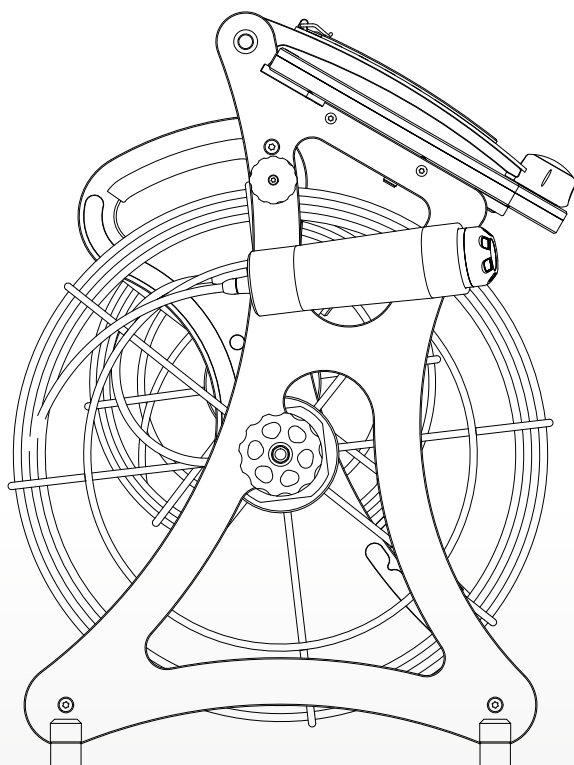


EASY HD



INSTRUCTION MANUAL
EASY HD

EN

EN

English

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Keep the manual for future reference!

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INTRODUCTION

About the manual

The manual ensures the safe operation of the devices and must be kept in the devices' close proximity, immediately accessible for any personnel.

All personnel are to carefully read and understand this manual before taking up work. As a precondition for safe operation, all safety instructions and operational procedures given in this manual must be observed.

Furthermore, the local accident prevention regulations and general safety provisions applicable for the devices' range of use are to be heeded.

Explanation of symbols

Safety instructions in this manual are indicated by means of symbols. The safety instructions express the extent of the hazard.



WARNING

This combination of symbol and signal word identifies a possibly dangerous situation, which may cause death or severe injuries if not avoided.



CAUTION

This combination of symbol and signal word identifies a possibly dangerous situation, which may cause minor or slight injuries if not avoided.



NOTE

This combination of symbol and signal word identifies a possibly dangerous situation, which may cause damage to property and environment if not avoided.



TIP This symbol highlights useful tips and information for an efficient and trouble-free operation of the device.

SAFETY

Proper Use

The devices are solely intended to be used for inspection of cleaned pipelines in combination with original accessories and components made by Kummert GmbH. Any use beyond this purpose is considered improper.

Target group

This manual is addressed to skilled sewer and pipe inspectors or individuals with a comparable, documented qualification.

Safety information

The following section identifies residual risks which may be caused by the device even if it is used as intended.



WARNING

Electrical voltage!

If the isolation or individual components are damaged, there is a risk of fatal injury due to electric shock.

- Switch off the device when it is not in use, during maintenance and cleaning.
 - In the event of damage, immediately terminate the inspection and have the device repaired by a Certified Service Center.
-



WARNING

Risk of photosensitive epileptic seizures!

Some people may experience epileptic seizures or loss of consciousness if they are exposed to certain visual images:

- If epilepsy-like symptoms occur, stop all operations immediately and consult a doctor.
-



WARNING

Risk of injury!

When unwinding and rewinding the rod, injuries can be caused by the turning reel and unintended unwinding of the rod. Therefore:

- Never reach into the reel basket during operation.
 - Always lock the reel if the rod should not unwind or rewind.
-



WARNING

Rechargeable battery!

The device has a battery. Improper use could lead to an explosion:

- Never open the device.
 - Do not drop the device.
 - Protect the device from excessive heat and sunlight.
 - Charge the batteries exclusively with cables and power supplies offered by Kummert GmbH.
-



WARNING

Workplace ergonomics!

The device does not meet the requirements of an ergonomic workplace for every operating position or for every user.

- Avoid prolonged usage in an operating position.
-

PREPARATION

Scope of delivery



TIP Claims for damages can only be asserted within the legal time for claims. Report every fault as soon as it has been discovered.

The delivery is to be inspected for completeness and possible transport damage immediately upon receipt. Report transport damages to the carrier immediately.

The standard scope of delivery includes:

- Easy HD
- Rechargeable Battery
- Battery charger
- K-50 HD
- K-28 HD
- Push rod 50m
- Push rod 25m
- USB stick

Packaging



TIP Keep the packaging material for storage or transport.

Packaging may also comprise materials added to the packages for the protection against moisture or frost (e.g. silica gel bags, anti-freezing agents).

Storage

Always store the device under the following conditions:

- Do not store outdoors.
- Store in a dry and dust-free place.
- Protect the connectors of the device with the supplied protective caps.

Transport

When transporting the device in vehicles, always comply with the local security of loads regulations. In addition, make sure that the device is protected against external forces.

The device can be carried from the vehicle to the place of operation (see work preparation).

PRODUCT DESCRIPTION

Brief description

Easy HD is a complete system for the inspection of pipelines. The device is designed to control the connected camera and to record the condition of pipelines. The device is equipped with two push rods and two cameras.

The K-28 HD is a small camera that is used for DN40 and up. It is particularly suitable for bends and is therefore ideal for use in bathrooms and kitchens. The K-28 HD is firmly connected to a 25m long rod.

The K-50 HD is used in pipes from a diameter of DN70. The flashing LEDs guarantee perfect illumination and crisp, clear images. The digital pan and tilt function allows for a detailed inspection that was previously impossible with an axial camera. Zoom, sharpness and brightness can be adjusted at any time during inspection. The K-50 HD is brought into the pipe with a 50m long rod.

Specifications

Monitor	12,3"
Resolution	2880x1920
Power supply	Battery 18V
Charging time	approx. 30 minutes
Camera picture control	3D-Joystick
Processor	Intel® Core Ultra 5
Removable memory	USB thumb drive
Image format	JPEG
Video format	MP4
Protection category	IP54
Reels	25 m, 50 m
Weight	approx. 15 kg
Footprint	approx. 360 mm x 475 mm
Height	approx. 640 mm

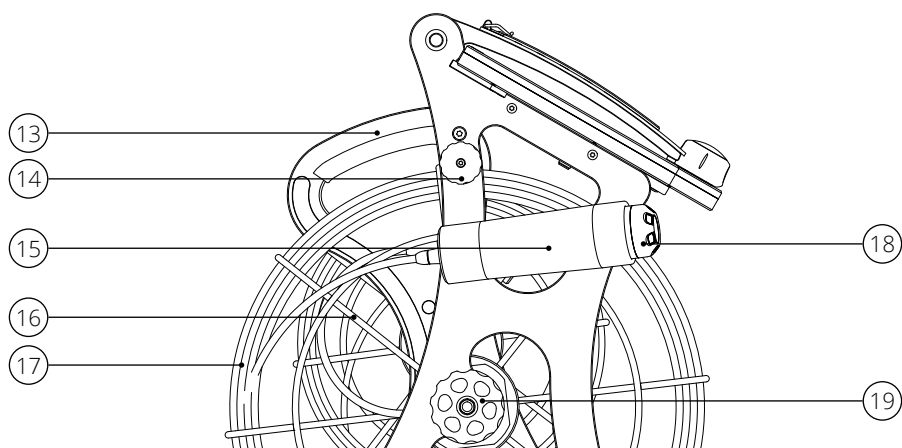
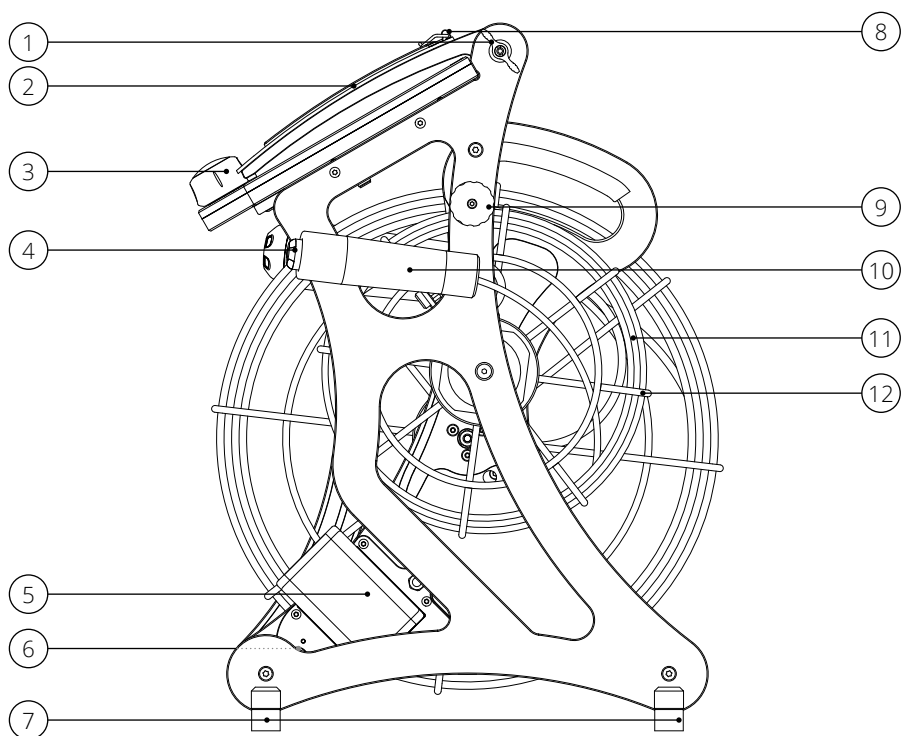
K-50 HD

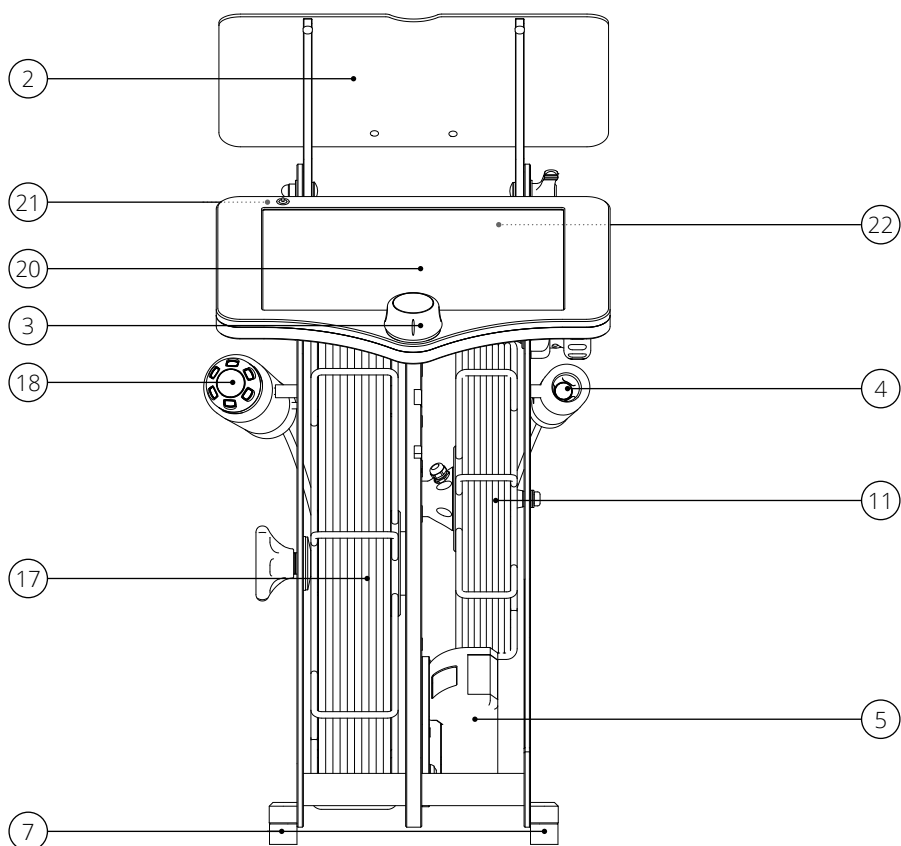
Range of use	DN 70 and up
Diameter	50 mm
Length	192 mm
Weight	400 g
Meter counter	Yes
Protection category	IP 68
Focus	Adjustable
Angle of view (Full image mode)	80°
Angle of view (View mode)	135°
Tightness	1 bar

K-28 HD

Range of use	DN 40 and up
Diameter	27 mm
Length	32 mm
Weight (incl. reel)	3 600 g
Meter counter	Ja
Protection category (camera)	IP 68
Focus	fix
Angle of view	120°
Tightness	1 bar

Components





- 1** Wing nut
- 2** Monitor cover
- 3** 3D-joystick
- 4** K-28 HD
- 5** Battery
- 6** Button start charging
- 7** Supporting feet
- 8** Document clamp
- 9** Reel lock (25 m)
- 10** Quiver K-28
- 11** Push rod 25 m

- 12** Small reel basket
- 13** Carrying handle
- 14** Reel lock (50 m)
- 15** Quiver K-50 HD
- 16** Large reel basket
- 17** Push rod 50 m
- 18** K-50 HD
- 19** Freewheel break
- 20** Touchscreen
- 21** Power switch
- 22** USB port

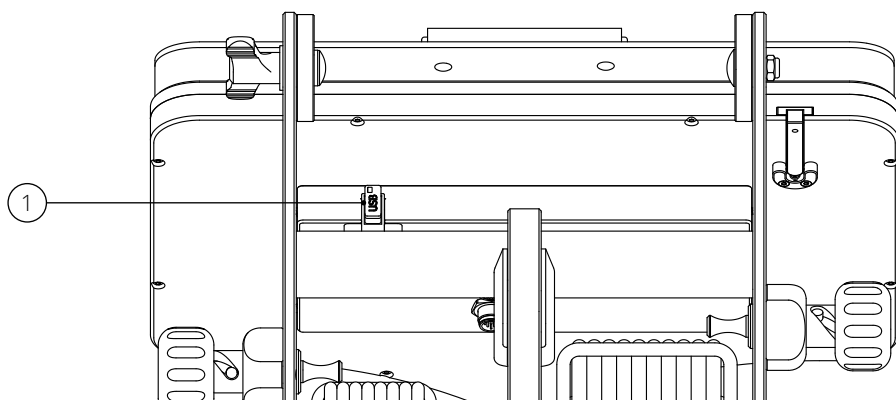
PREPARATION

Transport to place of operation

The device can be carried to the place of operation. The monitor cover shield should be closed during transport to protect the touch screen. Make sure that the cameras are secured in the tubulars and the reel locks are engaged. To carry the device, hold the carrying handle and lift it up.

Connect removable media

All recorded data can be exported to the connected removable storage device. Connect a USB drive to the **USB port (1)** on the back of the Easy HD.

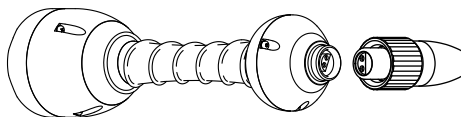


Connect K-50 HD

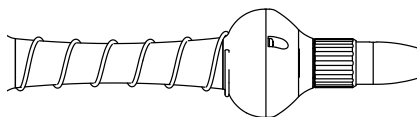
Before starting operation, make sure that the K-50 HD is connected. In case it is not, connect the K-50 HD.

Hold the reel basket firmly with one hand. Turn the reel lock counterclockwise until it engages. Pull out about half a meter of the rod. Turn the reel lock clockwise until it engages. The reel turns to the next bar of the reel basket and stops.

Connect the camera socket to the 4-pin plug of the reel. Make sure that the pins are in the correct position.



Hand-tighten the screw connection of the plug.



WARNING

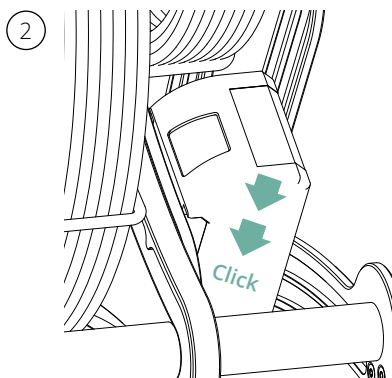
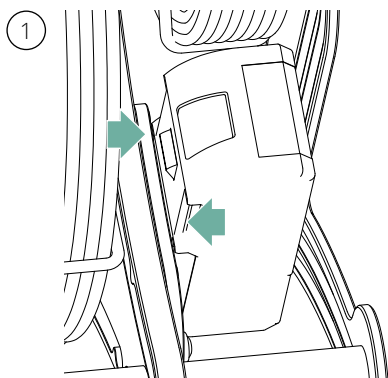
Risk of injury!

When unwinding and rewinding the rod, injuries can be caused by the turning reel and unintended unwinding of the rod. Therefore:

- Never reach into the reel basket during operation.
 - Always lock the reel if the rod should not unwind or rewind.
-

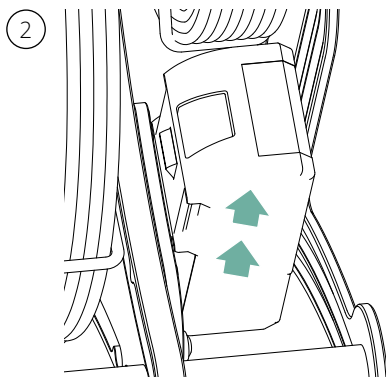
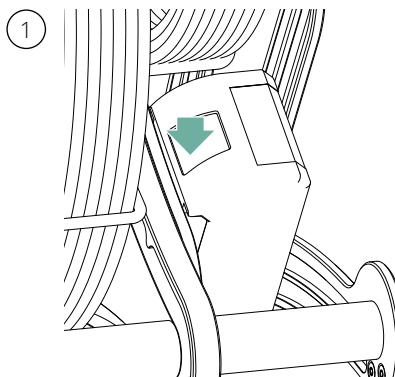
Insert battery

Make sure that the battery is sufficiently charged. Slide the battery from top to bottom into the designated holder until you hear a clicking sound.



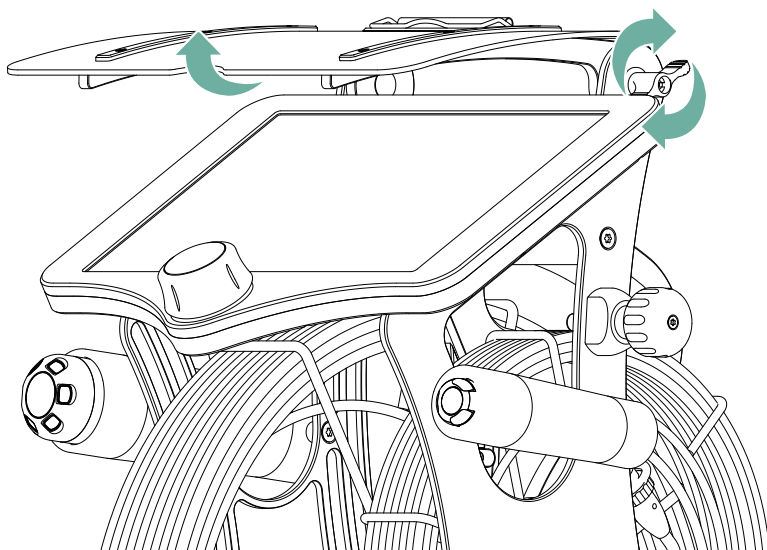
Remove battery

To charge or replace the battery, it has to be removed from the device. Press the **button (1)** downwards, grasp the battery and pull it upwards out of the holder.



Open monitor cover

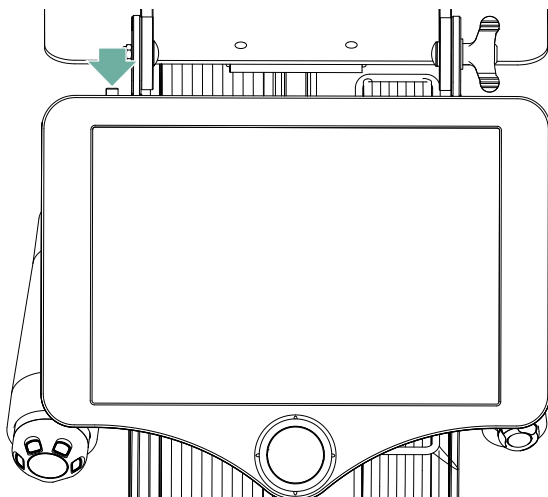
Turn the wing nut towards you to loosen it. Move the cover to the desired position. Hand-tighten the wing nut by turning it in the opposite direction.



OPERATION

Switching on Easy HD

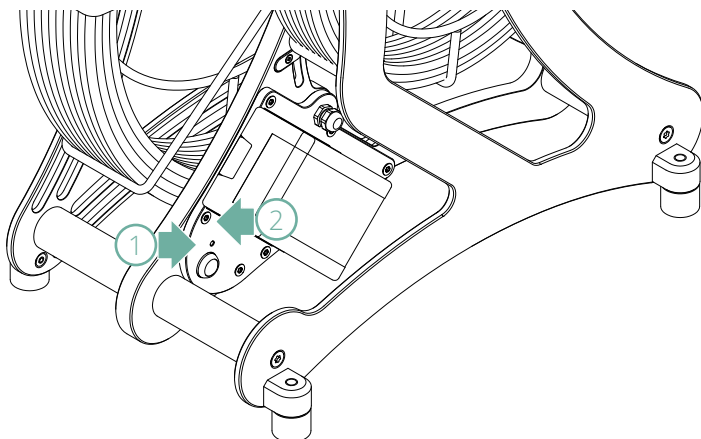
Press the power switch. Wait until the device and the software have started up.



Switching on Easy HD after battery discharge

If the tablet's battery is completely discharged, switching it on is not possible. In this case, the following steps are necessary:

- Insert a sufficiently charged battery.
- Press the **Start Charging button (1)**.
- Check that the **LED (2)** above the button lights up purple. The tablet will charge for a maximum of 10 to 15 minutes.
- Wait a few minutes, then press the power button.



Reel lock

Hold the reel basket firmly with one hand. To release the reel, turn the reel lock counterclockwise until it engages. The reel now can be wound up and unwound.

To lock the reel, turn the reel lock clockwise until it engages. The reel turns to the next bar of the reel basket and stops. The reel now cannot be wound or unwound further.

Freewheel brake

With the freewheel brake, the user controls how the push cable can be unwound from the reel. When adjusted correctly, the push cable doesn't unroll uncontrolled but can be unwound smoothly and without resistance.

Make sure that the reel is locked or hold the reel basket with one hand to avoid unintended unwinding of the push cable.

Turn the brake counter-clockwise in order to make the rod unwind and rewind more easily. Turn the brake clockwise in order to make the rod unwind and rewind less easily.



WARNING

Risk of injury!

When unwinding and rewinding the rod, injuries can be caused by the turning reel and unintended unwinding of the rod. Therefore:

- Never reach into the reel basket during operation.
 - Always lock the reel if the rod should not unwind or rewind.
-

Pushing the camera into the pipe

Release the reel lock of the reel that you want to use. Pull the camera out of the tubular and position it into the pipe that you want to inspect. Push the camera forward using the rod.

Pulling the camera back

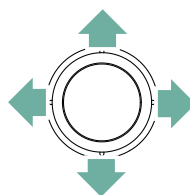
Pull the camera back using the rod. Place the camera into the tubular and secure the reel lock.

Operating K-50 HD/ K-60 HD

The K-50 HD and the K-60 HD are controlled via the 3D joystick.

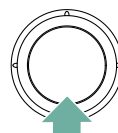
Move image/ camera

Move the 3D joystick up, down, left or right.



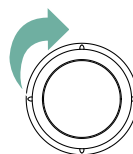
Align image/ camera

Press the 3D joystick to straighten the image/ camera.



Adjust focus

Turn the 3D joystick to the left to focus on a closer area and to the right to focus on a more distant area.



SOFTWARE

Startup screen

After starting Easy HD, the **live image (1)** of the K-50 HD and the **controls (2)** of the camera are displayed.

The button **Project (3)** takes you to the project page.



Main menu

The main menu is opened and closed via the **menu button (1)**.

2: A window opens where you can connect the Easy HD to a WLAN.

3: A window opens where you can connect the Easy HD to a WLAN.

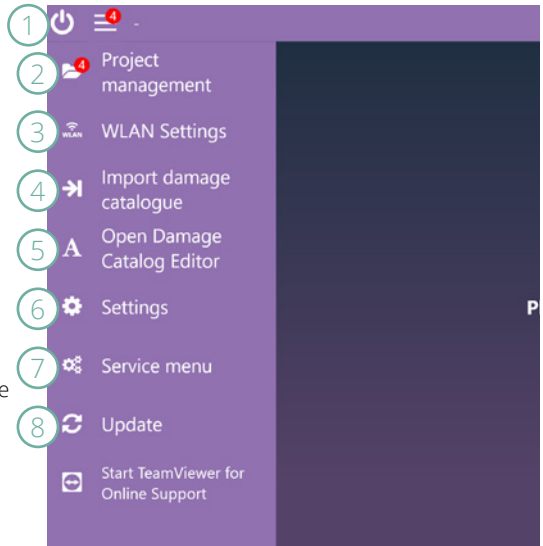
4: A window opens where you can select a removable disk and import a damage catalog.

5: The damage catalog editor will open.

6: A window opens where you can change the language. A restart is required.

7: It opens the service menu. Here, for example, the reel can be programmed after the exchange of the rod.

8: The version number of the software is displayed. With one click the update can be carried out if one is available.



Settings

Open Main menu (1) and tap **Settings** (2).

Change date and time

To edit the date, tap **Calendar** (3) at the end of the field. Select the desired date. To edit the time, tap on hours, minutes or seconds and change the value using the two **arrows** (4) at the end of the field.

Edit the frequency of the locating transmitter

Tap on the field with the current **value** (5) and select from the list.

Change language

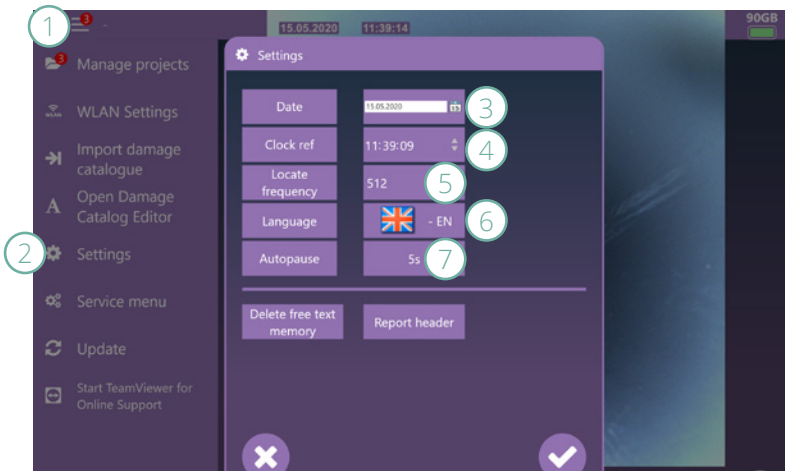
Tap on the **Language** field (6). A window with a dropdown list opens. Select the desired language and confirm with OK. A restart is required.

Set autopause (7)

Specify after what period of inaction time the recording should automatically pause.

Text memory

The device has a free text memory. Any entries you have made will be available as suggestions the next time you enter them. To clear the free text memory, tap **Delete free text memory** (8).

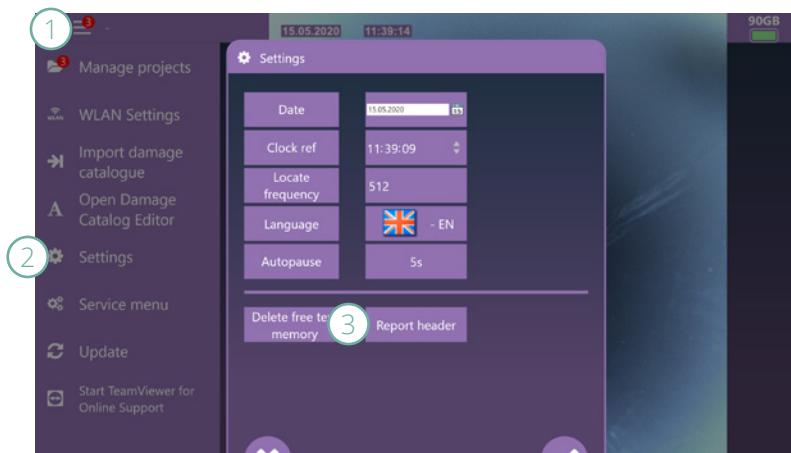


Reports

A pdf pipe report file is created after the completion of a survey. It is generated automatically and requires no action by the user.

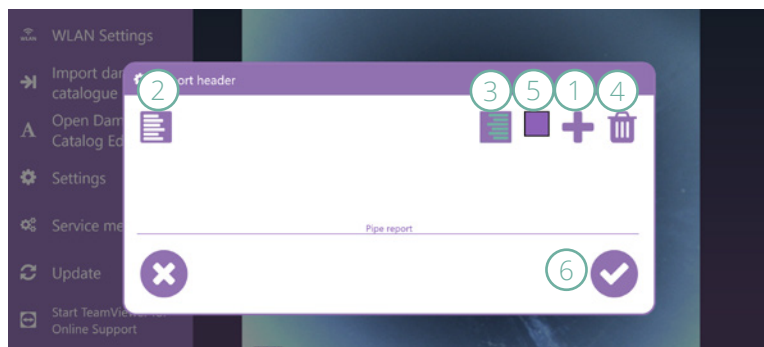
Customize report header

To customize the report header, open **Main menu** (1) and tap **Settings** (2). Select **Report header** (3).



To add a logo to the report header, tap on **Add** (1). Decide if the logo will be on the **left** (2) or the **right** (3) side. To delete the logo, tap on **Delete** (4).

Select a colour for the separators and the title. To do this, tap on the **Colour picker** (5) and choose the desired color. Confirm with **OK** (6).



Damage catalog

To simplify the recording of the condition, a damage catalogue can be used - i.e. a list of observations from which descriptions can be selected.

The Damage Catalog Editor is used to create a damage catalog. It can be used on a computer or directly on the Easy HD. If the editor is used on a computer, the damage catalog is exported to a removable disk and then imported to the Easy HD. For this purpose, the option Import Damage Catalog is available in the main menu.

If the damage catalogue is to be created directly on the Easy HD, you can open the editor via the main menu.

Damage Catalog Editor

Click on **Damage Catalog Editor** in the main menu.

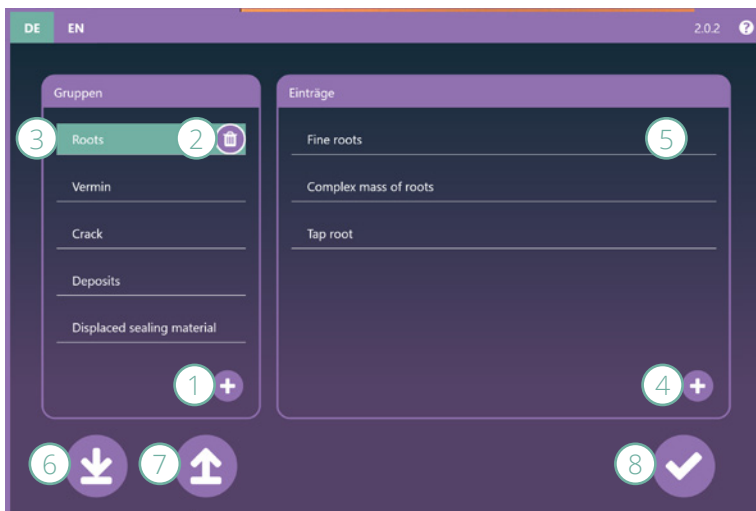
Observations are divided into groups and entries. The group is the main term, where several entries can be assigned.

To create a group, click on the button **New (1)**. An on-screen keyboard launches, with which the text can be entered. To delete a group, select it and click **Delete (2)**.

To create an entry, select the corresponding **group (3)** and click on the button **New (4)**. An on-screen keyboard launches, with which the text can be entered. To delete an entry, select it and click on **Delete (5)**.

To accept the created damage catalog, click on **Export (6)**. Wait until a message confirms the successful export. To import a damage catalog, click **Import (7)**. Wait until a message confirms the successful import.

Click on **OK (8)** to close the editor.



Project management

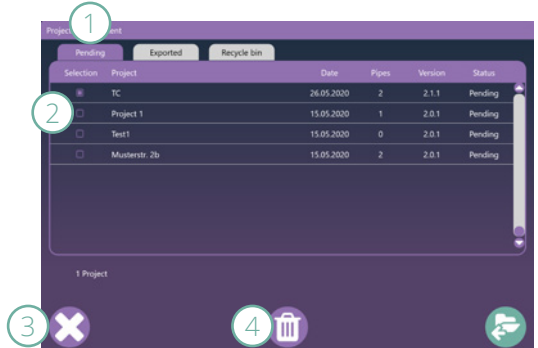
Tap on **Project management**.

The **Pending (1)** folder is active.
All projects that have not yet been exported are listed there.

Select (2) the projects to be copied to a USB stick and tap **Export (3)**.

After the export, these projects are shown in the **Exported folder** and after 14 days are moved to the **Recycle bin**.

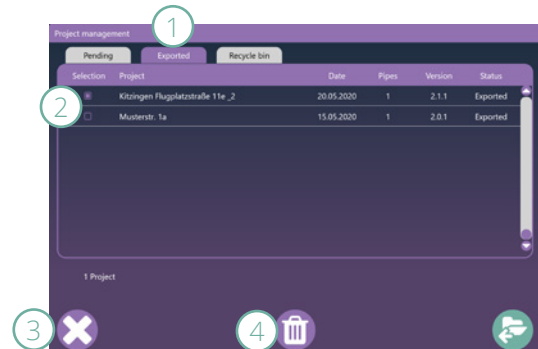
To delete projects, select them first and tap **Delete (4)**.



To export a project to a USB, tab on the **Exported (1)** folder.

Select (2) the projects to be copied to a USB stick and tab **Export (3)**.

To delete projects, select them first and tap **Delete (4)**.

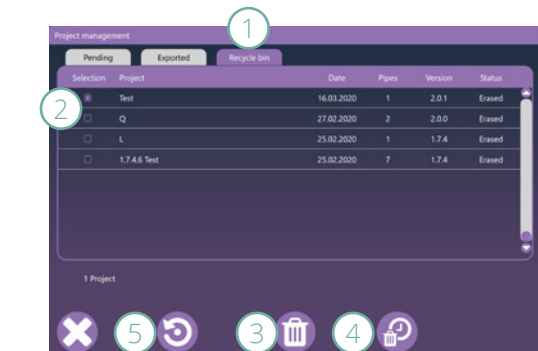


After 14 days the exported projects are moved to the **Recycle bin (1)** where they remain stored until permanently deleted from the device.

Select (2) all projects to be permanently deleted and tap **Delete (3)**.

To delete all projects that are older than 30 days, tap **Delete old projects (4)**.

To restore a project, select it first and tap **Restore (5)**. It will appear in the same folder from which it was deleted.



Projects

Create project

To create a project, tap on **Project (1)** and then on **New (2)**. Select the desired project type and enter a name. If required, you can define further **properties (3)**.



Select project

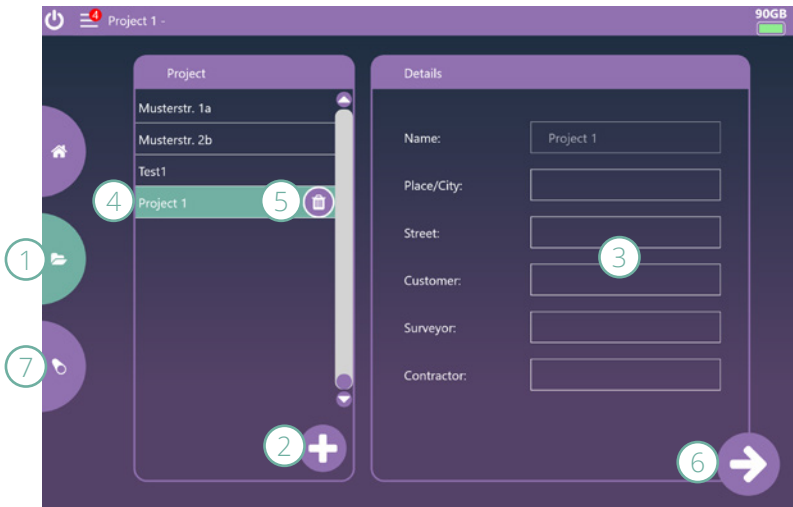
In order to view or continue a project, you first have to select it. Tap **Project (1)** and on the desired project in the list (4).

Delete project

Tap on **Project (1)** and select the desired project from the list. Tap on **Delete (5)** and confirm the message with OK.

Create pipe

Tap on **Next (6)** or on **Pipe (7)** to switch to the pipe management.



Pipes

Create pipe

Tap **New** (1) and enter a name for the pipe. If required, you can define further **properties** (2).

Select pipe

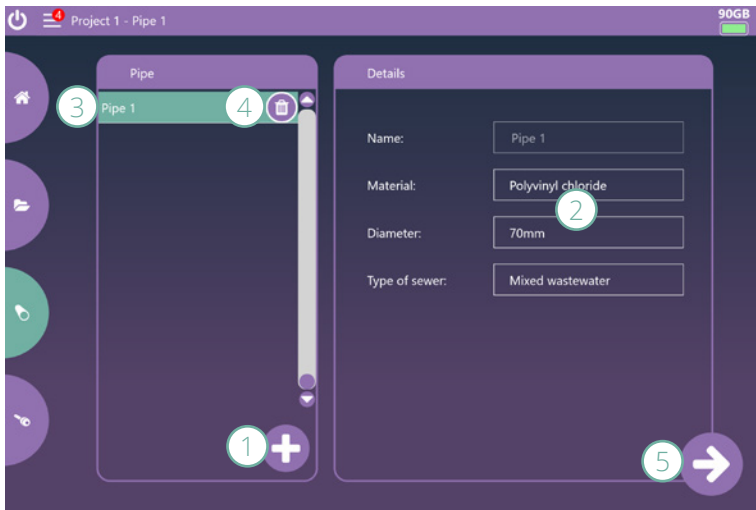
To view a recording or edit the pipe, you first have to select it. Tap on the desired pipe in the list (3).

Delete pipe

Tap on the desired pipe in the list. Tap on **Delete** (4) and confirm the message with OK.

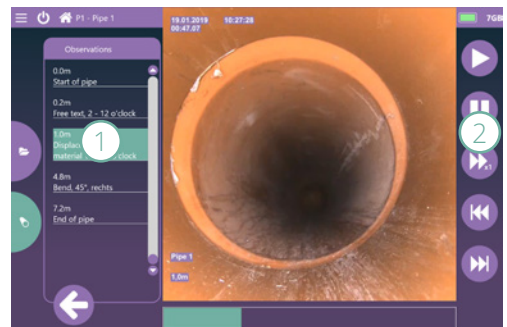
Create survey

Tap **Next** (5) to load the Inspection window.



Play video

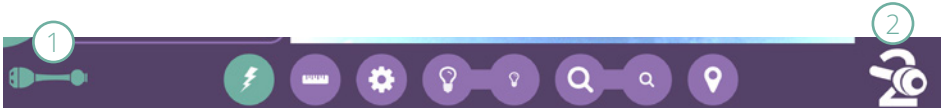
Select the desired pipe from the list and tap on **Play** (if there is a video, the Play button will appear instead of the button Next). The **observation list** (1) appears on the left hand side. The playback **control buttons** (2) are displayed on the right hand side.



Control elements

After starting, the K-50 HD camera is automatically switched on. The **camera icon (1)** of the active camera is mint green. To change the camera, tap on the gray camera icon (in this example it is the **camera icon (2)** for the K-28 HD).

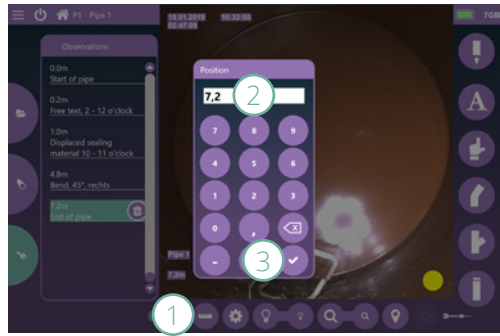
To turn off the active camera, tap on the mint green camera icon (in this example it is the **camera icon (1)** for the K-50 HD).



Adjust meter count

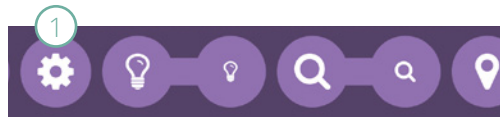
The current position is displayed in the live image. To change it, tap on **Adjust Meter Count (1)**. A numeric keypad **(2)** opens, via which you can enter the desired value.

Confirm with **OK (3)**.



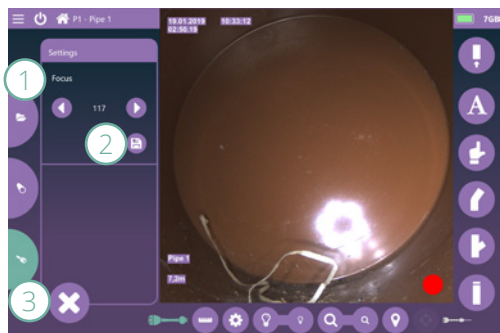
Camera settings K-50 HD

Tap on **Settings (1)**.



To readjust the **focus (1)**, position the camera approx. 30cm from a pipe connection, for example. Change the value using the arrow keys until the connection is sharp. Click on **Save (2)**.

Close **(3)** the window.



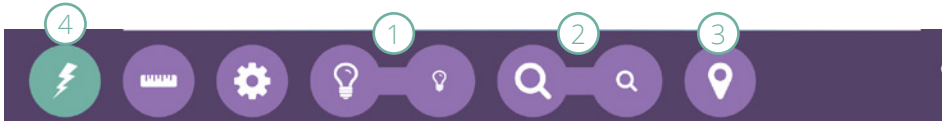
Camera controls

Brightness (1): Tap on the large symbol to increase and the small symbol to decrease the brightness. (K-50 HD, K-60 HD)

Zoom (2): Tap on the big symbol to zoom in and on the small symbol to zoom out.

Localization (3): The localization is switched off when the device is started. To turn it on, tap on Locate. The button is mint green when locating is switched on. (K-50 HD, K-60 HD)

Flash light (4): Tap on the flash in order to switch between flash light and permanent light.



Survey

Start survey

Position the camera at the beginning of the pipe. Tap on **Start of pipe (1)**.

The **Positioning (2)** is set to 0. If desired, enter a different value. Select the **Direction of the inspection (3)**.

Select if it is a **Downpipe** or a **Horizontal pipe (4)**.

Tap **Photo (5)** to save a picture for the reports and tap **Delete (6)** to remove it.

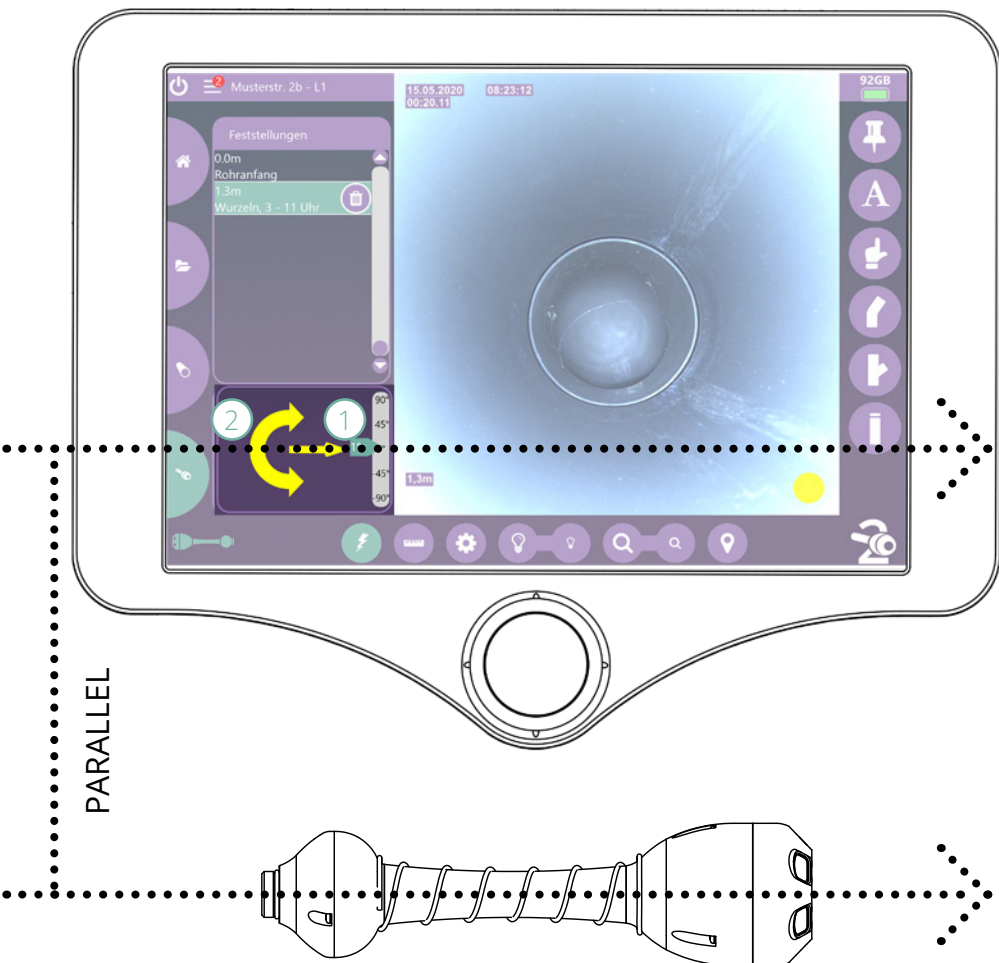
Confirm with **OK (7)**. Recording starts.



Align camera

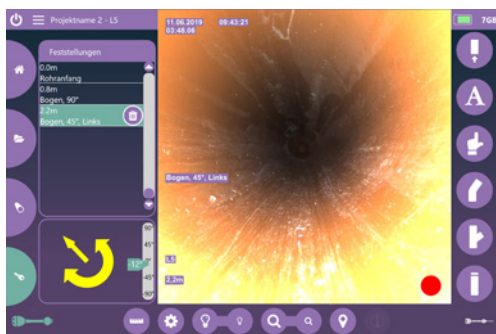
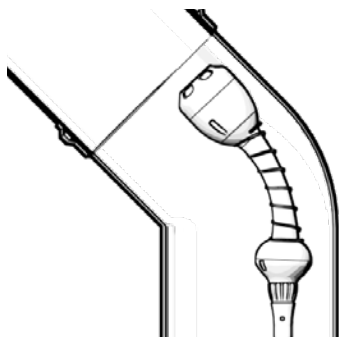
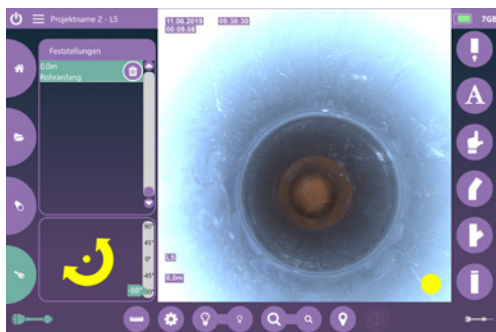
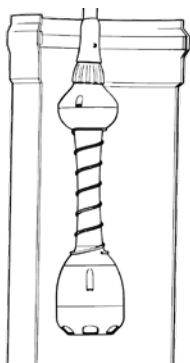
The **yellow arrow (1)** indicates the camera's viewing direction, making orientation much easier. At the beginning of the inspection, the yellow arrow must be aligned with the camera's viewing direction.

For example, position the camera parallel to the tablet as shown in the picture and rotate it using the **Double arrow (2)** until the single yellow arrow and the camera point in the same direction.



After this alignment, the software automatically displays the current viewing direction of the camera.

Examples:



Set a marker

This option is only available for can3D® type projects.

Tap on Set a **marker** (1). The evaluation of the condition is done in can3D®.

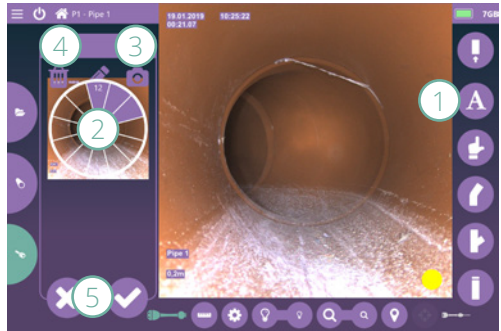


Enter text

Tap on **Text** (1) and enter the desired text using the on-screen keyboard.

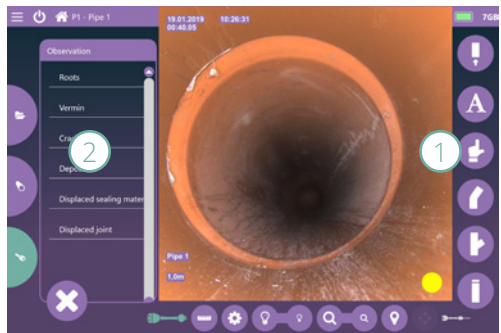
Mark the position on the **clock** (2) and save a **photo** (3) if necessary. To remove the photo, tap on **Delete** (4).

Tap OK (5).



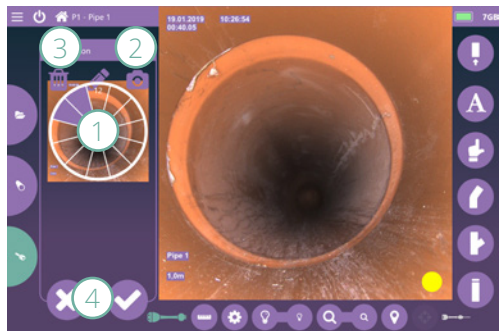
Enter observation (Damage catalog required)

Tap on **Observation** (1) and select from the list(s) (2).



Mark the position on the **clock** (1) and save a **photo** (2) if necessary. To remove the photo, tap on **Delete** (3).

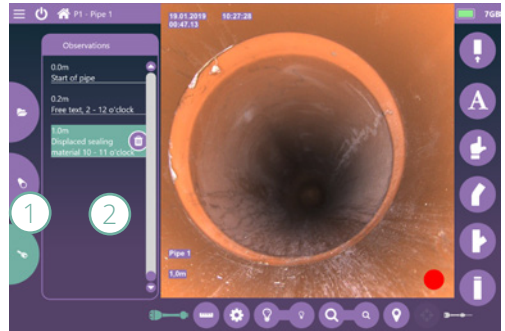
Tap OK (4).



Delete entry

Tap on the entry in the **observation list** (1) and tap on **Delete**. (2). A message appears indicating that the entry can only be deleted from the list but not from the video.

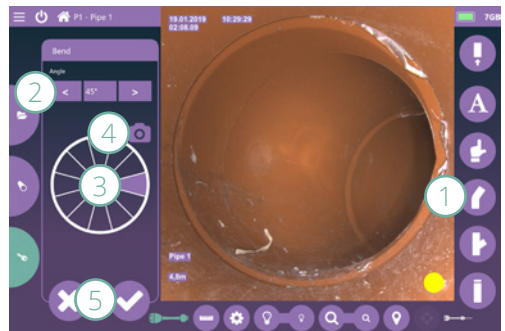
Tap on OK.



Enter bend

Tap on **Bend** (1). Adjust the **angle** (2) by tapping on the arrows. Mark the position on the **clock** (3) and save a **photo** (4) if necessary.

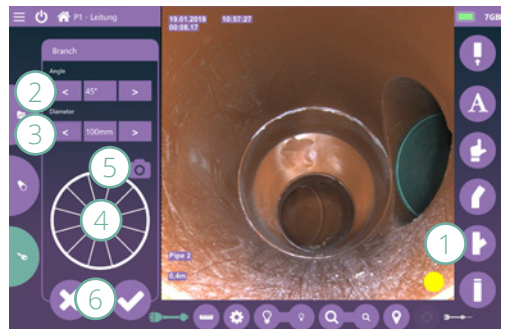
Tap on OK (5).



Enter branch

Tap on **Branch** (1). Determine the **angle** (2) and the **diameter** (3) by tapping on the arrows. Mark the position on the **clock** (3) and save a **photo** (5) if necessary.

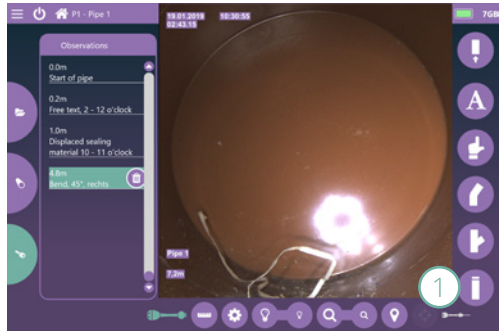
Tap on OK (5).



End inspection

Tap on **End of pipe (1)**. A message will appear indicating that it is not possible to resume recording later.

Confirm with OK.



Start and pause inspection manually

Tap on the **gray dot (1)** to start recording. The dot is red as long as the recording is running.

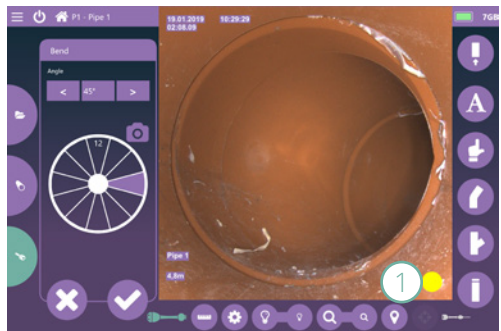
Tap on the **red dot (2)** to pause the recording. The dot is yellow as long as the recording is paused.

Tap on the yellow **dot (3)** to continue recording.



Auto-pause

If there is no activity for 10 seconds, recording pauses. This is indicated by the **yellow dot (1)**. The recording starts automatically when e.g. the reel is moved.



END OF OPERATION

Shut down the device via the software. Close the cover to protect the monitor. If the device is not put back into operation in a short time, the battery has to be removed.

TROUBLESHOOTING

If errors occur, you can use the following list to narrow down possible causes and, in most cases, solve the problem yourself.

MALFUNCTION	SOLUTION(S)
No camera image	Check K-50 HD plug connection Log the camera off and on again via the software Check power supply and replace battery if necessary
Device does not shut down immediately	Windows-Updates are running. Ensure power supply and wait until the device shuts down.
Device does not start up	Check power supply and insert or replace battery if necessary.

For other malfunctions, repair requests, spare part orders and other questions, please contact your supplier or our service team at:

Phone: +49 (0) 9382 9727 - 200

E-Mail: customer-service@kummert.de

CLEANING

Clean the device with a damp, clean cloth. Use the cloth to wrap the rod around. Clean the camera heads under running water.



NOTE

Risk of property damage!

Improper cleaning can lead to damage or even complete failure of the equipment.

- Do not use a high-pressure cleaner for cleaning.
- Close the connections with the supplied protective caps.
- Do not use aggressive cleaning agents.
- Do not clean the electronic parts under running water.

MAINTENANCE

For faultless and safe operation, it is necessary to carry out visual inspections and to keep the devices clean.

You can use the maintenance plan to look at the tasks that have to be performed at regular intervals.

	Before each use	After each use	During storage	After storage
Check if all seals are present and intact	x	x	x	x
Check if all screws are present and tight	x	x		x
Make sure that all connectors are clean and dry	x	x		
Make sure that the device is not damaged	x	x		x
Clean the device (see above. „Cleaning“)		x		

In case of damage and missing components, please contact certified service partner or the manufacturer.

DISPOSAL



NOTE

Danger to environment!

Incorrect disposal may cause dangers to the environment.

- Electrical waste, electronic components, lubricants and other substances may only be disposed of by certified specialist companies.
 - When in doubt, ask for information on environmentally safe disposal at your local authorities or specific waste management companies.
-

Once the device has reached the end of its useful life, it must be dismantled and disposed of in an environmentally responsible manner.

Disposal and Take-Back



This device is subject to the provisions of the Electrical and Electronic Equipment Act (ElektroG). It must not be disposed of with household waste.

Take-back of old devices

The Kummert Group offers to take back your used devices. Please contact our customer service to arrange the return.

Return address:

Kummert GmbH
Albert-Einstein-Straße 8
D - 97447 Gerolzhofen

Note: You are responsible for the transport costs of the old device to our facility.
Alternative disposal options

Any batteries or rechargeable batteries contained in the device must be removed prior to disposal and disposed of separately. You can dispose of the device in the following ways:

- At municipal collection points for waste electrical and electronic equipment
 - At retailers obligated to take back devices (in accordance with ElektroG)
 - At certified waste disposal companies
-



NOTE

Observe data protection and data security!

- Ensure that all necessary data has been backed up before disposal.
 - Remove all personal data from the device.
-

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DE Vertrieb durch EN Distributor

