to the victim is established by keeping the **Push-to-talk** key pressed down (press to talk). Transmission to the victim does not allow the victim to be listened to while the **Push-to-talk** button is being pressed.

A second headset can be connected (supplied as an option). The second headset has the same functions as the first.

If the **Push-to-Talk** button is not pressed, both headsets communicate with each other without the victim being able to hear.

5.2 Menu: Description of the Search camera mode icons

- The "**picture zoom"** function is used for digital enlargement. The displayed image can be enlarged twice (Digital zoom x2).

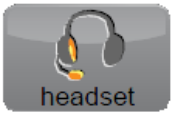
- The **"picture rotate"** function is used to rotate an image by 0°, and 180° on the screen.

- The **"video"** function is used to record videos on the micro SD card.

- The **"picture"** function is used to take shots and record them on the micro SD card.

- The "**left/right hand"** function is used to allow the control box to be used by a left handed or right handed operator by reversing the image, function display on the screen, and the keyboard operation.

- The "**brightness"** function is used to set the screen brightness.



- The **"headset"** function is used to control the headset volume when listening to the victim.

- The **"speaker"** function is used to control the volume of the loud speaker at the tip of the boom. It is used for communications between the rescuer and the victim.

- The **"seismic"** function is used to access the seismic listening mode to use the seismic sensors.

- The "**gallery"** function gives access to the video recordings and pictures taken using the "**video"** and "**picture"** functions to view them on the screen.

The **"picture zoom", "picture rotate", "picture", "video" and "left/right hand"** functions can be used at the same time.

Once the functions have been selected, miniature icons appear at the top right of the screen. They remain on the screen permanently until they are deactivated.

5.2.1 Zoom function

The "**picture zoom"** function is used for digital enlargement. The displayed image can be enlarged twice (Digital zoom x2).

- To zoom: select the **"picture zoom"** function from the menu then press the validation key. Once on the sub-menu, select **"zoom in"** then press the validation key to activate the function and enlarge the picture by 2.

A magnifying glass icon appears at the top right of the screen to indicate that the image has been enlarged

- To zoom out: select the **"picture zoom"** function from the menu then press the validation key. Once on the sub-menu, select **"zoom out"** then press the validation key to activate the function and display the picture at its normal x1 size.

The magnifying glass icon then disappears from the top right of the screen.

5.2.2 Image rotation function

The **"picture rotate"** function is used to rotate an image by 0°, and 180° on the screen.

- By default the image is displayed the right way up at 0°.

- To rotate by 180°, select the **"picture rotate"** function from the menu then press the validation key. Once on the sub-menu, use the keyboard ▼ key directly. The image rotates immediately.
  An ▼ icon appears at the top right of the screen to indicate in what direction the image is now positioned. The middle tip of the triangle shows the top of the image.

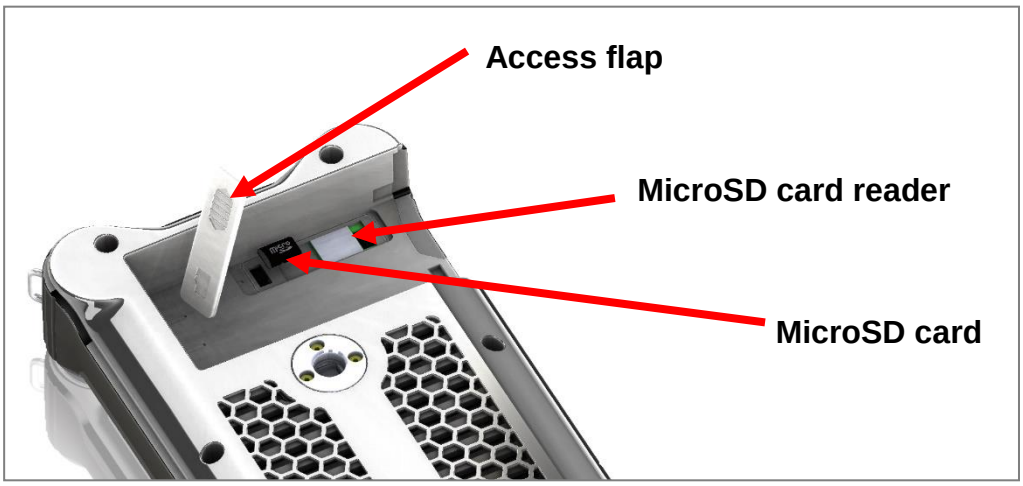
- To place the image back at 0°, press the ▲ key directly if you are still on the sub-menu. Otherwise select the **"picture rotation"** function from the menu then press the validation key. Once on the sub-menu, use the keyboard ▲ key directly. The image rotates immediately.

5.2.3 Photo / video recording functions

The **LEADER Hasty** has a picture taking and a video recording function. These two functions are only available if a microSD backup card is in the control box reader.
A Class 10 4Go card is inserted in the reader of each delivered control box.

The number of pictures and recorded video times vary depending on the number of pictures and videos taken as the intervention progresses. However, as an indication:
- If only pictures are taken (with 1Go): 1000 pictures can be saved.
- If only videos are recorded (with 1Go): about 1 hours of video can be saved.

The microSD card reader is located under a flap behind the control box. To access it, remove the battery pack.



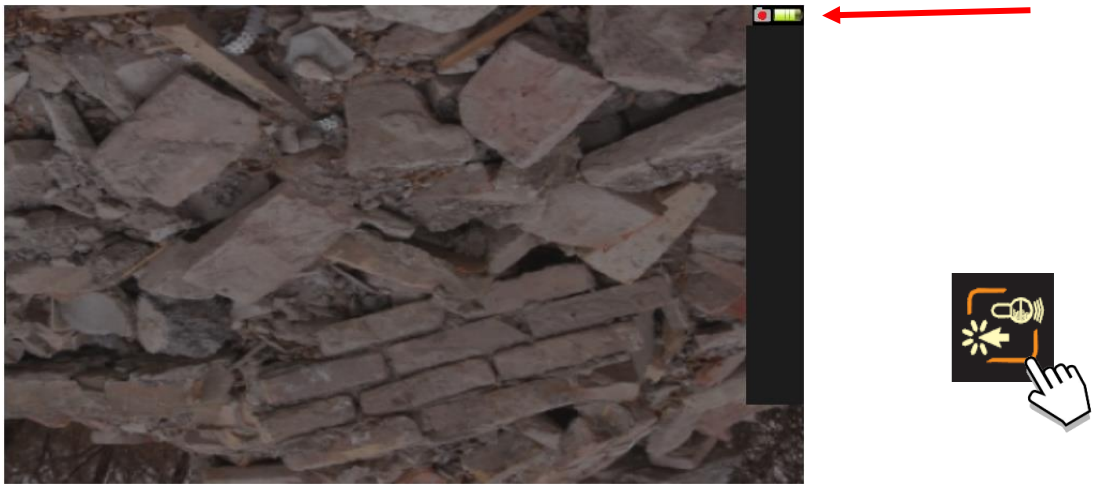
The **"picture"** (photos), **"video" and "gallery"** (viewing pictures/videos) are only active when a microSD card is present in the control box.
Otherwise the icons for these functions are greyed out.

Picture taking function

The **"picture"** taking function is used to take shots and save them on the microSD card.

To take a shot select the "picture" function from the menu then press the validation key.

Each time a picture is taken the icon appears at the top right of the screen to show that the picture is being saved to the microSD card. The menu also disappears when this is complete.



When the icon reappears, the device is ready to take another picture. It is not, therefore, required to press the validation key again for this icon to reappear.

Video recording function

The video function is used to record videos on the micro SD card.

To record a video, select the **"video"** function from the menu then press the validation key.

This action triggers the video recording and removes the menu from the screen.

When recording, the and icons appear alternatively on the top right of the screen to indicate that a video is currently being recorded.

To stop recording, select the **"video"** function from the menu then press the validation key.

The menu that appears is:

The and icons disappear, as does the menu. The camera image reappears on the screen by itself.

The **"video"** function can be used at the same time as the following functions:

- **Picture zoom**; If this function is active, the magnifying glass icon is displayed at the top right of the screen. On the other hand, the recorded video ignores the x2 zoom. The images are recorded at normal x1 size.
- **Picture rotate**; If this function is active, the icon is displayed at the top right of the screen. On the other hand, the recorded video ignores the selected rotation value.
- **Left/right hand**; If this function is activated for left handed people you will notice the fact because the control box will be operated using your left hand. The image, the menu on the screen, and the keyboard keys will all have been reversed. No icon is displayed to avoid cluttering the screen.
- **Brightness**; This function which controls screen brightness remains accessible using the menu.
- **Headset**; This function which controls the audio headset volume remains accessible using the menu.
- **Speaker**; This function which controls the boom tip loud speaker volume remains accessible using the menu.

The camera head **rotation and lighting** functions are operational during recording.

5.2.4 Photo / video viewing function

The function is only available if the microSD card is present in the control box.

Pictures and videos are viewed using the "gallery" function. To access the function, select the **"gallery"** icon from the menu then press the validation key.

The photo or video that is centred on the screen is historically the first that was saved. You therefore need to scroll through all the previously saved photos and videos to be able to view the last photo or video.

Scrolling in the "gallery" function uses the ◄ and ► keys on the keyboard. Pressing the validation key is used either to read or stop reading the pictures and videos. When a selected file is being played, the image is enlarged to full screen size.

When the end of a video is reached, it stops and displays the "stop" icon  to confirm the end of the video.

Videos are identifiable by the icon which is embedded over the displayed image. Photos do not have an icon.

The menu key is used to exit the **"gallery"** function.

The pictures and videos can also be read on a computer. Software compatible with the file formats is required:

- Photo formats: Viewable using **"Xnview"** software.
  https://drive.google.com/drive/folders/0B2x7i5oli1SsVTNIc3pyLTNINlk?usp=sharing

- Video formats: Viewable using the **"Zoom player"** software.
  https://drive.google.com/drive/folders/0B2x7i5oli1SsLUYtV3A5RXFtcEk?usp=sharing

To read the files insert the microSD card in the SD microSD adapter (supplied). Then insert the adapter into a computer which has a card reader. Then open the file using the correct software.

Photo and video files can only be deleted from a computer.

5.2.5 Right hand / left hand function

The "**left/right hand"** function is used to set the control box for use by a left handed or right handed person. To access the function, select the **"left/right hand"** icon from the menu then press the validation key.

When selected the function reverses the image and the function displays (menu and sub-menu), as well as the keyboard operation.

By default the software is set for use by a right handed person.

5.2.6 Screen brightness function

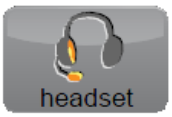
The **"brightness"** function is used to vary the screen brightness to adapt to surrounding light conditions.

To access the function, select the **"brightness"** icon from the menu then press the validation key.
Once the function has been selected, use the ▲ and ▼ keyboard keys to increase or lower the brightness of the screen.

Reducing the brightness also saves battery power during the intervention and increases the equipment's autonomy.

By default, brightness is set to 50% of its power.

The device memorises the brightness setting. The user can therefore switch from search camera mode to seismic sensor mode (and vice versa) without the setting being impacted.



5.2.7 Audio headset function

The **"headset"** function is used to control the headset volume when listening to the victim.

To access the function, select the **"headset"** icon from the menu then press the validation key.
Once the function has been selected, use the ▲ and ▼ keyboard keys to increase or lower the volume on the connected headset(s).

A second optional headset can be connected. It is supplied with a Y connector used to connect both audio headsets to the control box.

5.2.8 Loud speaker function

The **"speaker"** function is used to control the volume of the loud speaker at the tip of the boom. It is used for communications between the rescuer and the victim.

To access the function, select the **"headset"** icon from the menu then press the validation key. Once the function has been selected, use the ▲ and ▼ keyboard keys to increase or lower the volume on the connected headset(s).

5.2.9 Switching from the Camera mode to the seismic mode

There are two ways of switching from **"camera mode"** to **"seismic mode":**

- Using the menu by selecting the **"seismic"** icon.
  or
- By directly disconnecting the boom from the control box. The screen will automatically display the seismic mode. At least one sensor must be connected.
  The opposite is also true: by reconnecting the boom, the camera mode automatically reappears (the sensors can remain powered on and connected).

6 TROUBLESHOOTING

Problem	What to do
The control box will not start	• Check that the battery is charged. • Check that the battery pack is connected. • Check that the battery is not charging when connected to the control box.
Boom not detected	• Check that the boom cable (orange) is'not damaged. • Check that the boom connector is correctly connected.
Wireless seismic sensor not detected	• Check that the sensor is powered on • Check that the sensor batteries are not flat. • Check that the batteries are properly connected. • Check that the sensor is correctly paired to the control box. • Check that the sensor is not out of range.
The Photo, **Video and Gallery** functions are greyed out	• Check that the microSD card is in the control box
Little or no sound in the headset	• Check that the audio volume has not been reduced. • Check that the headset is properly connected.
No image or blurred image	• Check that the boom protector cap has been removed
The following icon appears 	• There is a software error Note down the message on the screen and contact Customer service

7 WARRANTY

LEADER SAS guarantees the original purchaser of the **LEADER Hasty** that the equipment is free of equipment and labour defects for two (2) years from the purchase date for the control box, the boom and the sensors, and one (1) year for the rechargeable battery. This limited warranty is only applicable to the original buyer and not for third parties to whom the equipment may have been resold.

LEADER SAS's duties under this warranty are specifically limited to the replacement or repair of the equipment (or its parts) after it has been inspected by **LEADER** and considered by **LEADER** to be defective. To be able to benefit from this limited warranty, the claimant must send the equipment to **LEADER SAS** within a reasonable time of having discovered the said defect. **LEADER** will inspect the equipment. If **LEADER** determines that it is liable for the defect, the company will resolve the problem in a reasonable time. If the equipment is covered by this limited warranty, **LEADER** will pay the costs of the repairs.

In the situation where any defect for which **LEADER** is liable under this limited warranty could not be reasonably resolved by a repair or a replacement, **LEADER** may then choose to refund the purchase price of the equipment, from which a reasonable depreciation value will be deducted, in order to fulfil its duties under this limited warranty. If **LEADER** decides to do this, the claimant must send **LEADER** the equipment free of charge and free of any liabilities or constraints.

This warranty is limited. The original purchaser, any person to whom it may be transferred, and any person who is the intended beneficiary of the equipment or not, cannot claim the payment of any damages from **LEADER** in the event of injuries and/or material damage due to any defective equipment manufactured or assembled by **LEADER**. Some countries do not allow the exclusion or limitation of damages: the above section may or may not be applicable depending on the country. **LEADER** cannot be held liable under this limited warranty if the equipment has been used inappropriately or negligently (including the absence of reasonable maintenance), or if it has suffered accidents or been repaired or modified by a third party.

THIS WARRANTLY IS ONLY AN EXPLICIT LIMITED WARRANTY. LEADER DOES NOT ACCEPT ANY IMPLICIT WARRANTY FOR COMMERCIAL QUALITY AND SUITABILITY FOR ANY OTHER SPECIFIC USE. NO OTHER WARRANTY (OF ANY TYPE WHATSOEVER) THAN THE WARRANTY GIVEN BY LEADER IN THIS DOCUMENT WILL BE ACCEPTED.

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CERTIFIED ISO 9001 AB CERTIFICATION

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