



**BEDIENUNGSANLEITUNG**

easyTab

DE

**INSTRUCTION MANUAL**

easyTab

EN

# EN

## English

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© Kummert GmbH

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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.

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### **WARNING**

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

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### **CAUTION**

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


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### **NOTE**

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

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 **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. A Profi HD is required to operate the device.

## 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**

#### **Rechargeable battery!**

The device has an integrated battery in the base and the control panel whose 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

### Magnetic parts!

The device contains magnetic parts at the connection between the base and the control panel and between the base and the screen holder.

- Make sure that there are no metallic particles on the magnetic parts before connecting them.
  - Keep credit cards, magnetic storage media and magnetically sensitive units away from this device.
- 

## 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:

- easyTab
- USB thumb drive
- Manual

### Packaging

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.

# PRODUCT DESCRIPTION

## Brief description

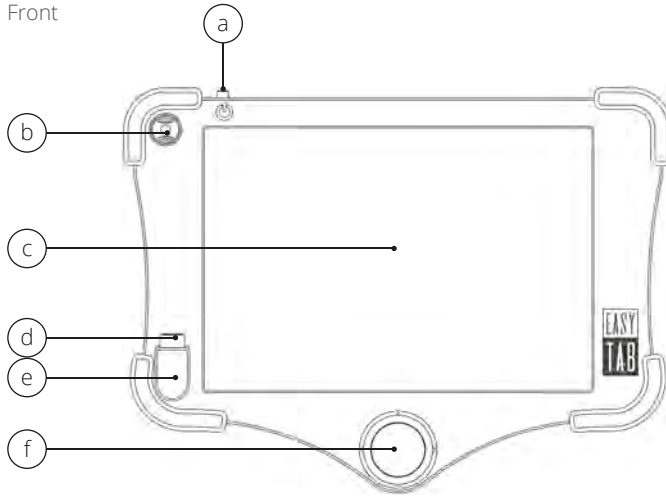
A Profi HD is required to operate the device. The combination of both forms a basic unit for the inspection of pipelines. For this purpose it is connected to a camera by means of a reel. The device is used to control the connected camera and to record the condition of the inspected pipe.

## Specifications

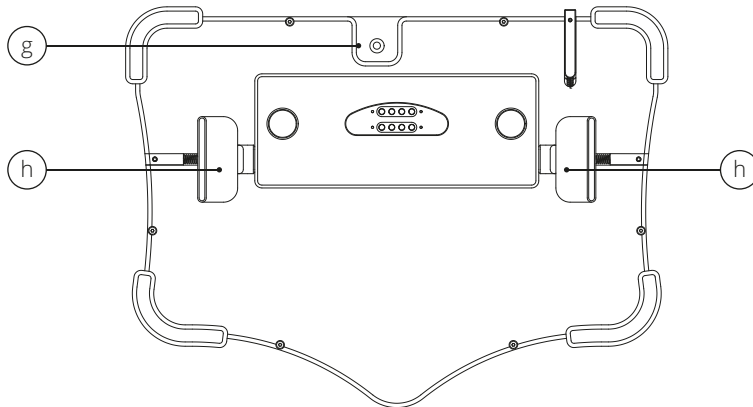
Power supply	20-36 V DC, 2,0A
Protection category	IP54
Display	PixelSense™ display (12.3 inch)
Processor	Intel® DualCore i5 2,7 GHz
Internal memory	128 GB SSD hard disk
Removable media	USB 3.0 port
Image recording	JPEG
Video recording	MPEG4 H.264
Operating temperature	0° to 35°
Storage temperature	-10° to 40°

## Components

Front



Back



- a** On/off switch
- b** Toggle switch
- c** PixelSense Display
- d** USB 3.0 Port

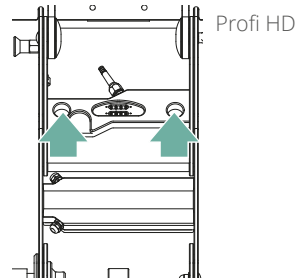
- e** LED
- f** 3D joystick
- g** Tablet-Camera
- h** Latches



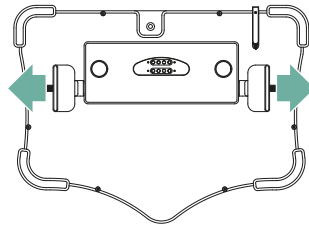
## Removing and inserting the control panel

A Profi HD is required to operate the easyTab. The tab is inserted into the Profi HD.

To insert the easyTab, hold the it on both sides with both hands. Pull the purple latches on the back with your fingers outwards. Insert the easyTab and make sure that it snaps into the corresponding slots. Slide the latches back slowly. Check that the easyTab is securely attached before releasing it.



In order to remove the easyTab, hold the it on both sides with both hands. Pull the purple latches on the back with your fingers outwards. Lift the easyTab off. Slide the latches back slowly.

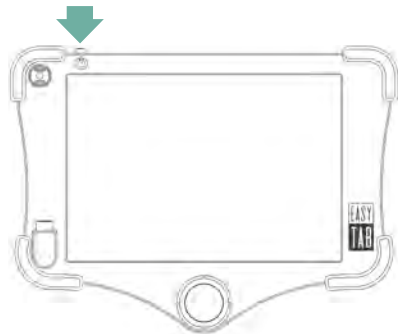


## OPERATION

The entire system is commissioned and operated via the easyTab. Read through the operating instructions of the other components during commissioning.

### Switch on easyTab

Press the ON button. Wait until the device has powered up and the software has started.



## Power supply

Both the base and the easyTab are equipped with a battery, so that the easyTab can be operated independently of the base and a power source. If the base and the easyTab are connected to each other during mains operations, both batteries are being charged. If the base and the easyTab are connected to each other and are in battery operation, the easyTab is charged by the battery of the base while the device is in operation.

To charge the easyTab from the basic battery when it is powered off, press the Load easyTab button (see manual Profi HD). The charging process continues for a certain period of time and then it is automatically aborted. To cancel the charging process manually, press the Load easyTab button for approx. 2 seconds.

The LED is on when the easyTab is powered – either from an external power source or from the base battery.

Ensure that the batteries are sufficiently charged before starting work. To charge the battery, connect the power plug of Profi HD to a suitable power source. The battery charge status can be checked at the software user interface.

A charging cable for the easyTab is available as an optional accessory (Art. 21206).



### NOTE

#### Risk of data loss!

Interruptions to the power supply disrupt the operation of the device and can lead to malfunctions and data loss.

- Ensure that the battery has sufficient capacity or switch to mains operation.



### NOTE

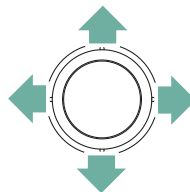
#### Risk of property damage!

- Batteries must be charged regularly to avoid full discharge. This
  - applies also when the device is not in operation.
  - Make sure that the battery is charged regularly, at least once a month.
-

## Operating the camera

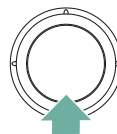
### Move image or camera

Move the 3D-Joystick up, down, left or right.



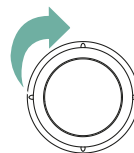
### Align image/ camera

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.



## Operating the PushBuddy

### Controlling the PushBuddy

Move the mini joystick forward to move the rod forward and backward to pull the rod back.



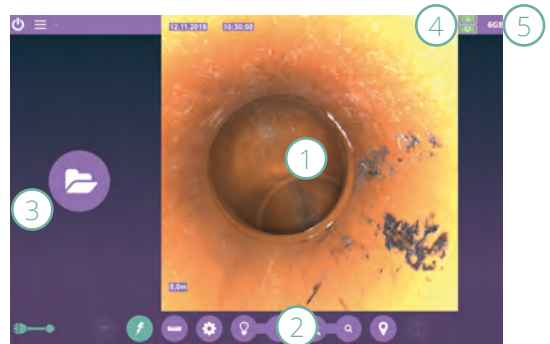
# SOFTWARE

## Startup screen

The **live image** (1) of the connected camera and the **controls** (2) are displayed.

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

In the top bar the **battery status** (4) and the available **storage space** (5) are displayed.



## 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 select a removable disk and import a damage catalog.

4: The damage catalog editor will open.

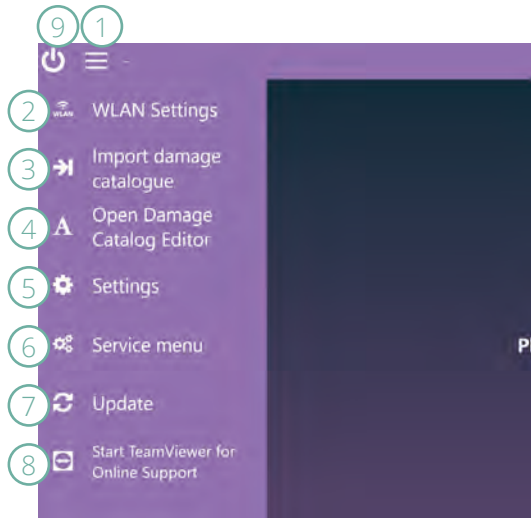
5: A window opens where different settings can be made.

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

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

8: TeamViewer window will open.

9: After confirmation, the device is shut down.



## Settings

In order to make different settings, open the **menu** (1) and tap on **settings** (2).

### Edit date and time

For editing the date tap on the **calender icon** (3). Select the desired date. For editing time tap on hours, minutes or seconds and change the numbers via the **arrows** (4).

### Select frequency of transmitter

Tap on the box displaying the current **value** (5) and select the needed frequency from the list.

### Switch language

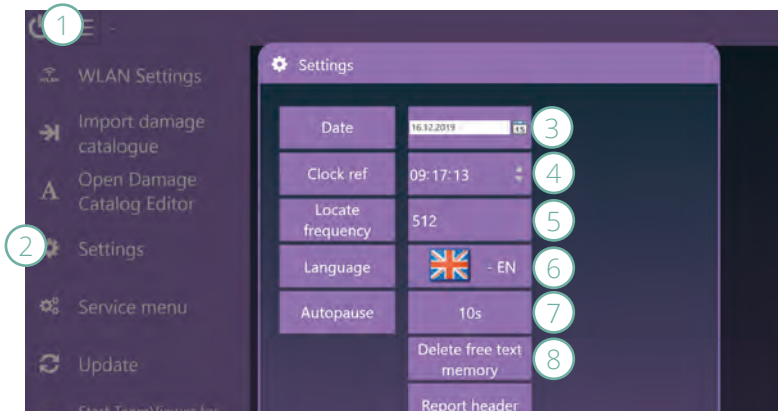
Tap on the box **language** (6). A new window with a list opens. Select a language and tap on OK. The software has to be restarted. A new window shows up. Tap on OK and wait until the software restarts.

### Autopause

If there is no activity for the set period, the video recording is paused. Click on **Autopause** (7) and enter the desired value.

### Text memory

The software features a text memory. Entries are saved and are available as suggestions the next time. For deleting all entries in the text memory tap on **Delete text memory** (8).

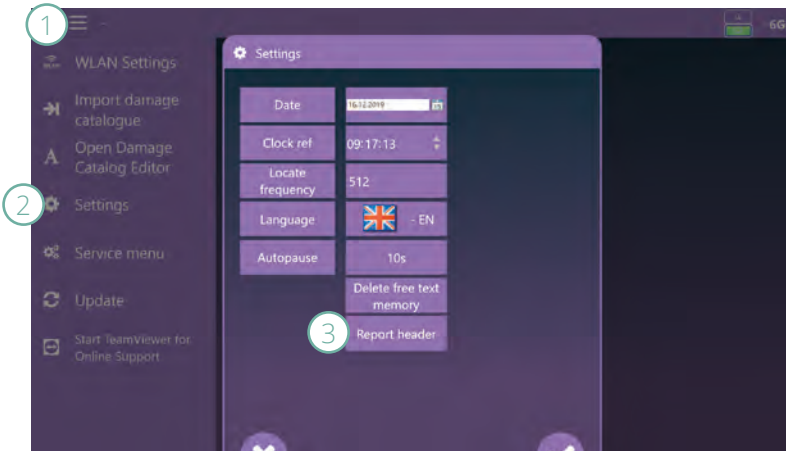


## Reports

After completing an inspection, a report is saved as pdf file to the USB drive. This happens automatically and does not require any action of the user.

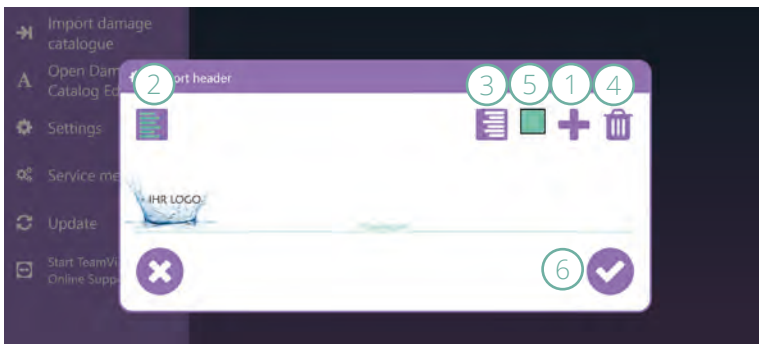
### Design report header

In order to design the report header open the menu (1) and tap on settings (2). Select the option report header (3).



Tap on Add (1) to import a logo. Select if the logo is displayed on the left (2) or right (3) side. In order to remove the logo tap on Delete (4).

Select a color for the borders and the title. Therefore tap on color (5) and select a 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.

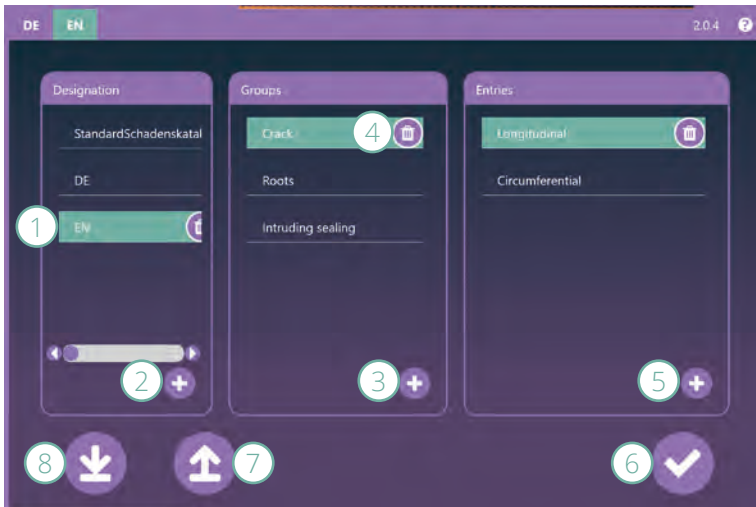
Observations are divided into groups and entries. The group is the main term, where several entries can be assigned.

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.



## Cameras operating elements

### Using cameras

To use a camera, it must be connected to the Profi HD via a reel and the Profi HD to the easyTab. For further information on this, please refer to the respective instruction manuals.

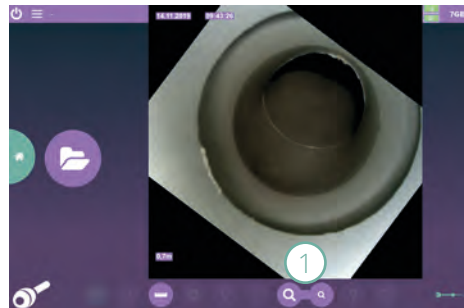
To start the camera, click on the **camera icon (1)**. Wait until the camera initialization message disappears. To turn the camera off click on the camera icon again.



### K-28 HD

After registering the camera, the live image appears. To provide the orientation the image will be rotated.

To zoom in or out, tap on the large or the small **magnifier (1)**.



### K-50 HD

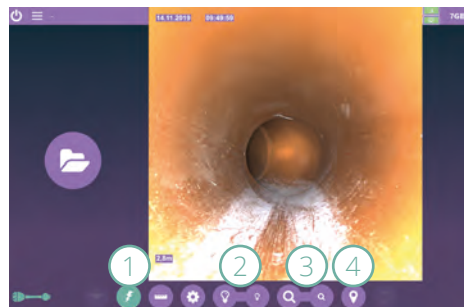
The flash light is automatically activated after the start. The image of the K-50 HD can be virtually rotated and panned. Use the 3D joystick to do this.

To turn the flash off or on, tap on the **flash icon (1)**. For best illumination during the survey, the flash must be on.

To adjust the brightness, tap on the large or the small **light bulb (2)**.

To zoom in or out, tap on the large or the small **magnifier (3)**.

Tap on the **locate icon (4)** to turn on or off the locating transmitter.





## K-60 HD

The flash light is automatically activated after the start. The camera can be rotated and panned. Use the 3D joystick to do this. With the integrated laser, the diameter of the inspected pipe can be measured at any time.

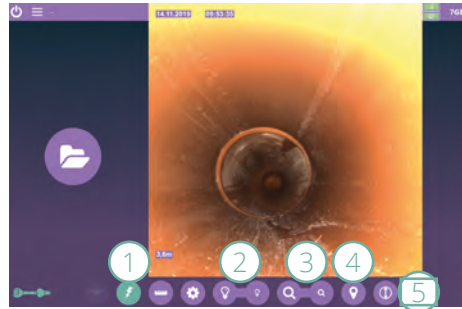
To turn the flash off or on, click on the **lightning icon (1)**. For best illumination during the survey, the flash must be on.

To adjust the brightness, tap on the large or the small **light bulb (2)**.

To zoom in or out, tap on the large or the small **magnifier (3)**.

Tap the **locate icon (4)** to turn on or off the locating transmitter.

Before you start the laser measurement, make sure that the camera is centered and straight in the pipe. Tap on **measurement (5)**.



Wait until the measurement is completed. If necessary, the measurement can be **repeated (1)**. If a **centering trolley (2)** is used, select the appropriate field.

The **measurement result (3)** is displayed.

Select the **diameter (4)** and confirm with **OK (5)**.

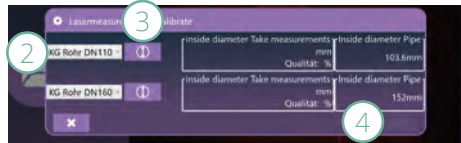


Carry out a check measurement, before using it for the first time. Use a pipe with a known size. If strong deviations occur, the laser measurement must be recalibrated.

This requires two PVC or similar pipe pieces with diameters as different as possible (recommended: 110mm, 160mm).

In order to do this, start the measurement and tap on **Calibrate** (1).

Place the camera in the first pipe and select the **diameter** (2). Tap on the **measurement symbol** (3). Repeat the procedure with the second pipe and click on OK (4).



## CamFlex® HD

The flash light is automatically activated after the start. The camera is bendable in itself and can be moved around bends and in branches (against flow direction). In order to do this, use the 3D joystick.

To turn the flash off or on, click the **flash icon** (1). For best illumination during the survey, the flash must be on.

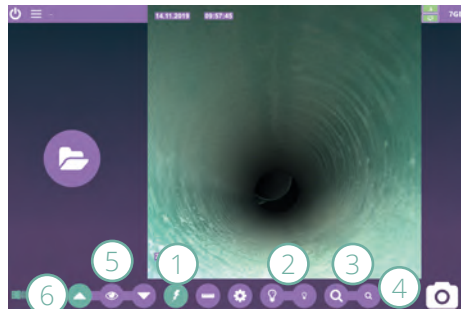
To adjust the brightness, tap on the large or the small **light bulb** (2).

To zoom in or out, tap on the large or the small **magnifier** (3).

Tap on the **locate icon** (4) to turn on or off the locating transmitter.

Activate the **View mode** (5) to examine details such as damage or pipe connections. Only the front joint of the CamFlex® HD moves. The rear joint remains still.

When retracting the camera, the release mode must be activated to prevent the camera from jamming. To activate or deactivate it, tap on the **release mode icon** (6). The mode is automatically activated at the end of the pipe.



## Camera settings

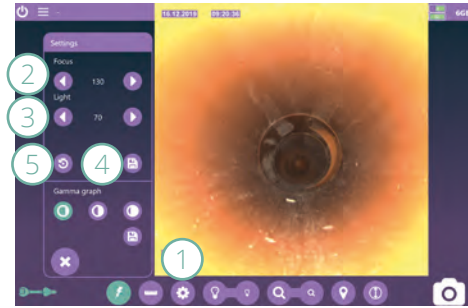
All HD cameras settings can be adjusted except the K-28 HD. Tap on **Settings** (1).

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

To change the **brightness** (3), change the value using the arrow keys until the desired brightness is reached.

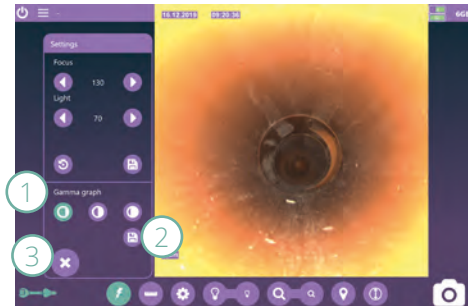
This setting should only be changed if the light adjustment via the light bulb symbols does not provide satisfactory results.

Click on **save** (4). To revert the changes and return to the original settings, tap on **reset** (5).



To change the **gamma curve** (1), select one of the three symbols. To see the effect, tap on **save** (2).

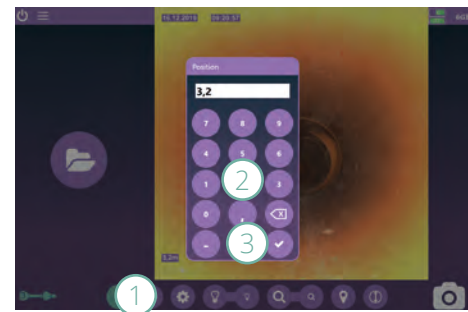
Close (3) the window.



## 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).



## Projects

### Create project

To create a project, tap on **Project** (1) and then on **New** (2). Enter a name. If required, you can define further **details** (3).

### Select project

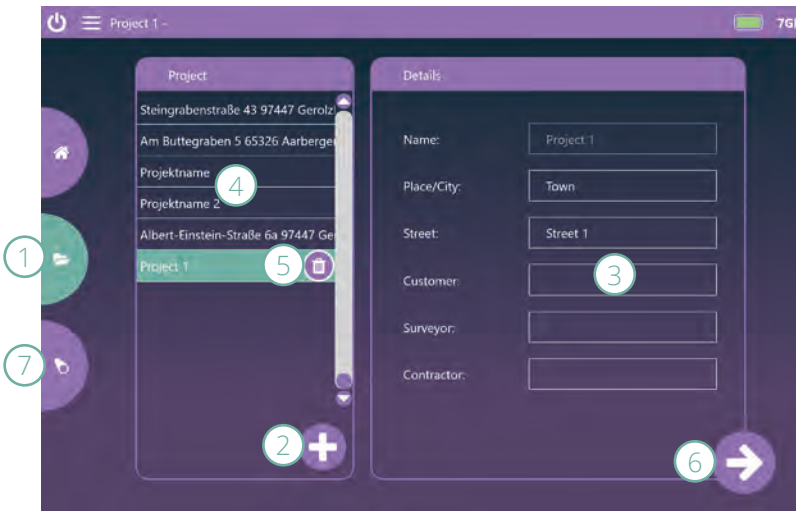
In order to view or continue a project, you first have to select it. Tap **Project** (1) and on the desired project in the **list** (4).

### 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 **details** (2).

### Select pipe

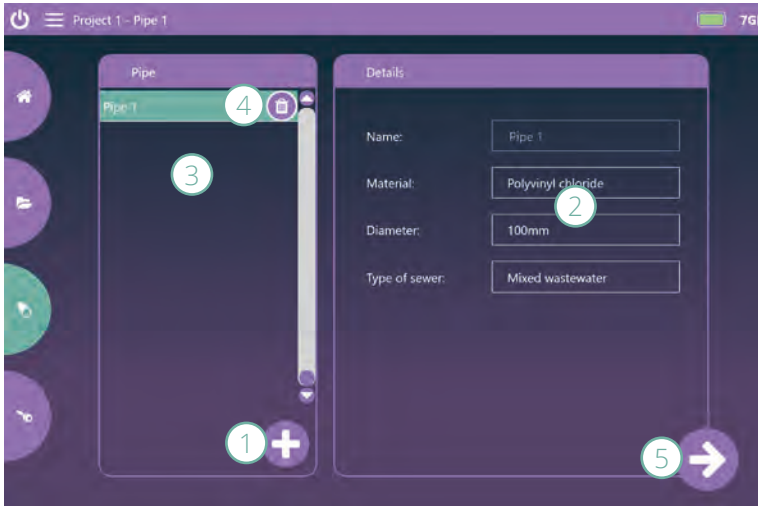
To view a recording or edit the pipe, you first have to select it. Tap on the desired pipe in the list (3).

### Delete pipe

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

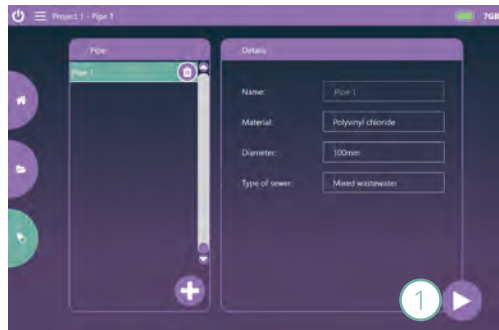
### Create survey

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



### Play video

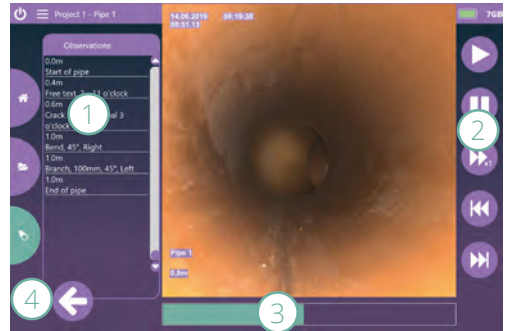
Select the desired pipe from the list and tap on **Play** (1) (if there is a video, the Play button will appear instead of the button Next).



The **observation list (1)** appears on the left hand side. The **playback control buttons (2)** are displayed on the right hand side.

The **bar (3)** indicates the current position in the video. You can tap on a certain position oder drag it back and forth to move in the video.

Tap on **back (4)** to get to the pipe administration.



## Survey

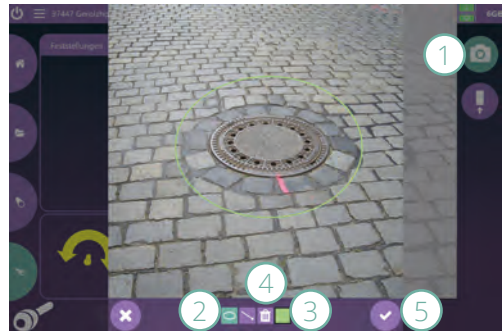
### Take a photo of surroundings

You can use the easyTab camera to take photos of the surroundings. These are saved in the main folder of the project.

Tap on **take a photo (1)**. The camera of the easyTab is activated and a new window opens. Tap on take a **photo again (1)**.

If desired, a marker can be used to the photo image. Select the **shape (2)** and the **color (3)** and apply the marker on the image. To erase the marker, tap on **delete (4)**.

Tap on **OK (5)**.



## Start survey

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

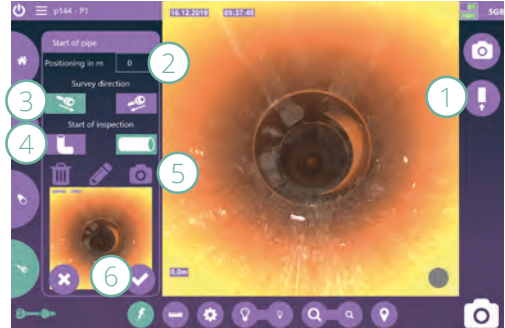
The **position** (2) is set to 0. Any desired value can be entered.

Select the direction of survey (3).

Define if the start is a **down pipe** or **horizontal pipe** (4).

Tap on **Photo** (5) to save an image for the report.

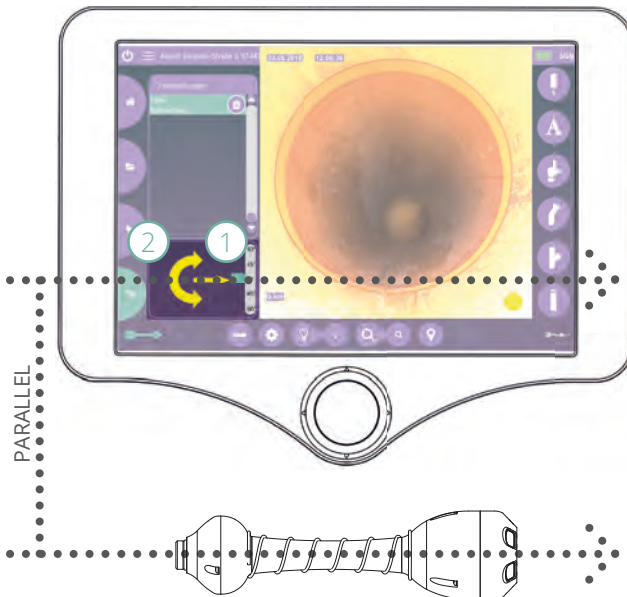
Tap on **OK** (6). Recording starts.



## Adjust camera

The **yellow arrow** (1) indicates the direction of view of the camera and thus allows for orientation. At the beginning of the survey the arrow has to be adjusted to the direction of view of the camera once.

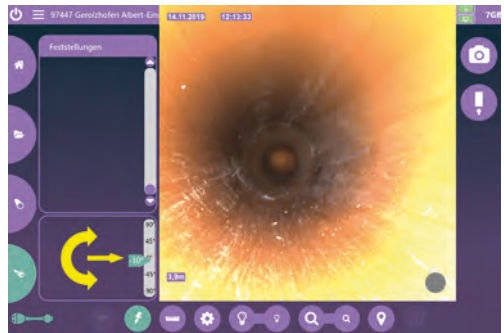
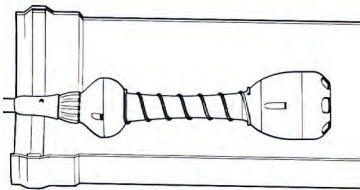
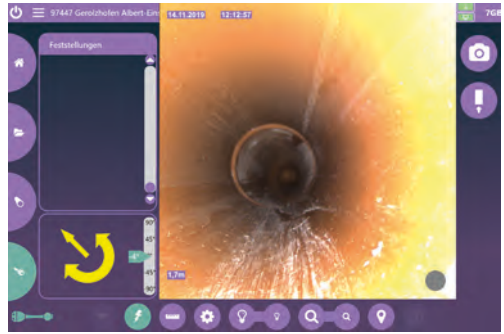
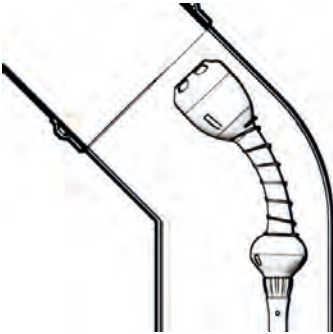
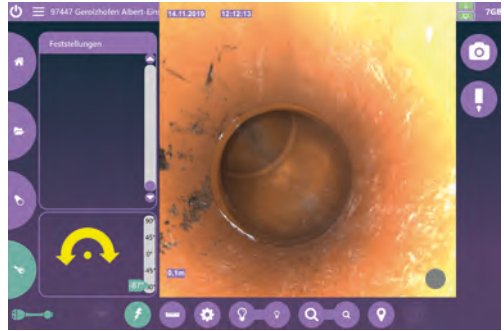
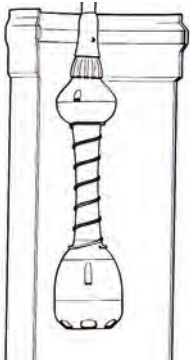
Hold the camera e.g. next to the operating panel and use the **double arrow** (2) to turn the arrow until it and the camera point at the same direction.



After the adjustment the software displays the correct direction of view of the camera.



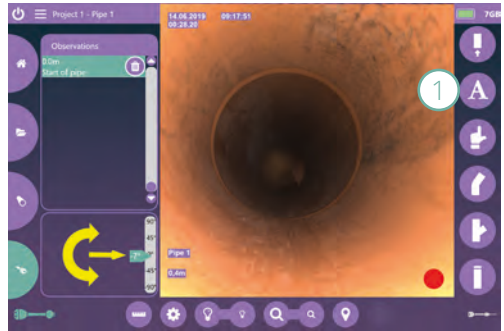
Examples:





## Enter text

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



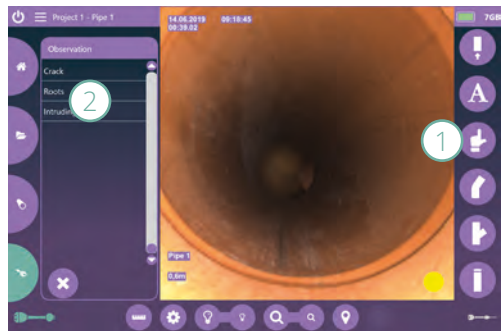
Mark the position on the clock (1) and save a photo (2) if necessary. To remove the photo, tap on Delete (3). In order to make the photo with circles or arrows tap on mark (4).

Tap OK (5).



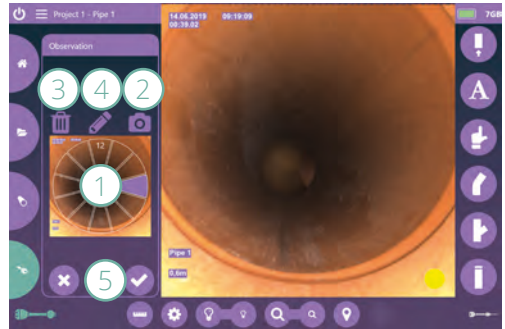
## Enter observation (Damage catalog required)

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). In order to make the photo with circles or arrows tap on **mark** (4).

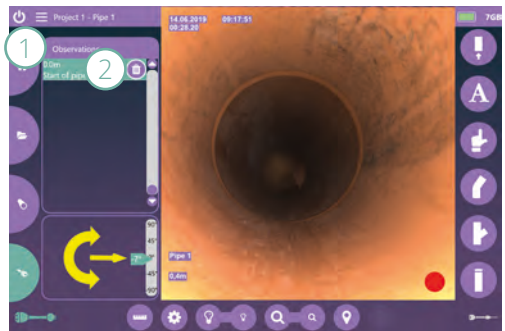
Tap OK (5).



### 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.

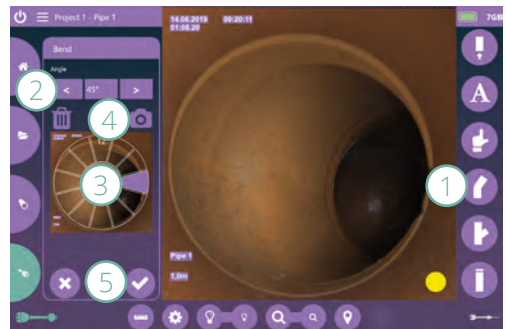
Tap on OK.



### 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.

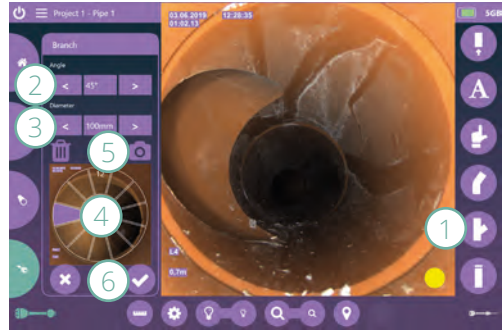
Tap on OK (5).



## Enter branch

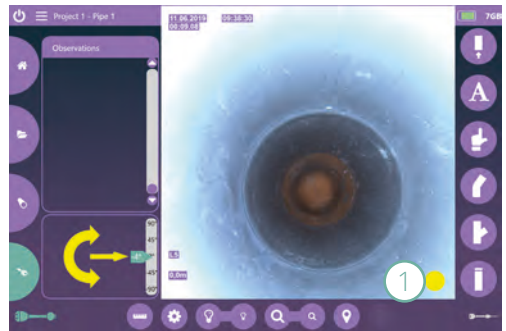
Tap on **Branch** (1). Determine the **angle** (2) and the **diameter** (3) by tapping on the arrows. Mark the position on the **clock** (3) and save a **photo** (5) if necessary.

Tap on **OK** (6).



## 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.

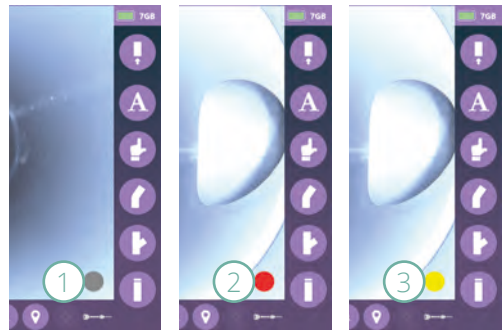


## Start and pause inspection manually

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.

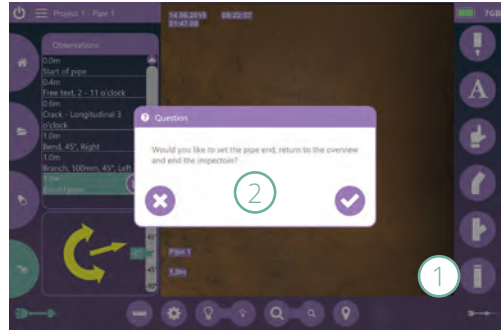
Tap on the **yellow dot** (3) to continue recording.



## 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.



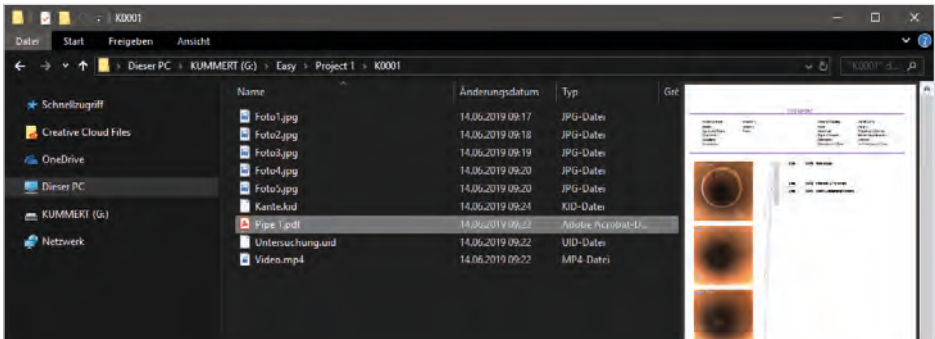
## END OF OPERATION

Shut down the device via the software.

## FURTHER PROCESSING

### View results

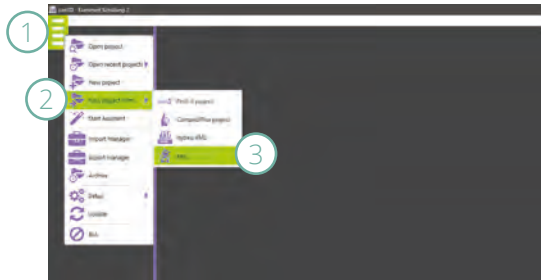
Remove the USB drive from Easy HD and connect it to a computer. Open the Explorer there the USB drive. Open the folder Easy. There all projects are stored as single folders. In the project folder there are single folders for each individual pipe containing videos, images and reports.



## Import in can3D®

Remove the USB drive from Easy HD and connect it to a computer. Open can3D®.

Open the menu (1) and select New project from... (2). Click on Easy (3).



Select the USB drive (1) and click on the desired project (2).

Confirm with OK (3).



Define the Type of project (1).

Select a damage catalog and export interface (2). Enter all relevant information (3).

The project name (4) is created from the entries of street and town but can be overwritten.

Click on OK (5).



Wait until the import and the upload to the cloud are completed. Please find further information in the manual can3D®.



# 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)
Address date base is empty (only relevant for Austria and Switzerland)	Deactivate the address entry via the menu and settings Switch language via the menu
Message: Little storage space on the USB drive.	Remove not required files from the USB drive soon or have a USB drive with sufficient storage space available
Message: Not enough free space on the USB drive.	Remove not required files from the USB drive or have a USB drive with sufficient storage space available
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 - 710

E-Mail: [service@kummert.de](mailto:service@kummert.de)

## CLEANING

Clean the device with a damp, clean cloth.



### 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.

# DISPOSAL

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## **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.
- 

When the device has reached the end of its useful life, it has to be disassembled and disposed of in an environmentally safe manner.

Unless both parties agreed otherwise on recycling or disposal, all components must be properly dismantled and recycled by the owner as follows:

- Scrap any metal parts.
- Recycle any plastic parts in the appropriate manner.
- Dispose of all other components separately depending on the nature of material.

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