# INSTRUCTION MANUAL


## Software
## **RiVision**


 

**Imprint**

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## Content





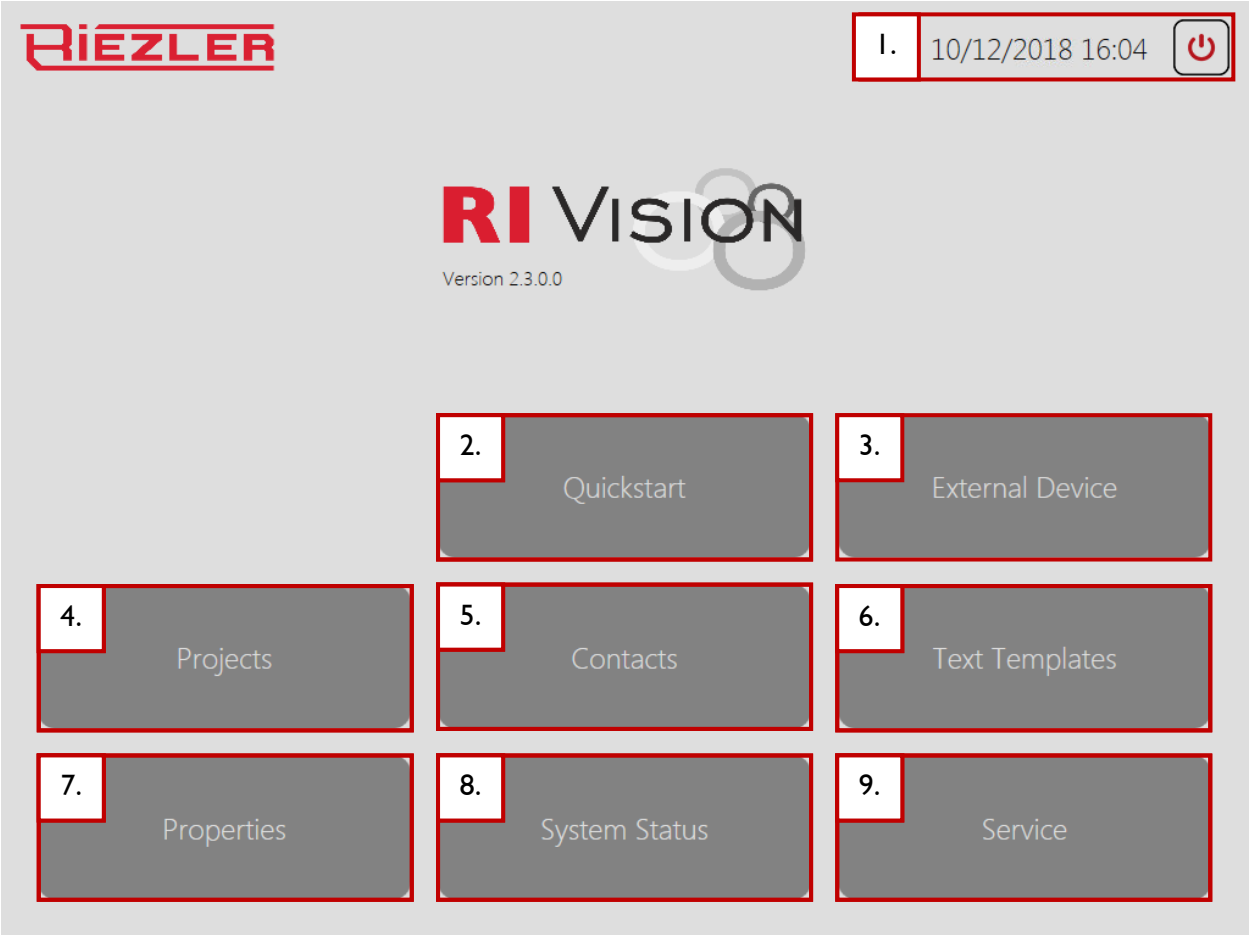
 

# 1. RIVISION

Our software is designed for an ergonomically use with your fingers or a stylus. The handling behaves just like the one of a smartphone or tablet. Touch with your finger / stylus on the touchscreen to select a function or button.

## 1.1. Home screen




1. Power-off button
The button to power off the system is located on the top left.

2. Quickstart
Jumps directly to the inspection screen
(see page 19)

3. External device
Shows several types of files on external devices
(see page 60)

4. Projects
Organize your projects and the corresponding sections
(see page 25)

5. Contacts
Manage your customers, clients and project leaders
(see page 50)

6. Text templates
Text templates can be prepared for inspections without usage of a country specific damage catalogue
(see page 53)

7. Properties
Configure your RiVision software according to your demands
(see page 8)

8. System status
Offers an overview over the hardware of the control unit and connected devices
(see page 58)

9. Service
Password protected area for maintenance purpose only
(see page 61)

## 1.2. Standard control elements

To make the usage of the software as visceral as possible some control elements occur on several places in RiVision. Here is a short overview over the most important ones:

| Control element | Label | Function |
|---|---|---|
|  | OK (top left corner) | **Saves** the changes you made and brings you back to the previous menu level. |
|  | Cancel (top left corner) | **Discards** the changes you made and brings you back to the previous menu level. |
|  | Back | Brings you **back** to the previous menu level. |
|  | On-screen keyboard | Opens the **on-screen keyboard** for the input field left of the icon. |
|  | Delete input field | **Deletes** the content of the input field left of the icon. |
|  | Approve (on-screen keyboard) | **Approves** the keyboard input. |
|  | Cancel (on-screen keyboard) | **Cancels** the keyboard input without saving. |

## 1.3. On-screen keyboard

Next to an input field you find the on-screen keyboard button. That activates the on-screen keyboard and jumps directly in the input mode. As soon as you press the approve-button your text-input is applied. If you like to discard the text-input press the cancel button.



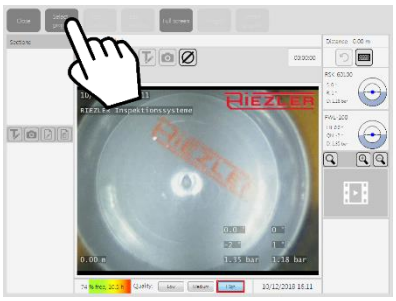
 

## 2. RIVISION: QUICK ACCESS

**1.**

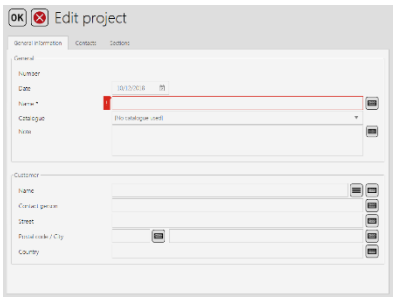

Press Quickstart.
There you see the current camera picture.

**2.**



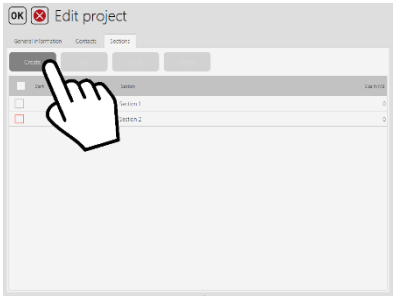
To start recording press „Select project“.

**3.**



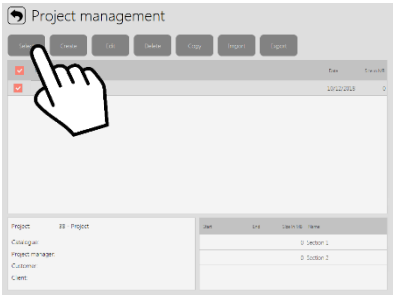

If no projects exist yet, create one via the „Create“-button.

**4.**



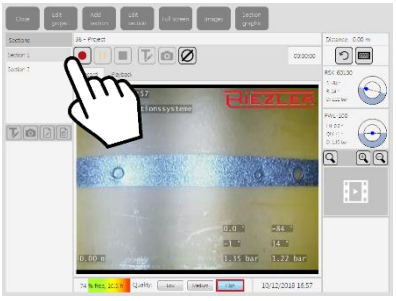

Add one or more sections to your project.

**5.**




„Select“ the just created project in the project management.

**6.**

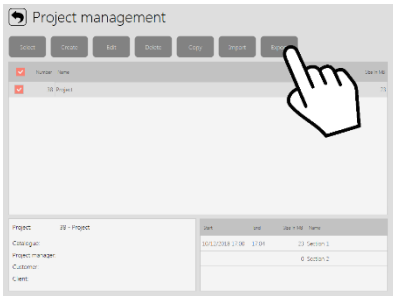


Mark a section in the section overview and start the record.

**7.**

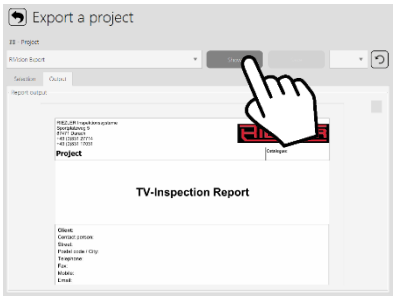
Capture observations with or without picture.

**8.**




After the record is done, choose „Export“ in the project management.

**9.**




By pressing „Show“ the standard report gets created.

**HINT**

**Quick access**

This quick access should give you a fast overview how to make an inspection including the standard report.
On the following pages all functions will be explained in detail. We recommend you to take a time to read it; thereby you will be able to control RiVision perfectly in no time.



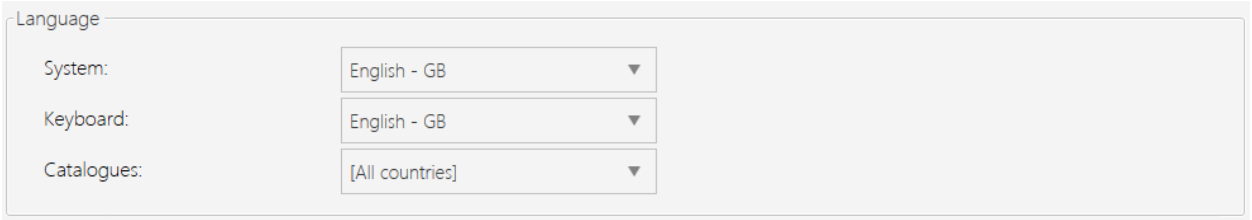
 

# 3. RIVISION: PROPERTIES

In the properties menu all basic settings can be made to configure the system to your needs. Over the tabs in the top area you reach the particular categories.

## 3.1. System

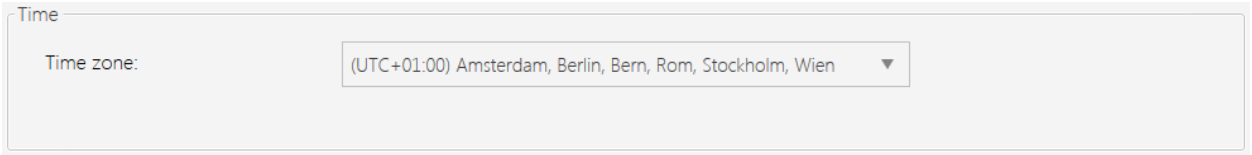

The measuring units for temperature, distance, inclination and pressure can be adjusted to country-specific standards. The chosen units will later be shown in the video picture and on used for the reports. The laser reference value can be used to calibrate the parallel lasers.




Here you can change the language of the system and the keyboard.

When you change the system language you have to restart the control unit. After the restart the system appears in the chosen language.

The catalogue selection helps you to only show the relevant damage catalogues for your country.

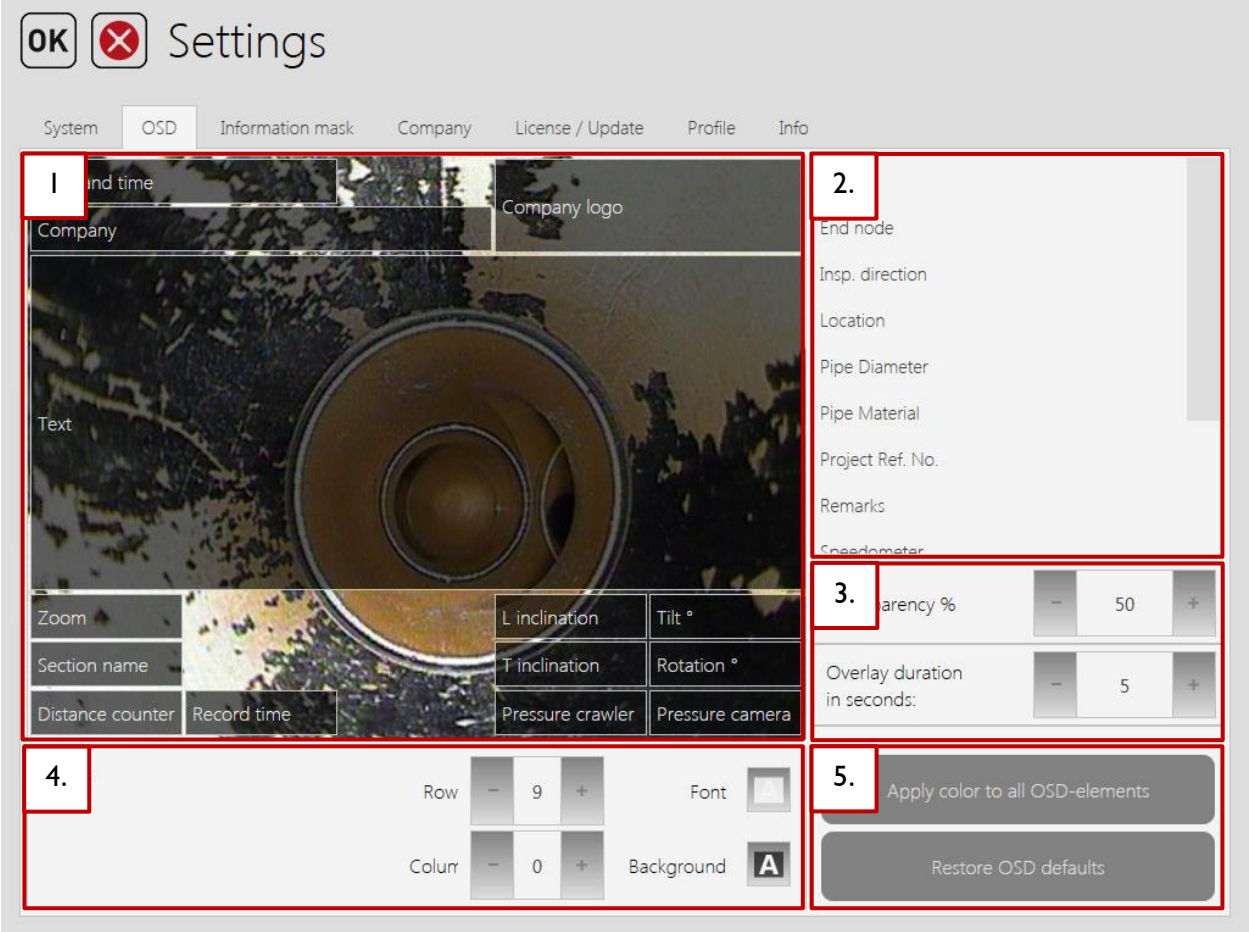



Here you can set your time zone.

## 3.2. OSD

OSD stands for on-screen-display. In this menu item you can position and colour all overlays in accordance with your demands and wishes.




1. Thumbnail
The thumbnail shows all overlays as they will be shown in the live-image.

2. Available OSD-elements
Unused but available OSD elements are listed here.

3. Transparency and time settings
Set the transparency value for all OSD elements and how long notes will be displayed.

4. Configuration section
Position, font- and background-colour for every individual OSD-element can be set here.

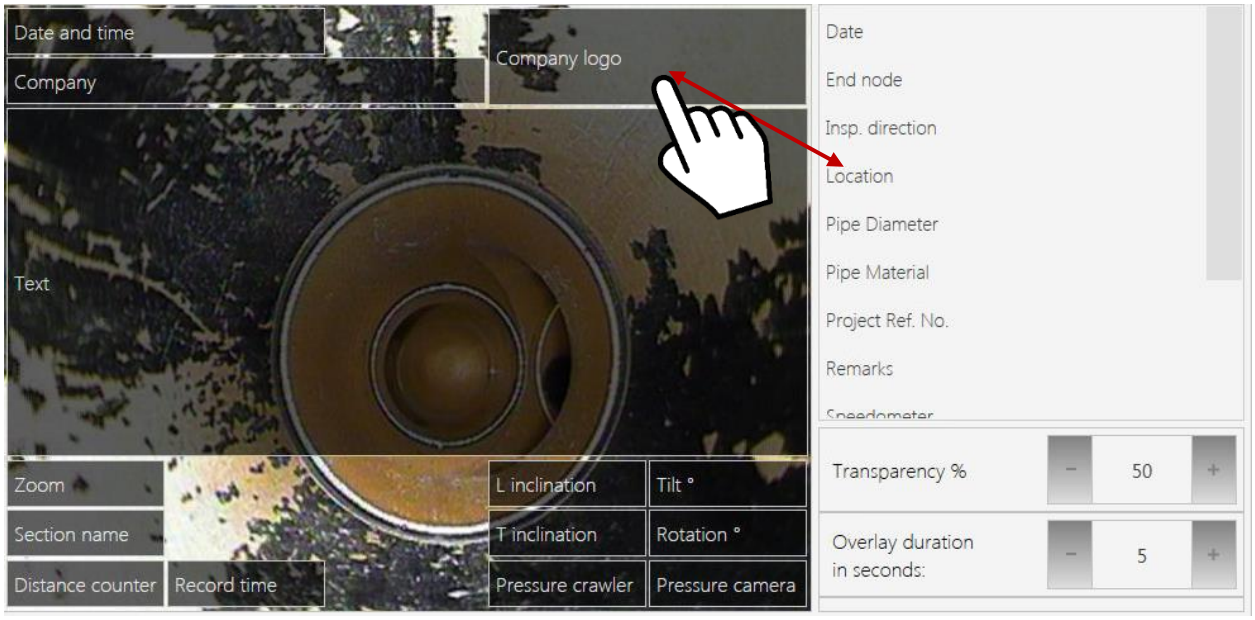
5. Set standards
The button „Set colours as standard“ sets the current colours of the selected OSD-element for all elements.
“Restore defaults” resets the OSD-settings (position and colour of all elements) back to default as seen on picture above.

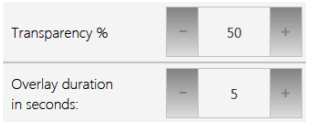
## 3.2.1. Add / remove OSD-elements

If you don't need one of the standardly set OSD-elements you can remove it by pulling it into the „Available OSD-elements"-list on the right.

In the opposite case it works just the same: Pull one of the „Available OSD-elements" onto the thumbnail if you want it to appear in the image. You can set its position depending on where you pull it.



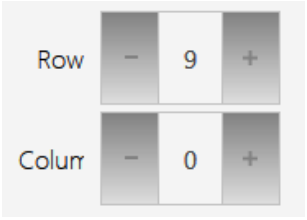

## 3.2.2. Transparency and time settings




The transparency value determines how bold the background colour of the OSD-elements are set. The lower the value, the bolder the backgrounds get. This increases the readability of the elements, but impairs the visibility of the camera picture.
On the other hand high transparency values are responsible for weaker background colours. This leads to a better view on the camera picture, but may make it harder to read the OSD-elements. We recommend the preset value of 50 percent.

The time value lets you control for how long notes will be shown in the video picture.

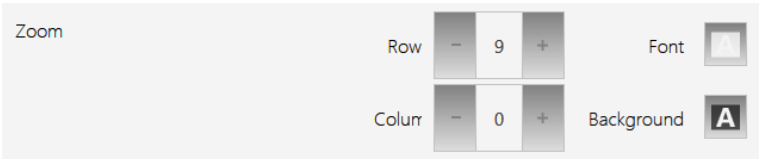
## 3.2.3. Change OSD-element's position




The elements can directly be pulled onto the desired position in the thumbnail. As explained in previous point 3.2.1.
Alternative to that you can set the exact row- and column-number for every individuel OSD-element. Select one element in the thumbnail and then change the value for row and column over the plus- and minus-buttons. The changes are shown immediately in the thumbnail.

## 3.2.4. Change OSD-element's colour




You can change the colour of every OSD-element individually. Select the OSD-element on the thumbnail that you want to colour. Now you can change the font- and background-colour of the element in the configuration section.
If you want to adopt the colour-setting for all OSD-elements press „Set colours as default".

## 3.2.5. Set standard

The button „Set colours as default" lets you adopt the colour-scheme of the currently selected OSD-element for all elements. In the configuration section the currently selected OSD-element is shown on the left side.

With the „Restore defaults"-button you can restore the factory settings of all OSD-elements.

**HINT**

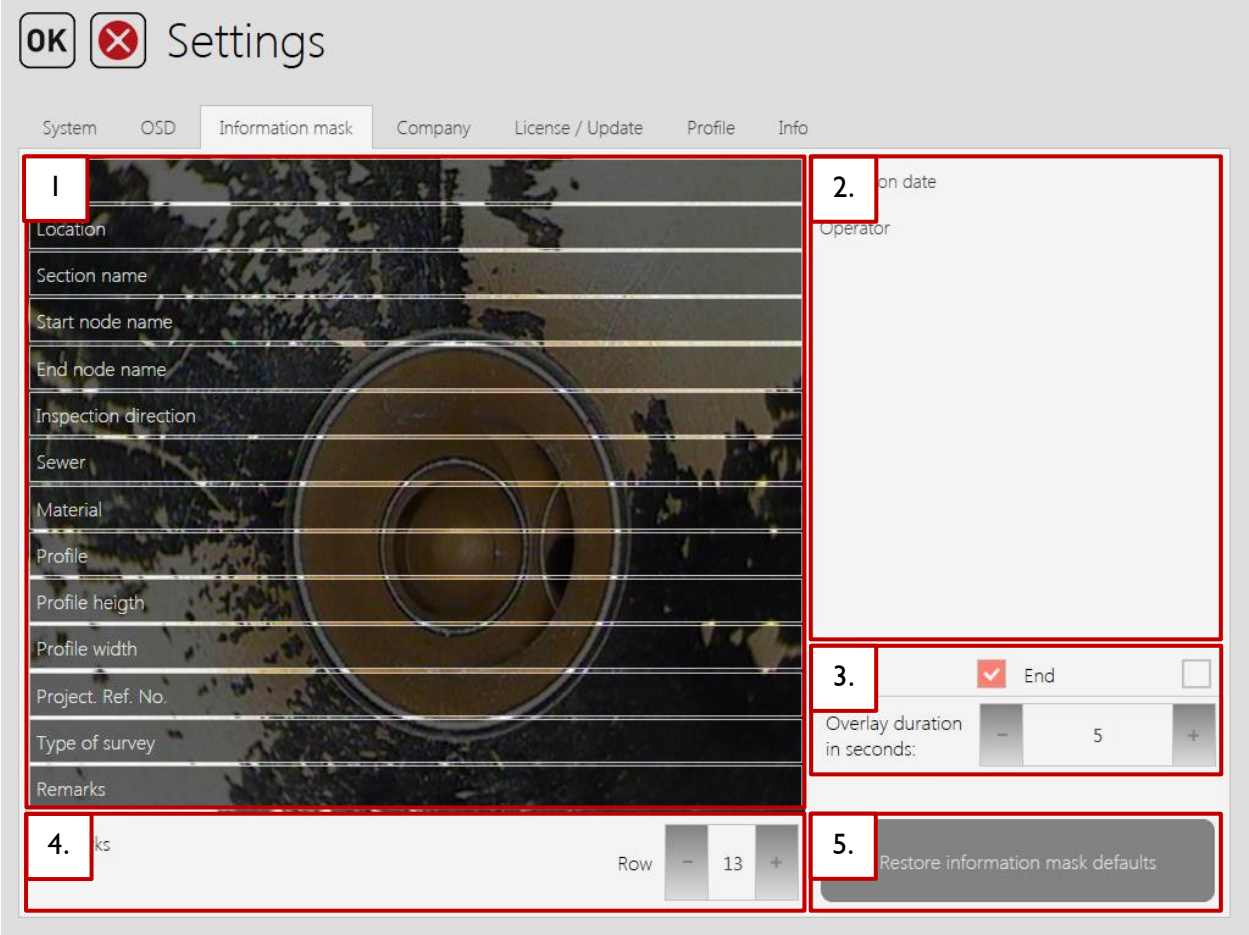
**Overlapping OSD-elements**

If two or more OSD-elements overlap each other while you want to confirm the OSD-setting changes with the OK-button you'll get a warning notice.
Position the OSD-elements so they don't overlap anymore and confirm with OK.

## 3.3. Information mask

RiVision allows you to show an information mask with important information about sections and the project. By default, this option is only set to be shown at the start of an inspection.




1. Thumbnail
The thumbnail shows all overlays as they will also be shown in the live-image before / after each inspection – if the information mask is activated.

2. Available OSD-elements
Unused but available OSD elements are listed here.

3. Display and time settings
Set if and for how long the mask will be shown at the beginning / end of an inspection.

4. Configuration section
Position, font- and background-colour for every individual OSD-element can be set here.

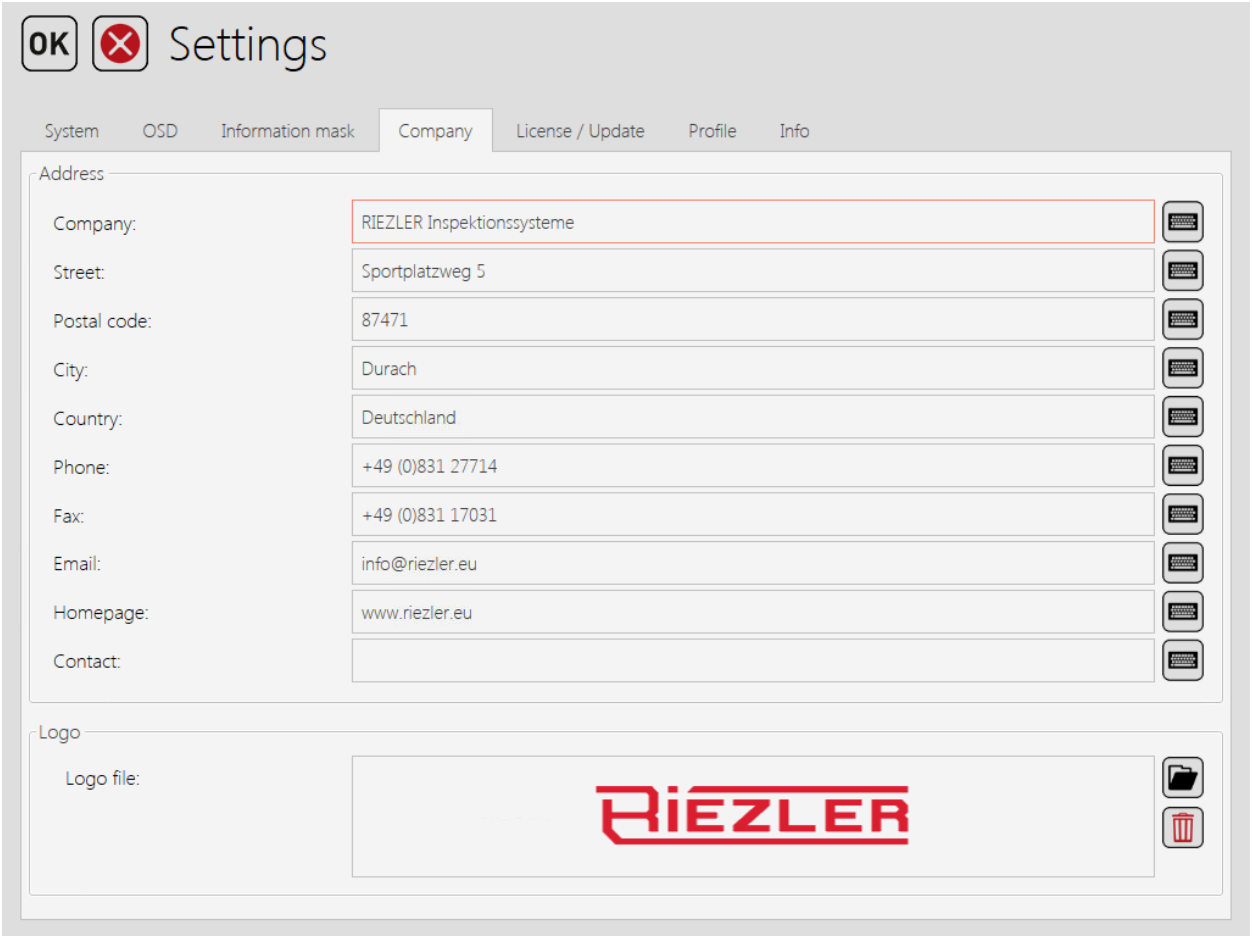
5. Reset to default
"Restore defaults" resets the information mask settings back to default as seen on picture above.

As the controls for the information mask are almost identical to the ones of the OSD settings (from page 11), we refer to the previous chapter.

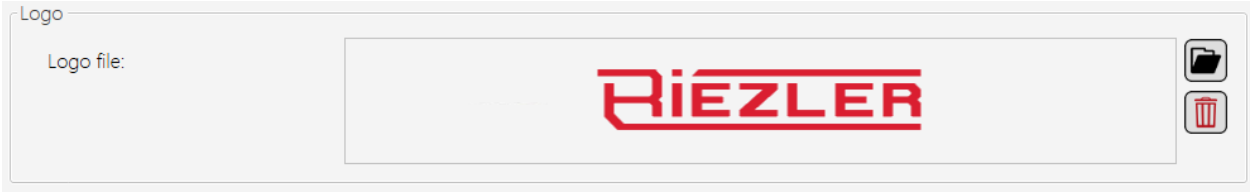

 

## 3.4. Company

In the “company” tab you can enter your contact information. They will then be shown on inspection reports.




### 3.4.1. Company logo

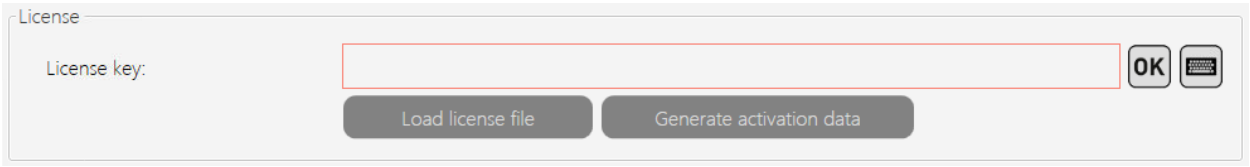



To show your company logo during inspections and on inspection reports, follow these steps: Copy your company logo as PNG or JPG file onto a USB stick and plug it into one of the USB ports of the control unit. Press the little folder-icon on the right. A window opens that shows all content on your USB stick. Choose your logo file and confirm with OK.

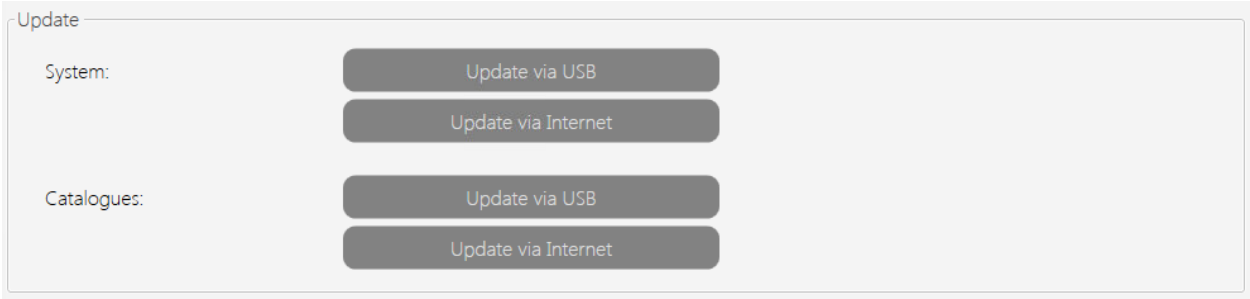
If you don’t want show your logo anymore you can remove it by pressing the delete button on the right.

## 3.5. License / Update




Add-on modules can be activated in RiVision (e.g. usage of country specific damage catalogues). This can be done in the license section. The license code will be sent to you in plain text and/or as a file by one of our employees after your purchase of the add-on.
The code can be entered with the on-screen keyboard or loaded from a USB storage medium. If you decide to load from USB, copy the license file to a USB stick and plug it into one of the USB ports of the control unit. Press "License key" to load the license code.




In the update section updates can be made for the RiVision software or damage catalogues. Both elements can be updated via USB stick or directly over the internet.

Update via USB: The necessary update files will be sent to you by one of our service-staff or provided to download. Copy the update file(s) on a USB stick and connect it to the control unit.
If you want to update RiVision click on "Update via USB" in the system section. The process to update damage catalogues is similar. Press "Update via USB", but this time in the catalogue section.

Update via Internet: If your control unit is directly connected to the internet via an Ethernet cable, you can install the update with the press of one button. Click on "Update via internet" in the system or catalogue section – depending what you want to update.

No matter which way you take: in both cases you've got to confirm the update installation. Depending on the size of the updates (and possibly your internet connection) the process will take several minutes.

**HINT**

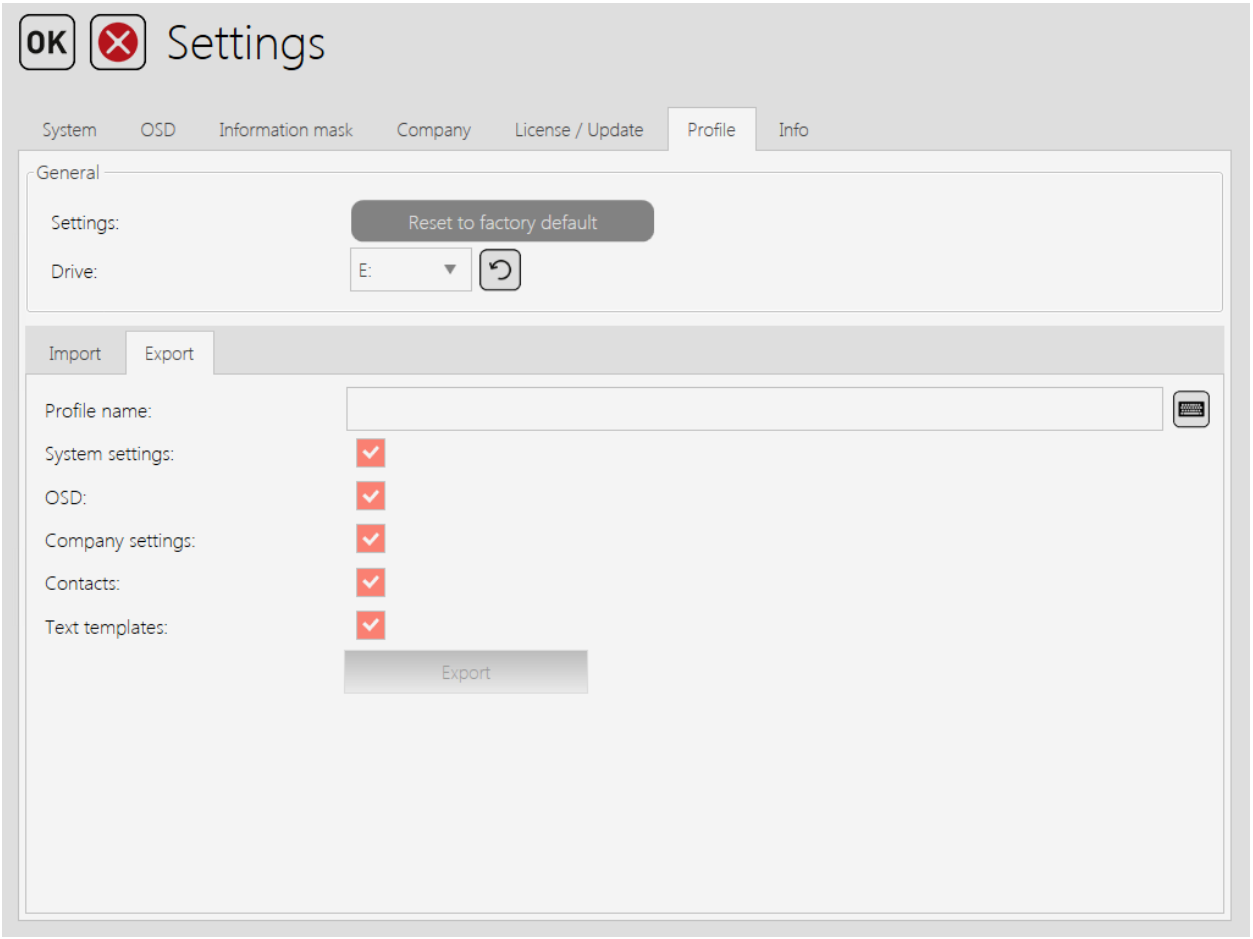
**During the update process**

Don't power off the MSE during the update process! Don't unplug the power supply! Don't remove the USB storage medium!
Otherwise it can come to a complete system break down of the control unit.

## 3.6. Profile

In the “Profile” tab you can reset the RiVision system data to factory default, but also export and import profiles. Beside all system-, OSD- and company settings, profiles contain contacts and text templates as well. They can be exported to backup all important data and settings – or to import the profile on another control unit. This saves the configuration once again.

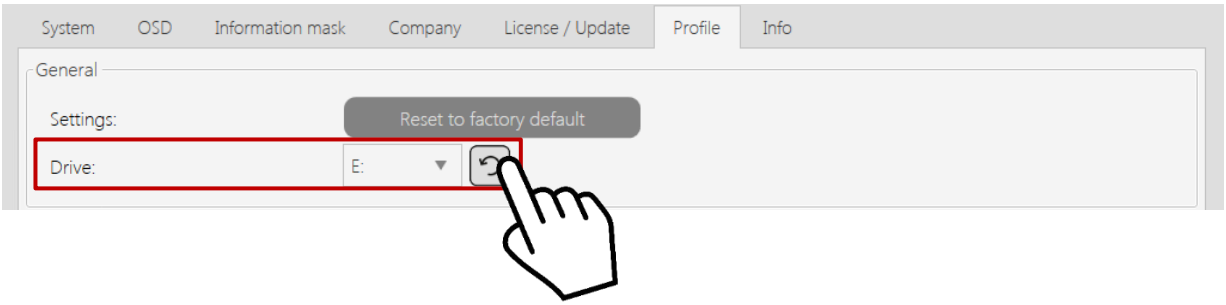




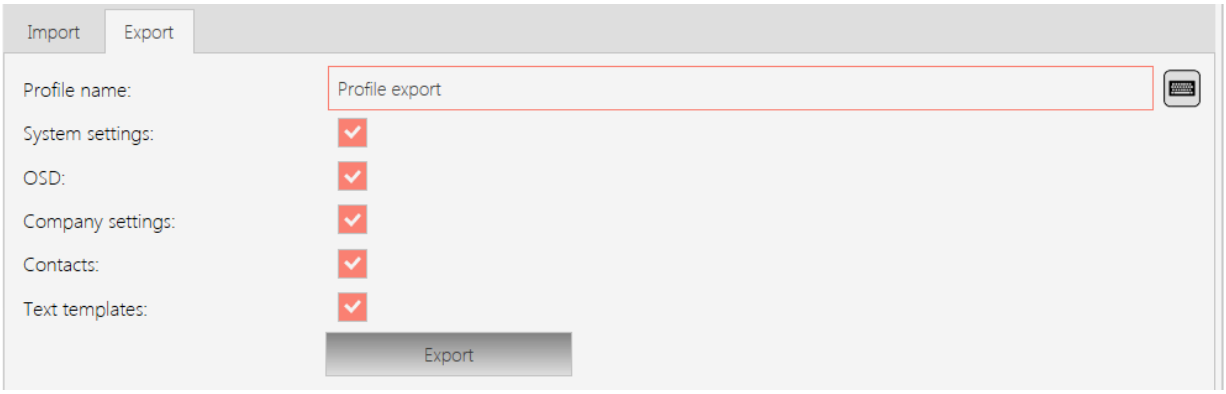
 

## 3.6.1. Export profile

To create a backup of the current profile – or to import the profile on another control unit afterwards – an export has to be done first.




Connect a USB storage device to the control unit and then press refresh. A drive letter will be shown then.

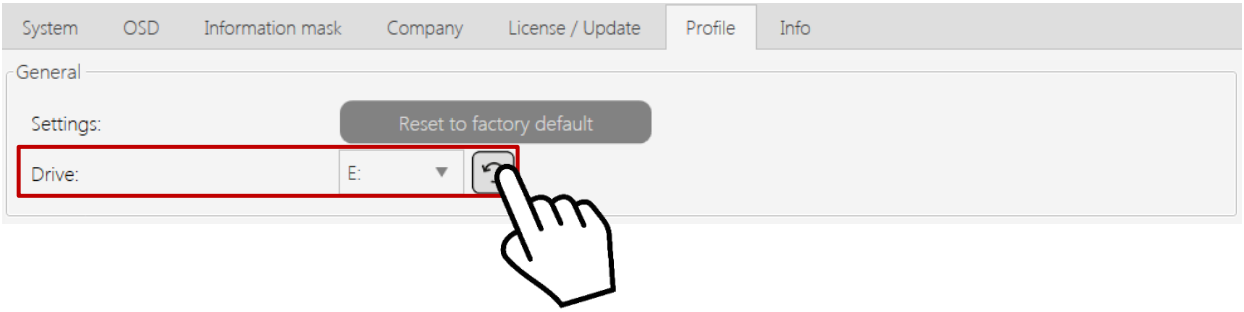



Choose “Export”. In the configuration area, a profile name has to get set. The selection which settings and data you want to export is up to you. We recommend keep all options selected. Finish the export process by pressing “Export”. Depending on the number of contacts and text templates the export can take some moments.

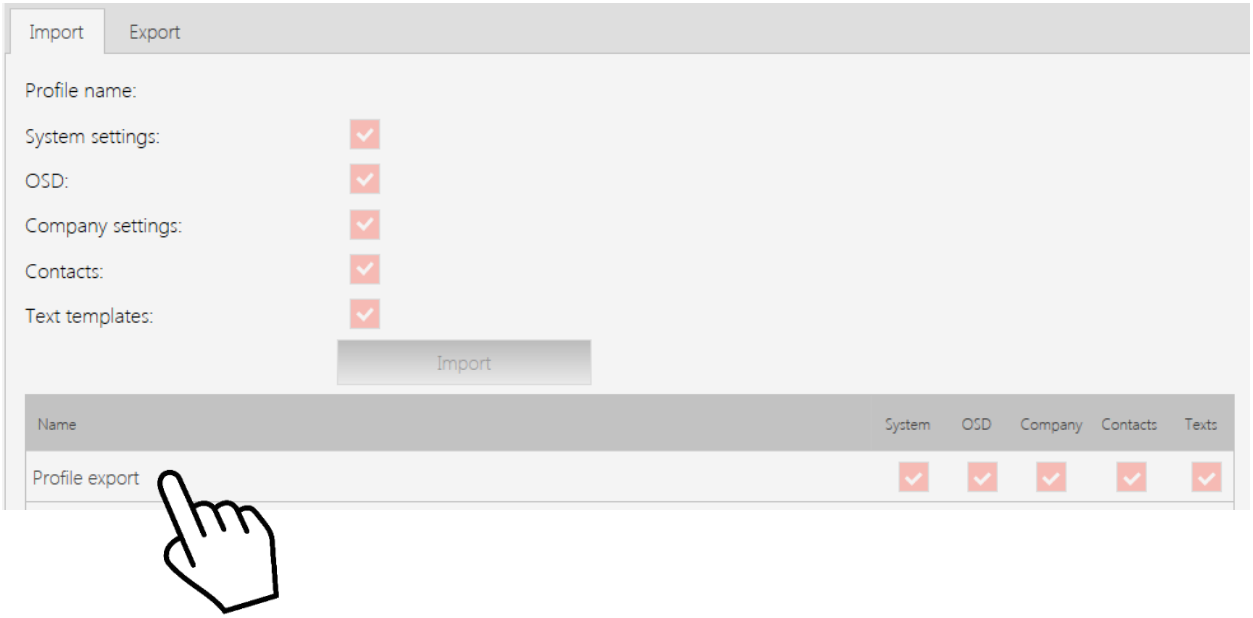

 

## 3.6.2. Import profile

If you want to import a profile completely or partially, proceed as following:




Connect a USB storage device to the control unit. Beforehand, assure that an exported RiVision profile is present on it.
Refresh the drive list by pressing the “Refresh”-button. As soon as a drive letter is visible, proceed.



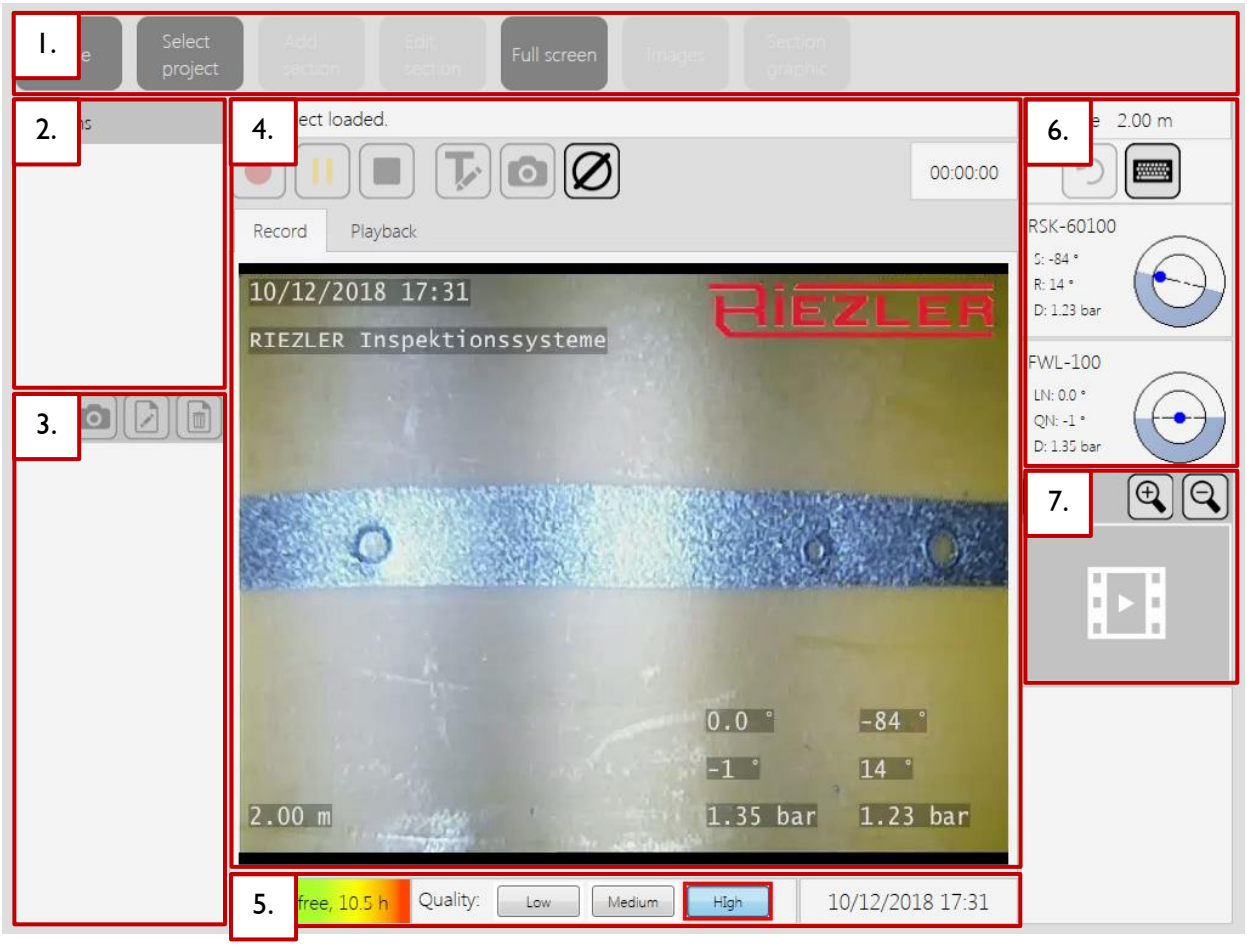

On the bottom of the “Import”-tab, all profiles are listed that have been found on the USB storage device. There you can also see which data they contain. Select one profile of that list by pressing it. The profile is now ready to be imported. If you want, you can deselect certain data (system settings, OSD, company settings, contacts and / or templates) that you don’t want to import. By default, all available data gets imported.

Finish the process by pressing “Import”. Depending on the number of contacts and text templates this may take a moment.

# 4. RIVISION: QUICKSTART

The inspection screen that conceals itself behind the Quickstart-button is segmented into five sections. It allows simple inspections of pipes. To record an inspection a project has to be selected. More information about projects can be found in section „5. RiVision: Project management“.




1. Menu bar
All buttons regarding the project or sections can be found here

2. Section overview
Shows a list of all sections for the current project

3. Observation overview
Observations are listed here and can be edited afterwards

4. Inspection area
Control buttons and video image for recording and playback

5. Status bar
Shows available disk space the status bar, meter counter and the current date and time

4. Device information bar
All data of connected devices that are necessary for an inspection are shown here

7. Zoom
Enables you to zoom in and out of the video picture

## 4.1. Menu bar

| Button | Function |
|---|---|
| Close | Ends the record- / playback-mode and brings you back to the previous menu level. |
| Select project | If no project is chosen this button lets you select one. If there is already chosen a project it lets you edit the projects core data. |
| Add section | Button is only active when a project is selected. Lets you add a section quickly to the current project. |
| Edit section | Button is only active when a project and a section (in the section information area) are selected. Lets you change the sections core data. |
| Full-screen | Switches to full screen mode. |
| Images | Shows the taken images of a section. Therefore a section has to be selected in the section information area. |
| Section graphic | After a recording of a section is finished, its protocol graphic can be displayed. It is identical to the protocol graphic in the inspection report. Please be aware: A protocol graphic can only be created if two or more observations have been taken. |

## 4.2. Inspection area

The inspection area shows the current camera image or the video playback – depending which mode is selected. With help of the tabs „Record“ and „Playback“ you can switch modes.

**Record mode**

| Control element | Label | Function |
|---|---|---|
|  | Record | Starts the record to a section. Therefore a section has to be selected in the section information area. |
|  | Pause | Pauses the record. Press record to resume the record. |
|  | Stop | Ends the record. |
|  | Capture observation | Let’s you capture an observation. |
|  | Capture observation inclusive taking a picture | Let’s you capture an observation and automatically takes a picture. |

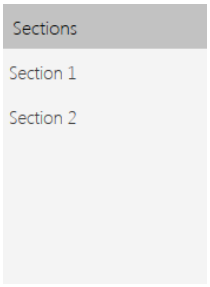
**Playback mode**

| Control element | Label | Function |
|---|---|---|
|  | Playback | Plays the recorded video of a section. |
|  | Fast forward (2 times) | Fast forwards the video two times. |
|  | Fast forward (5 times) | Fast forwards the video five times. |
|  | Pause | Pauses the playback. To continue the playback press the playback button. |
|  | Stop | Stops the playback. |
|  | Video timeline | Shows the current progress of the video. |

When a record is in progress the fringe of the video window changes to red. If you pause the record / playback it gets orange. While playback is in progress the fringe is green.

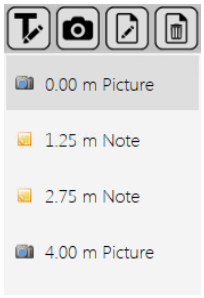
## 4.3. Section overview




The section information area gives you an overview over all sections created for the current project. Mark one section to start a record for it or to playback an already recorded video.

As long as a record / playback of a section is in progress you can't select a different section. Just when the record / playback is ended you can change the selected section.

## 4.4. Observation overview




The observation overview shows a section diagram of the currently selected section. Are there more captures than can be displayed you can use the scroll bar to navigate.

Observations can be edited retroactively.

| Control element | Label | Function |
|---|---|---|
|  | Retroactively add observation | Works only when recording is paused. Enables you to add an observation (text only) retroactively. |
|  | Retroactively add observation including picture | Works only when recording is paused. Enables you to add an observation (text and picture) retroactively. The picture taken for the observation is the one of the paused video frame. |
|  | Retroactively edit observation | Works only when recording is stopped. Allows you to retroactively edit a marked observation and its text / type. |
|  | Retroactively delete observation | Works only when recording is stopped. Lets you retroactively delete the marked observation. |

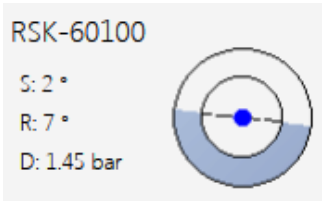
**HINT**

**Retroactively edit observations**

Retroactively added observations will be shown in the inspection protocol, but not in the video recording.
Retroactively edited observations will be shown adjusted in the inspection protocol. However, the initial observation text and type will still be visible in the video recording.
Retroactively deleted observations won't be shown in the inspection protocol. However, they will be still visible in the video recording.

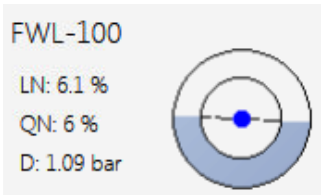

 

## 4.5. Device information bar




Is a pan and tilt camera connected to the control unit it shows the following information in the device information bar: swivel angle (**S**), rotation angle (**R**) and the internal camera pressure (**D**).

Axial camera heads don't have any surveillance functions and don't show any values.




A connected crawler shows the following information: tilt measurement long axis (**LN**), tilt measurement lateral axis (**QN**) and the internal crawler pressure (**D**).

**Warning notices**

**HINT**

If a value is out of its normal range it shines up red. End the inspection immediately if the internal pressure is too high / low and readjust it to the recommended pressure. If the lateral axis value shines up extreme caution is due: the crawler impends to overturn! Steer it back into a horizontal position with help of the joystick.

## 4.6. Status bar

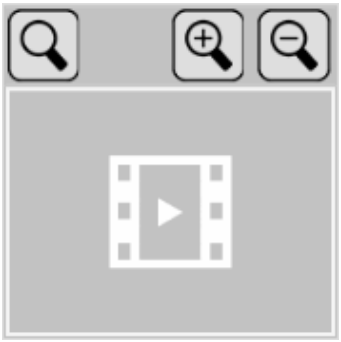
| Control element | Label | Function |
|---|---|---|
|   | Hard drive display | Shows the remaining hard disc space. When it comes towards an end, old projects have to be exported / deleted to free space. |
|   | Date and time | Shows the current date and time. |

## 4.7. Meter counter

| Control Element | Label | Function |
|---|---|---|
|   | Meter counter | Shows the current distance of the crawler. |
|  | Reset meter counter | Resets the meter counter to 0 m / ft. |
|  | Set meter counter | Let's you set a meter counter value (accurate to two digits behind the decimal point). |

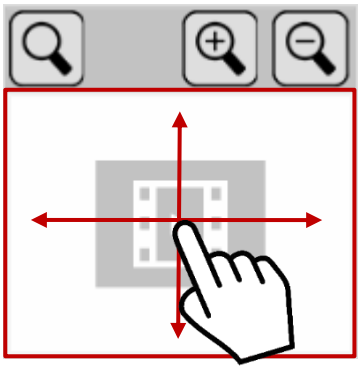
## 4.8. Zoom



With the zoom functionality you can enlarge the video image up to three times.

The first step enlarges the video image 1.5-times. The next steps follow in 0.5 intervals, up to the maximum of 3 times.

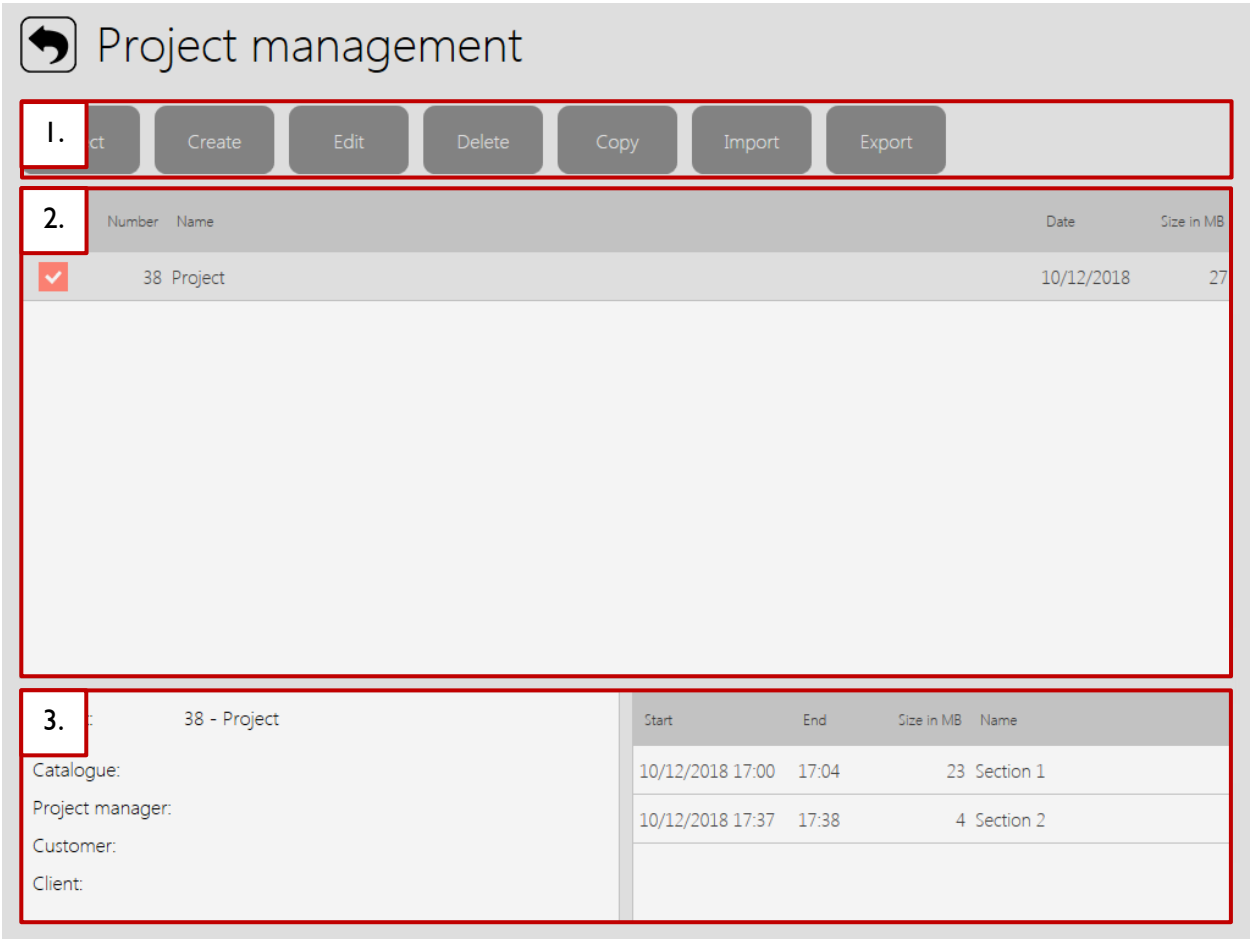
As this is no optical zoom but only **digital zoom**, the enlarged field of view might not be totally sharp.

| Control element | Label | Function |
|---|---|---|
|  | Increase zoom | Enlarges the video image. |
|  | Decrease zoom | Shrinks the video image. |
|  | Reset zoom | Resets the zoom. |
|  | Select zoom section | By default, the zoom always aligns on the center of the field of view. If you want to observe another spot away from the center, press and hold the little grey rectangle and move it within the red-outlined area.<br><br>The red-outlined area stands for the camera image without zoom. The little grey rectangle stands for the current field of view. The further you increase the zoom, the smaller the grey rectangle gets accordingly.<br><br>Once you move the grey rectangle, you can see the field of view moving in the inspection area. |

# 5. RIVISION: PROJECT MANAGEMENT

The project management helps you to organize all your projects comfortably. It build's the basis for recordings since sections are attached to projects. Convenient in your office or at the inspection site – in a few easy steps you can create a project with all necessary data and start the inspection.



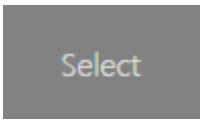

1. Menu bar
All buttons to control project- and section-functions can be found here

2. Project list
An overview over all existing projects.

3. Detailed information
Important data and sections of the selected project are shown here

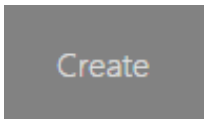

 

## 5.1. Select project



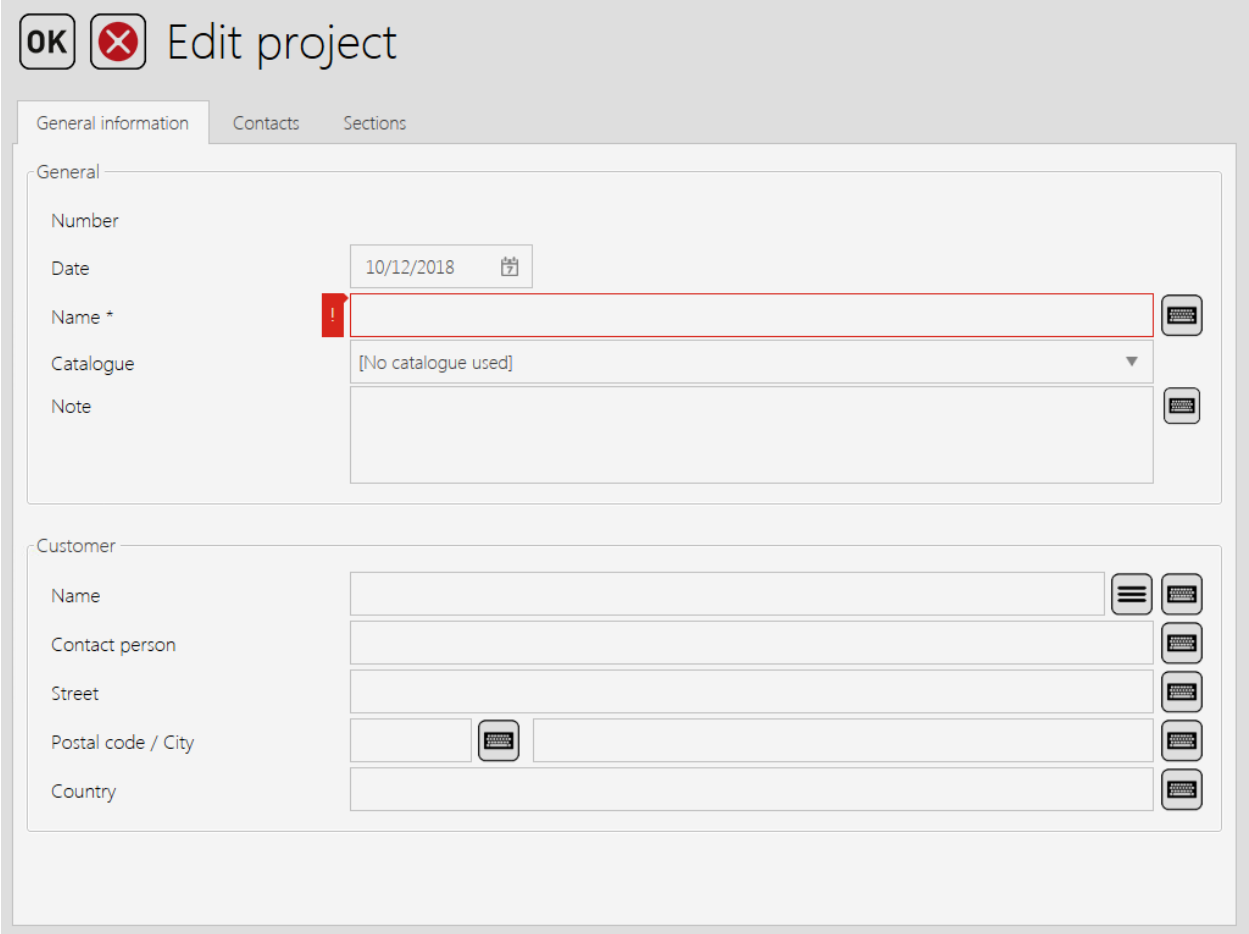

To start an inspection to a project / section, a project has to be selected in the project list and confirmed with the „Select"-button. The software then switches to the Quickstart- / inspection-window.

## 5.2. Create project




Lets you create a project.
A project contains all necessary core data that are important for an inspection / job. One or more sections that need to be inspected can be added to a project.

The „Create project"-dialogue is segmented in three tabs. The only mandatory field that has to be filled is the name of the project. All other information are optional and it's up to you to fill them or not.




In the „General information"-tab you can set the date and name (mandatory field) of the project. Furthermore you can choose if you want to use a country specific damage catalogue for that project. Damage catalogues are not included in the basic version of RiVision. They are available as an option that can be bought when needed.

It is important to understand that some functions of the software differ extremely depending if a damage catalogue is chosen or not!

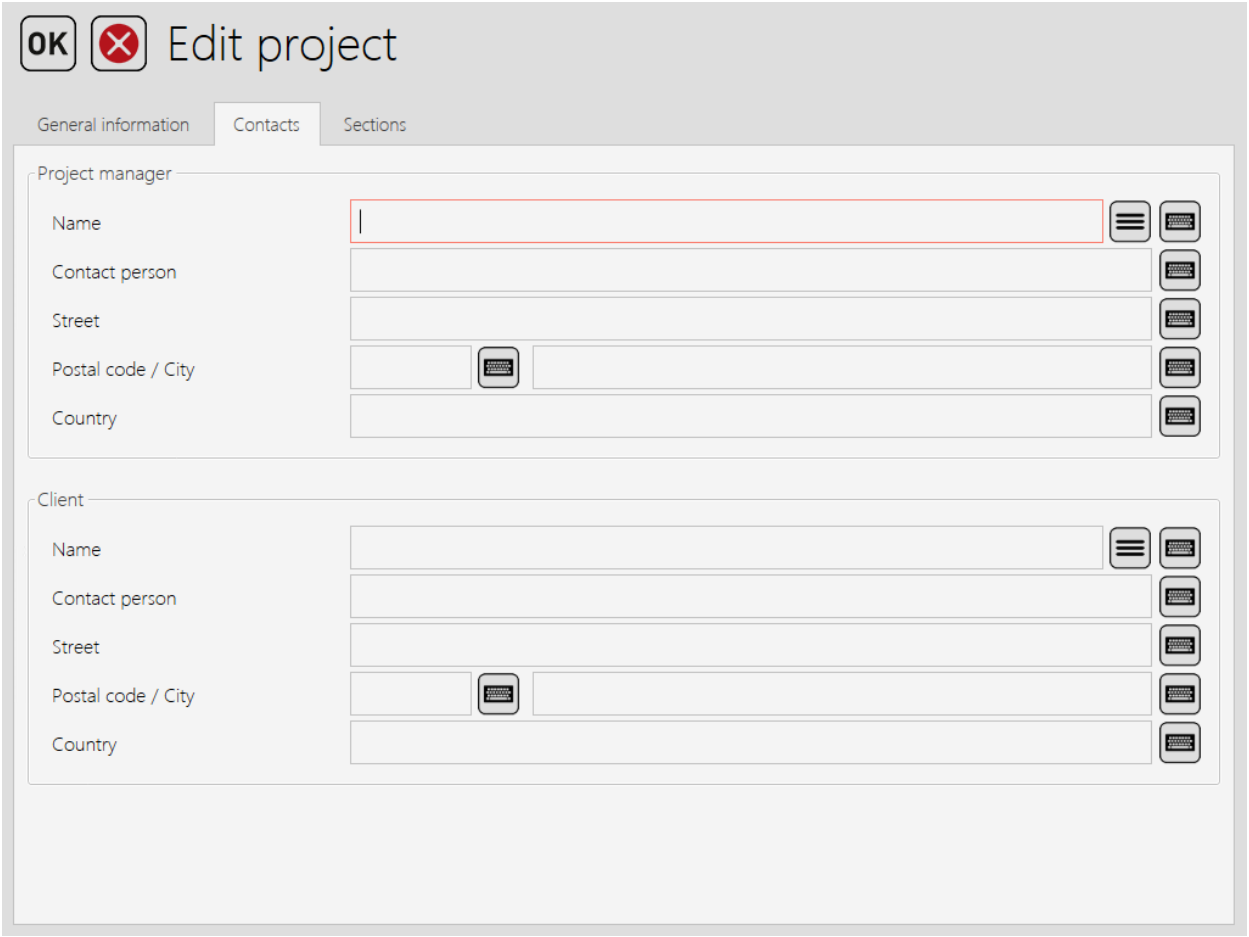
Is no damage catalogue set for a project you can capture observations only with manual text input (or manually created templates), but not with standardized damage-catalogues and -abbreviations. Furthermore a lot less options are available for section core data and captures of observations.

**HINT**

**Add / change damage catalogue**

It is not possible to add or change a damage catalogue after the project has been saved once.

In the „customer"-tab you can fill the fields with help of the on-screen keyboard or you choose an already existing contact. To do that, press the little magnifier-icon right of an input field. The contact management is explained in chapter „7. RiVision: Contact management" on page 50.





In the third tab you can add, edit, copy and delete sections of the project. Adding a section is only possible if the project has been saved before. The software will ask you automatically if you want to safe the project when you try to add a section and the project hasn't been saved yet.

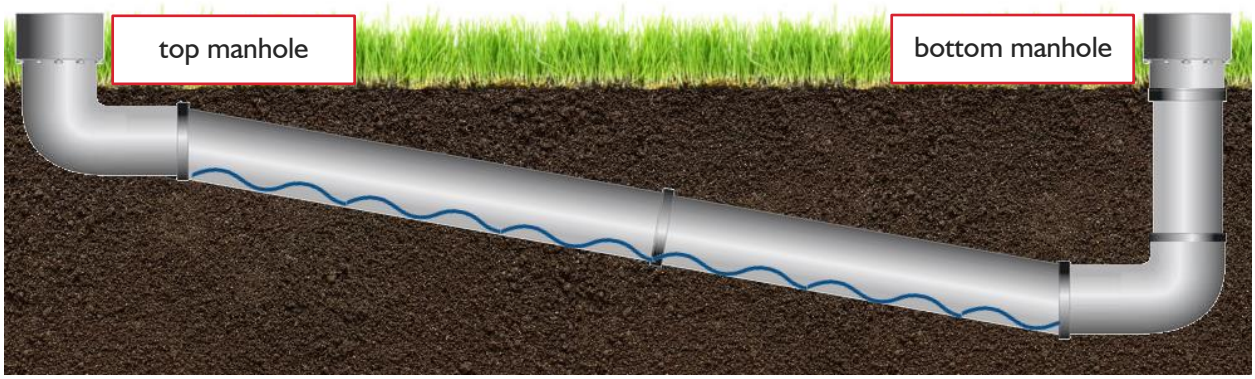


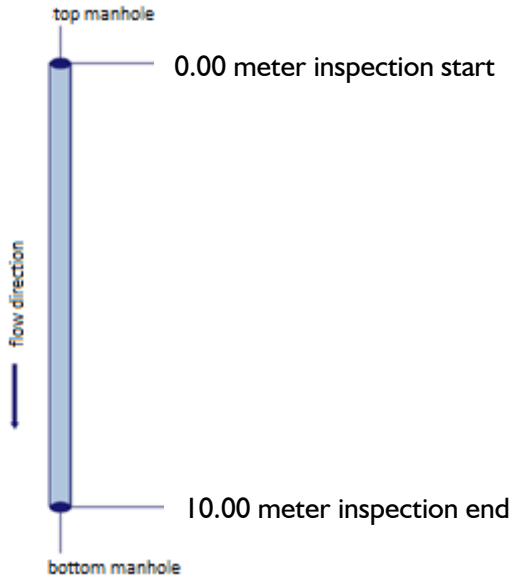
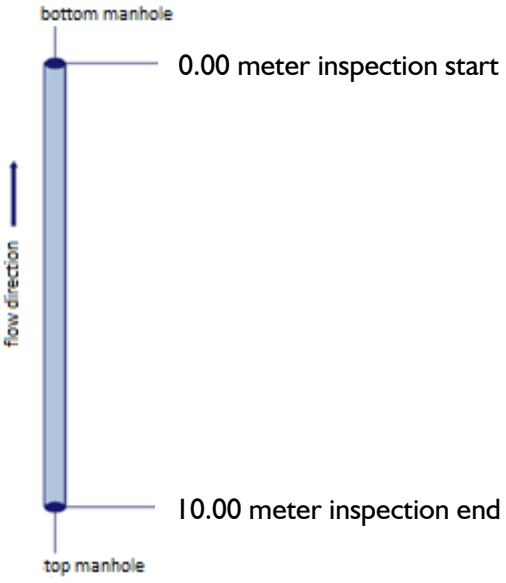
## 5.2.1. Add section

RiVision allocates video recordings and images to sections. Several sections can be added to a project. In each section one video can be recorded. Any number of images can be captured in a section.

Regardless if sections are created with or without a damage catalogue, it is essential to understand how the flow direction is represented in the section graphic. It is important that nodes are labeled correctly. The "top manhole" must always be the node that is higher in comparison. Accordingly, the "bottom manhole" is the node that lies deeper under the earth. Since water always flows downwards, an inspection that starts at "top manhole" runs in the flow direction. Conversely, an inspection that starts at "bottom manhole" runs against the flow direction. Inspections where the start and end nodes are on a horizontal level do not require a flow direction.




If both nodes are labeled correctly, the flow direction is printed properly in the report:

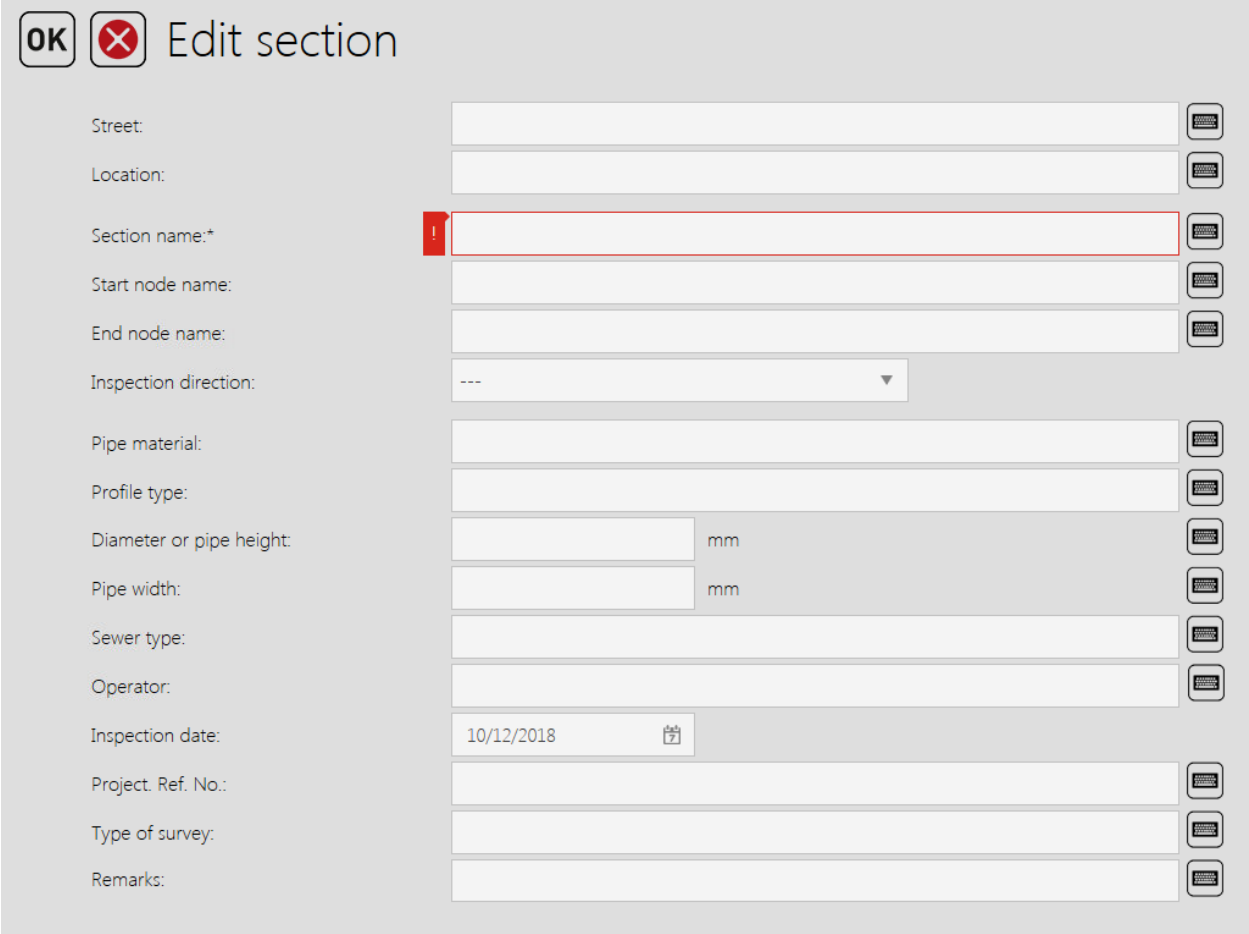
| Inspection from ‚top manhole' to ‚bottom manhole'<br>Inspection **IN** flow direction | Inspection from ‚bottom manhole' to ‚top manhole'<br>Inspection **AGAINST** flow direction |
|---|---|
|  |  |





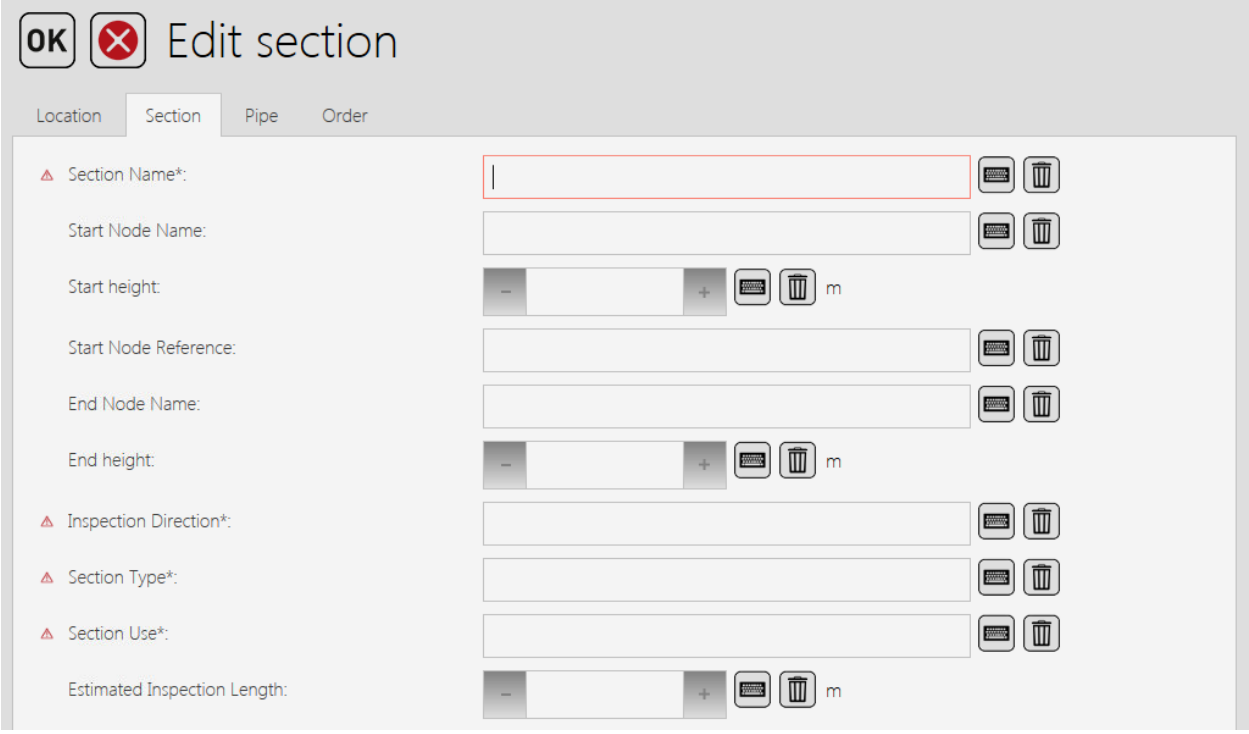
## 5.2.2. Add section – without damage catalogue




Except of the „Inspection name“ no fields need to be filled. The available section core data is limited to a minimum.

## 5.2.3. Add section – with damage catalogue

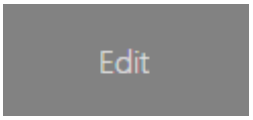



Depending on the chosen damage catalogue you'll find a different number of section core data that can be specified. They are segmented into different tabs (location, section, pipe, order and core data).

From the legislator as mandatory stated fields are marked with a small red exclamation mark. These fields have to be filled. The section cannot be created without filling all this mandatory fields.

If you can't create the section with the OK-button please check all four tabs for not filled mandatory fields.

## 5.3. Edit project




Select a project in the project list and press „Edit" to edit its core data or sections.

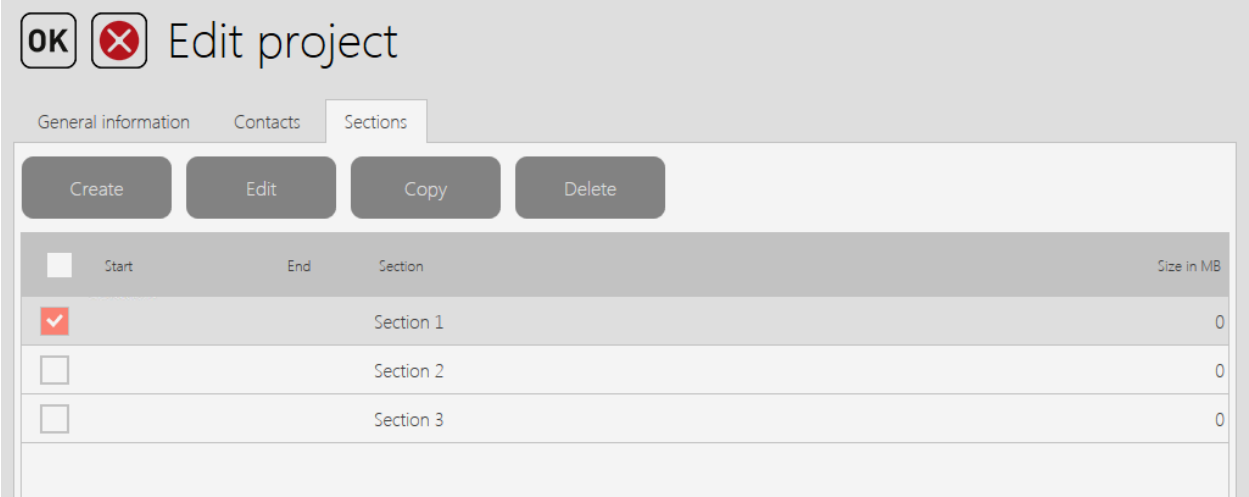
In hindsight it is possible to edit all core data except of the „Project name" and the „Catalogue".
The content is the same as explained in chapter „5.2. Create project" on page 26.

The possibility to add more sections or edit / copy / delete current ones is explained in the next chapter.

## 5.3.1. Manage sections

Via „Projects“ → „Edit (project)“ → section-tab you get to the section management window as shown below. Here you can manage the sections of a project. Any number of sections can be added to a project.




| Control element | Function |
|---|---|
| Create | „Create a section” is explained in chapter 5.2.1. Add section on page 29. |
| Edit | With the „Edit“-button you can edit the core data of an already created section. Mark the section you want to edit and press „Edit“. The structure is the same as creating a new section – see chapter 5.2.1. Add section on page 29. |
| Copy | Select the section you want to copy and press „Copy“. The section gets copied (with all its core data but without any video recording or captured images) into the currently active project. |
| Delete | Deletes one or more selected sections. Caution: All video recordings and images of the sections get deleted as well! |

## 5.4. Delete project

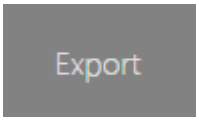
| | |
|---|---|
| Delete | Mark one or more project(s) in the project list to delete them by pressing the „Delete“-button.<br><br>Caution: Here all assigned sections (including the video recording and captured images) of a project get deleted as well! Use the opportunity to export / archive projects before deleting them. Exports are specified in chapter 5.6. Export project / create report on page 33. |

## 5.5. Copy project


To copy a project mark one in the project list and press „Copy“. The copy process copies all core data of the project as well as its sections. Video recordings and captured images will not be copied.

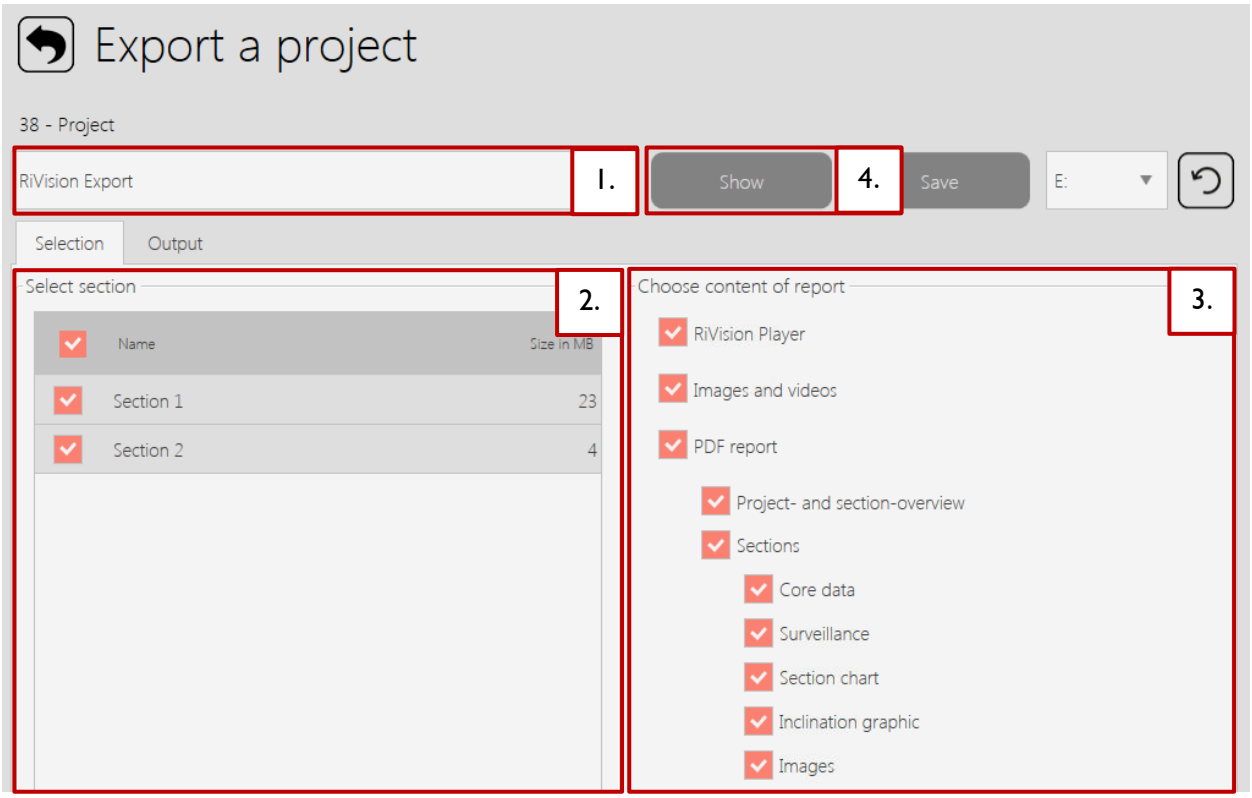
## 5.6. Export project / create report




The „Export“-button offers three functions:

1. Creation of a standard report – to view directly at the control unit (chapter 5.6.1. on page 33)
2. Export the project data to a USB stick (RiVision export) – to pass the inspection data to a customer or to archive the project on an external storage device
   (chapter **Fehler! Verweisquelle konnte nicht gefunden werden.**on page **Fehler! Textmarke nicht definiert.**)
3. Export the project data in a WinCan compatible file format – to process it in WinCan (chapter 5.6.3. on page 35)

### 5.6.1. Show inspection report




4. Choose „**RiVision export**“ in the upper left corner (point 1.).
5. In the section area (point 2.) you can choose which sections you’d like to be shown in the report. Unwanted sections can be deselected.
6. The same goes for the chosen content (point 3.). All marked items will be listed in the report.

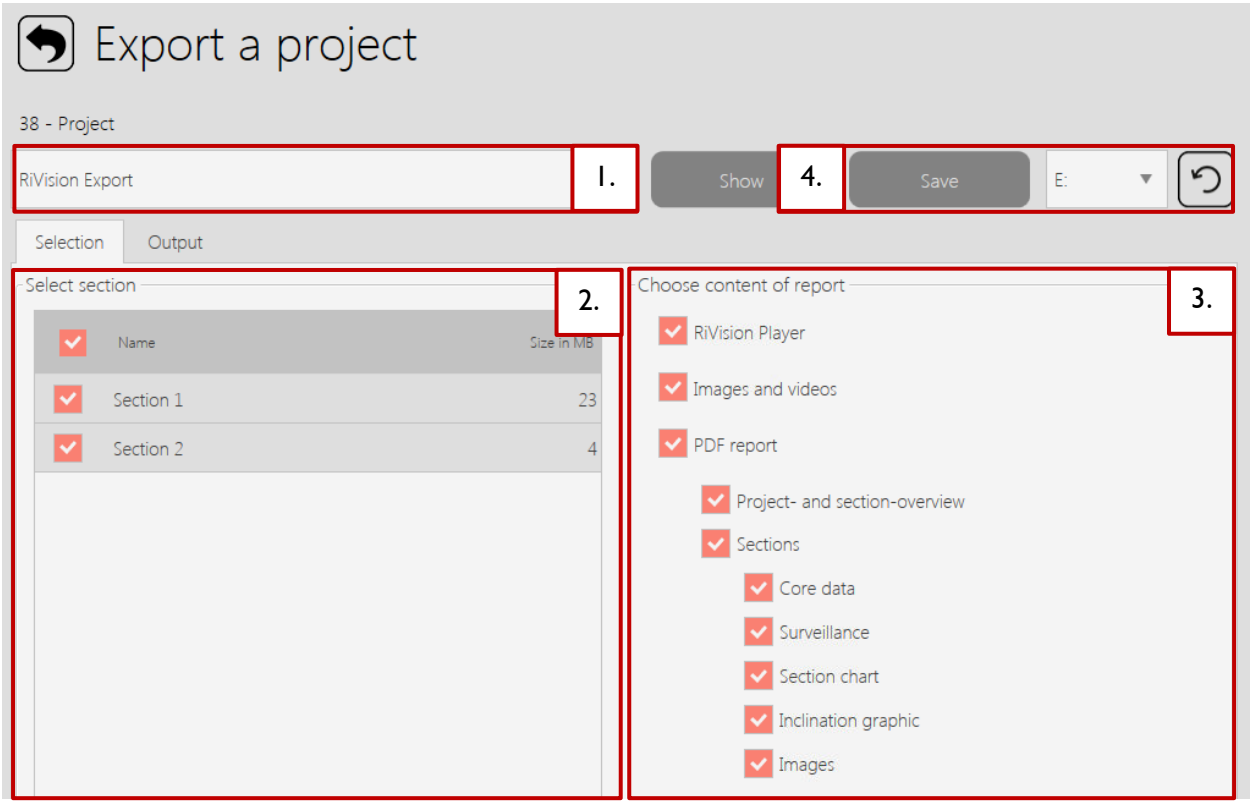

 

7. Finally press „**Show**“ (point 4.) to display the report on the screen. The creation of the report can take a few seconds – the bigger the project scope, the longer it may take.

## 5.6.2. Export project to USB device

The “RiVision export” saves all information of an inspection on a connected USB device. This includes the inspection report (PDF format), video recordings (MPEG4 format) and observations (JPG format) for all sections, plus a player.

Thus, the “RiVision export” allows you to archive projects, but also to pass them to customers on a USB device. To do so, proceed as following:




8. Choose „**RiVision export**“ in the upper left corner (point 1.).
9. In the configuration area (point 2.) you can choose which information you’d like to export. Unnecessary information can be deselected.
10. The same goes for the sections (point 3.). All marked sections will be listed in the report.
11. Press the refresh-button (point 4.) after you’ve plugged in your USB device into one of the control unit’s USB ports. When the storage device was identified correctly a drive-letter appears left of the refresh-button.
    Now you can “**Save**” the report to your USB device. Depending on the size of the project this process can take a few minutes.

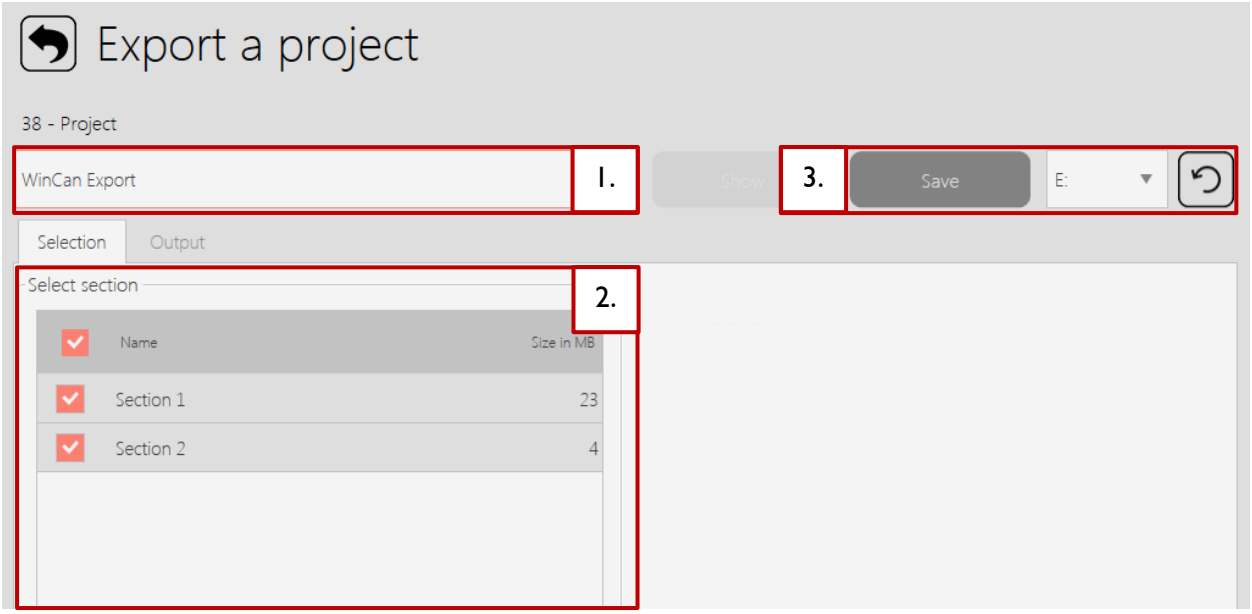
Export was done to archive a project: Store the USB device carefully. Importing projects back on the control unit is possible anytime (see chapter 5.7. on page 36).

Export was done to pass project data to a customer: Disconnect the USB device from the control unit and hand it to your customer. He can either check the inspection report (PDF) or use the RiVision Player (RiVision.Player.exe) to reenact the inspection. The RiVision Player looks almost identical with the RiVision control unit software and offers all important functions for the playback.

### 5.6.3. Export project in WinCan compatible format

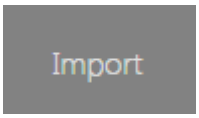
If you want to further edit your project using WinCan, you can export it in a WinCan compatible format. Proceed as following:




12. Choose „**WinCan export**“ in the upper left corner (point 1.).
13. Mark the sections (point 2.) you want to export.
14. Press the refresh-button (point 3.) after you've plugged in your USB device into one of the control unit's USB ports. When the storage device was identified correctly a drive-letter appears left of the refresh-button.
    Now you can "**Save**" the report to your USB device. Depending on the size of the project this process can take a few minutes.

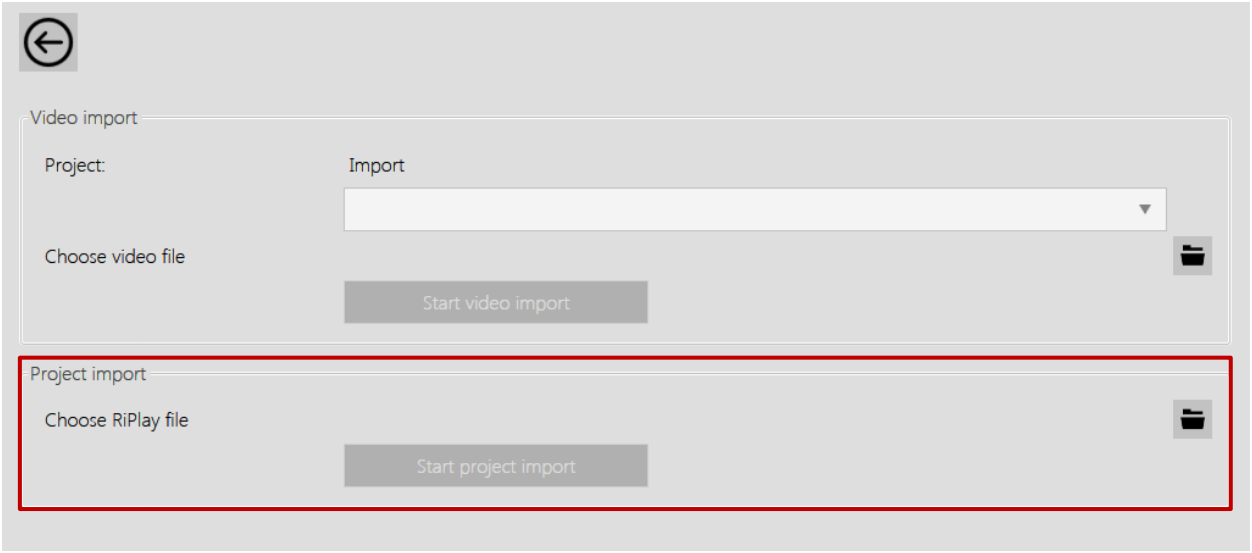
## 5.7. Import project




The import function offers two different functions that will be explained in the next two subchapters.

### 5.7.1. Import RiVision project

If you've exported a project on a USB device using the "RiVision export" (see chapter 5.6.2. on page 34), you can import the project anytime back on the control unit. The whole project, including its core data, sections, video recordings and observations (pictures) will be imported.

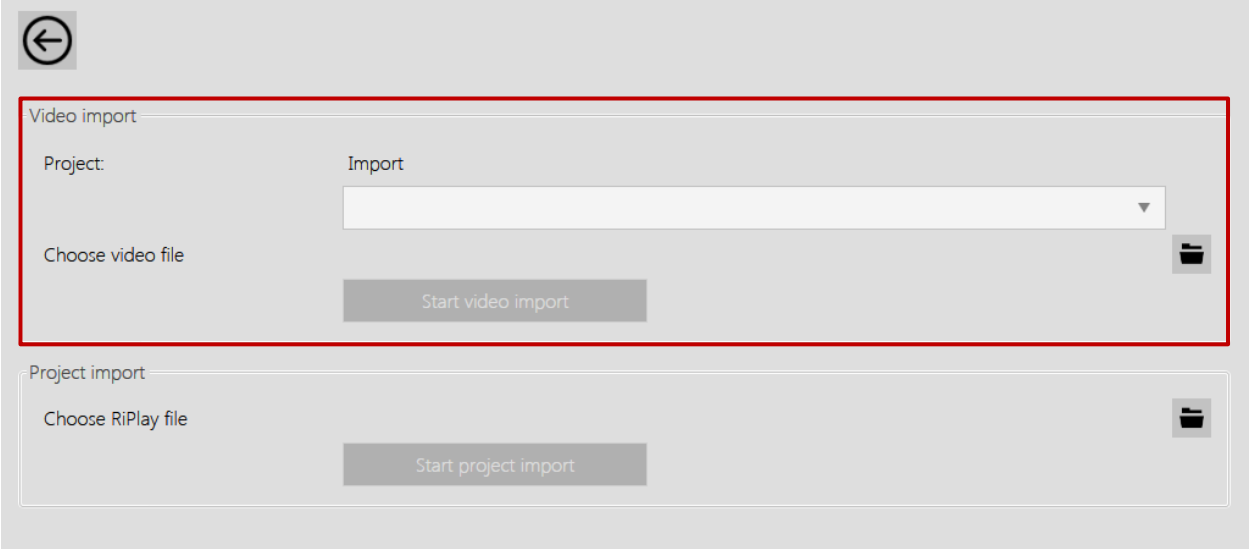



1. Assure that the connected USB device holds a complete RiVision project.
2. Click on the folder icon on the right.
3. If there are several (project) folder on the device, navigate to the correct one.
4. Choose the "RiPlay"-file and press Open.
5. Finish the import by pressing "Import project". Depending on the size of the project this process may take a few moments.
6. Close the "Import project" menu. The imported project will be shown on top of the project overview list.

## 5.7.2. Import video file

If you have made an inspection using a simpler system (without damage observation) and possess a video of that, you can import it to RiVision and create observations retroactively.

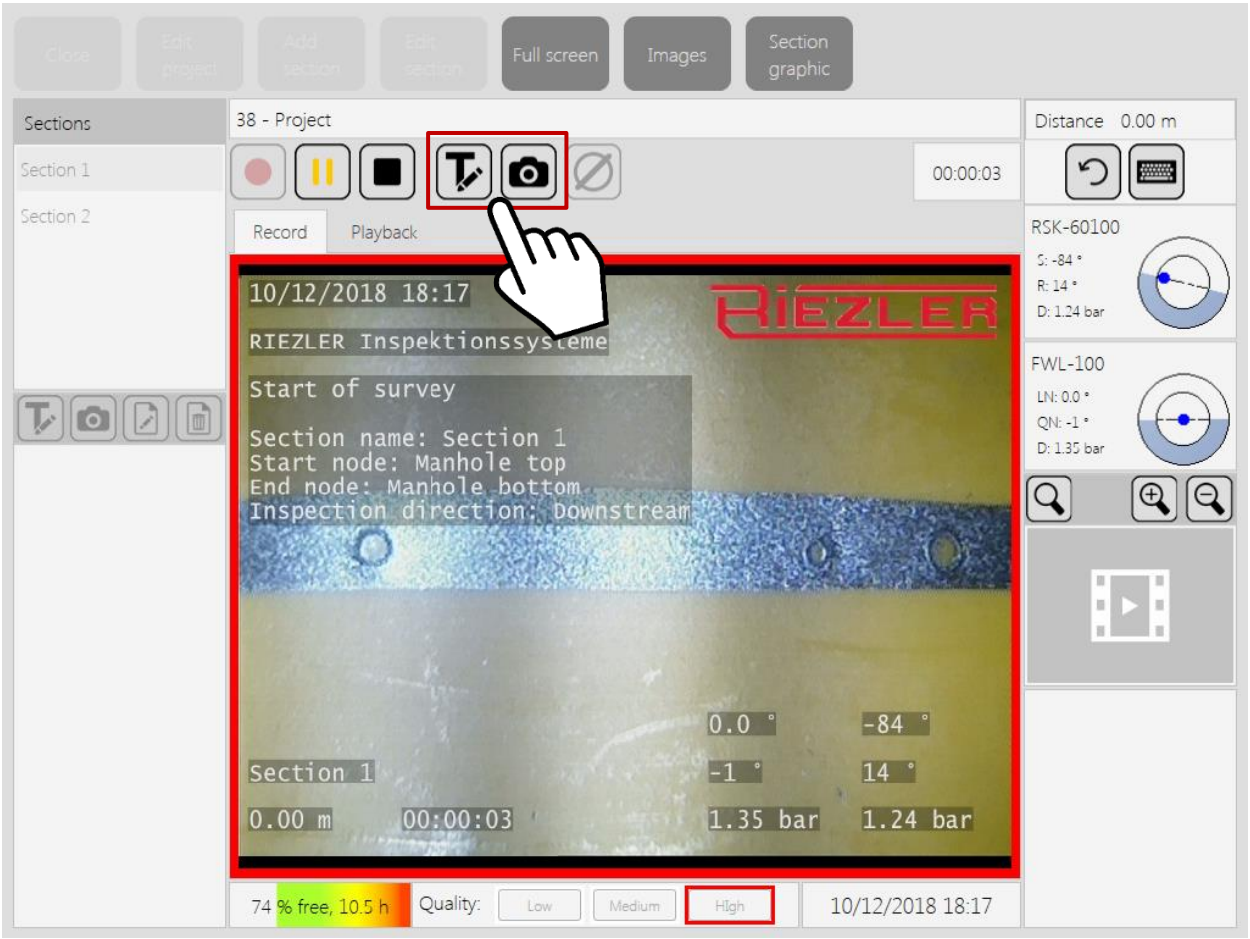



1. Create a new project in the project management section. The new project mustn't use a damage catalogue (see chapter 5.2. on page 26). Furthermore, create one section to the project (see chapter 5.2.2. on page 30).
2. Go back to the project list overview and select the newly created project.
3. Click on "Import".
4. RiVision automatically chooses the newest project as the import destination. Chose the associated section in the dropdown menu.
5. Click on the folder icon on the right.
6. Navigate to the folder that holds the video file, select it and press Open.
7. The "Start video import"-button starts the import process.
8. Go back to the project management, mark the according project and click on "Choose". In the playback mode you can watch the inspection and create observations when the video is paused (see chapter 4.4. on page 22).

# 6. RIVISION: CAPTURE OBSERVATION

There are two different opportunities to capture an observation during a video recording. Both necessary buttons are located over the camera picture:




| Control element | Label | Function |
|---|---|---|
|  | Capture observation - with text but without picture | Displays a damage text that's visible in the video recording. |
|  | Capture observation - with text and picture | This function also displays a damage text that's visible in the video recording. It furthermore creates a picture that will be shown on the inspection report. |

Both observation types differ just slightly, that's why they will be explained combined.

Depending if the project was created using a damage catalogue or not, the observation mask is setup a tad differently.

For projects without damage catalogues, go to the next subchapter and follow its instructions.

For projects with damage catalogues, please jump to chapter 6.2. on page 41.

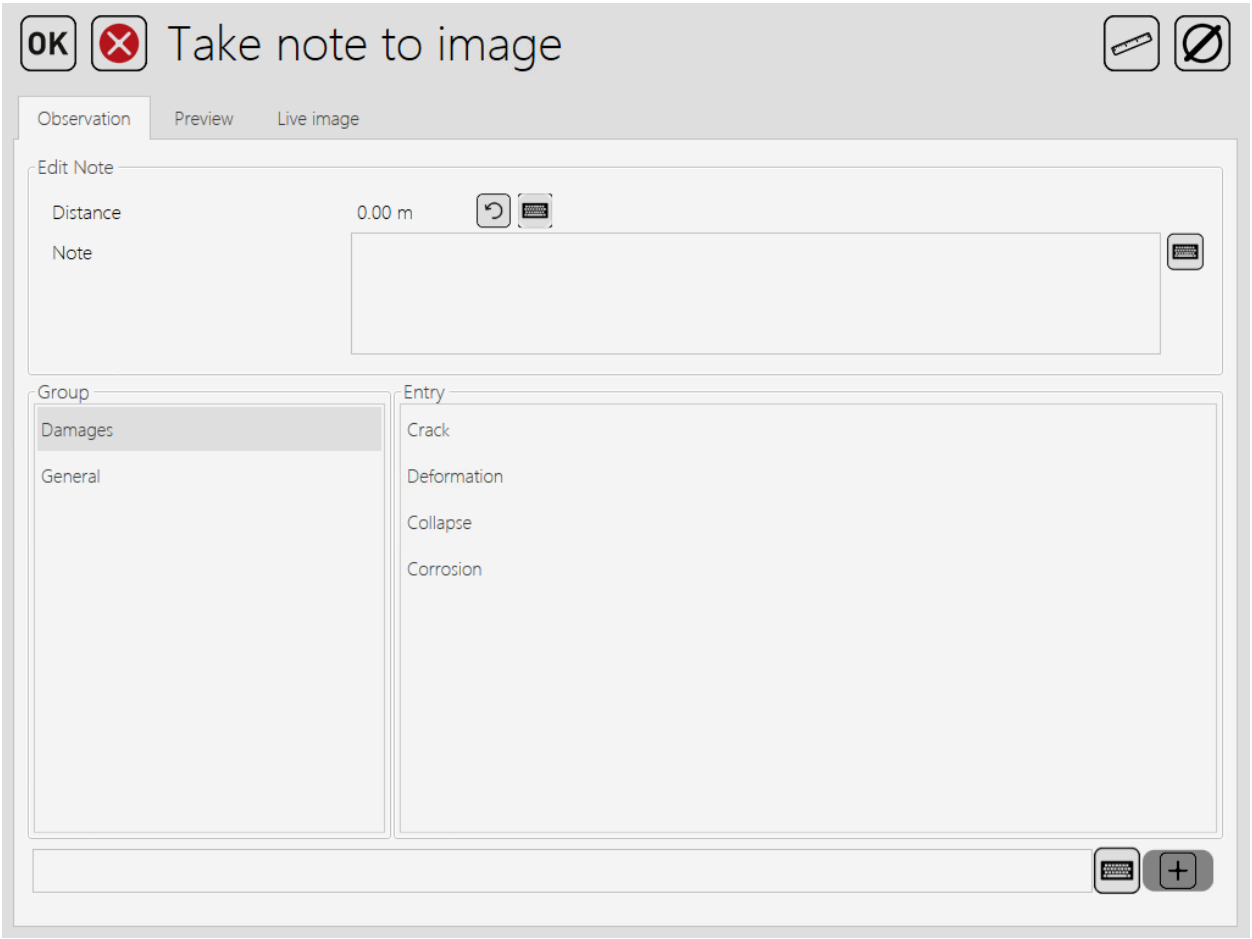


## 6.1. Capture an observation – without a damage catalogue

Was the project created without a damage catalogue selected (see point „5.2. Create project“ on page 26) observations (text with or without picture) can be captured with manually entered texts or the use of the text template database.

Press one of the „capture observation“-buttons. The following window appears:




The capture-tab mainly contains two elements: In the “Edit note”-section you can type the damage text using the onscreen keyboard. This text will then appear in the video recording and on the inspection report. If necessary, you can adjust the meter counter as well.



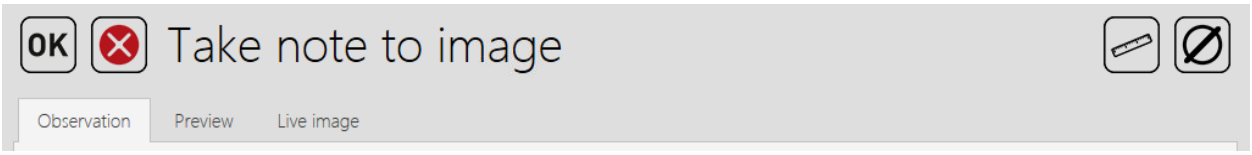
 

If you've already equipped your text template database with damage texts, you can choose one in the lower part of the screen. First, choose a group on the left hand side and then an appropriate text on the right hand side. Confirm with Okay.


If you want to save a new entry in one of the groups during an inspection, proceed as following: Select a suitable group on the left hand side and enter text in the text field on the bottom using the onscreen keyboard. Save the entry using the plus-icon on the lower right hand side.

However, we recommend to equip the text template database well thought through before the first inspection. A detailed explanation how to use the text template database can be found in chapter 8. on page 53.

The other control elements on this screen will be briefly explained now:



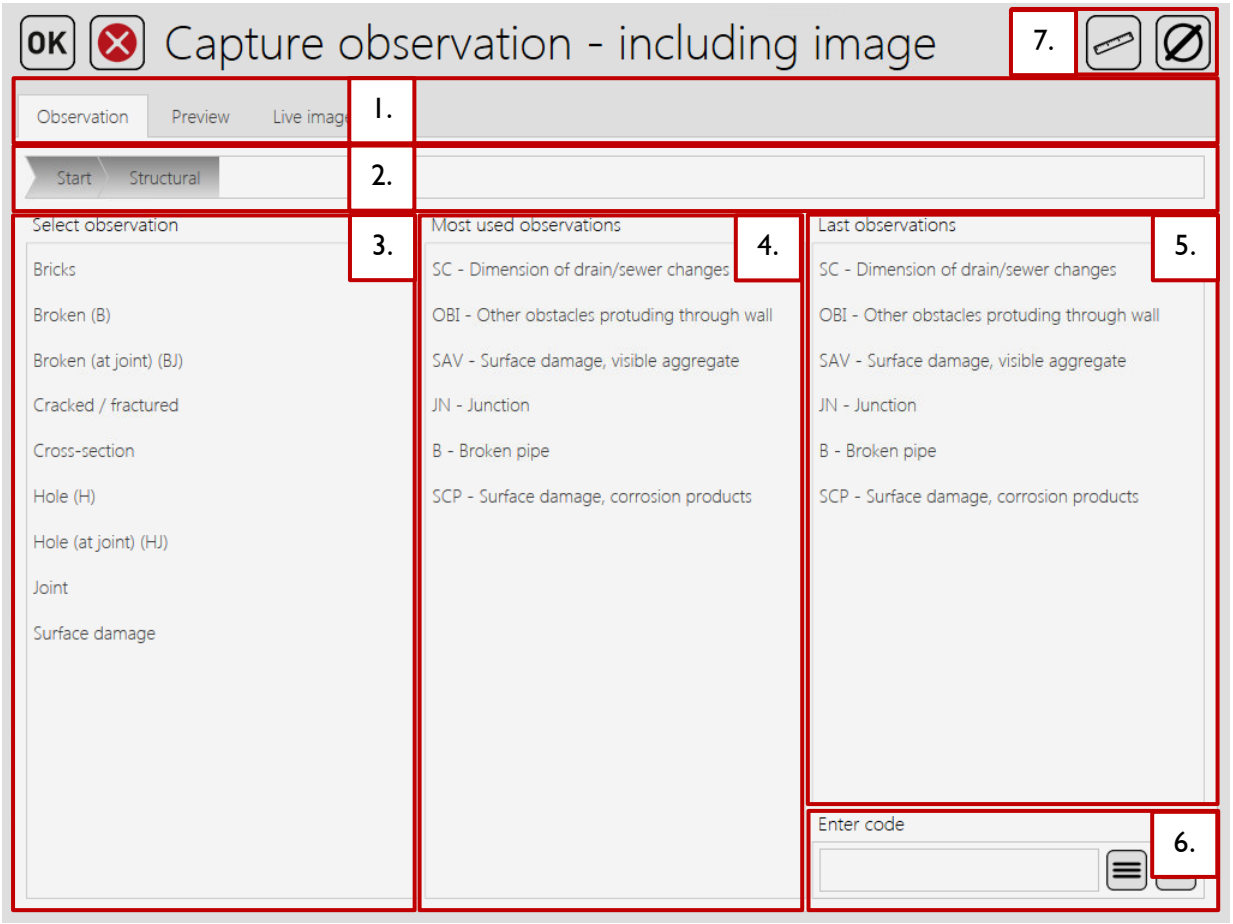

| Control element | Label | Function |
|---|---|---|
| Preview | Preview | Shows a preview of the captured image |
| Live Image | Live image | Shows the current live image of the camera |
|  | Crack measurement | Only works with cameras that hold parallel lasers.<br>See chapter 6.3. on page 44. |
|  | Diameter measurement | Only works using "Capture observation with picture" in combination with cameras that hold parallel lasers.<br>See chapter 6.4. on page 46. |

## 6.2. Capture an observation – with a damage catalogue

Was the project created with a damage catalogue integrated (see point „5.2. Create project“ on page 26) observations can be captured with the help of standardized damage-types and –appreciations. The capture text that will be displayed in the video recording is thereby already predefined and only has to be supplemented by the required, mandatory details.

Press the „capture observation“-button. The following window appears:




1. Capture / camera image
Switch between the observation mask, preview and live camera picture

2. Category level
Shows the currently chosen category level

3. Select inspection
Click through the standardized, pre-built category levels till you find the appropriate entry

4. Commonly used inspections
For each catalogue the most commonly used damage types are listed here.

5. Latest used inspections
Shows a chronologically assorted list of the last captures

6. Enter code
If you know the damage abbreviation by heart you can enter it here directly

7. Laser functions
Crack and diameter measurement
(see from page 59 for detailed information)

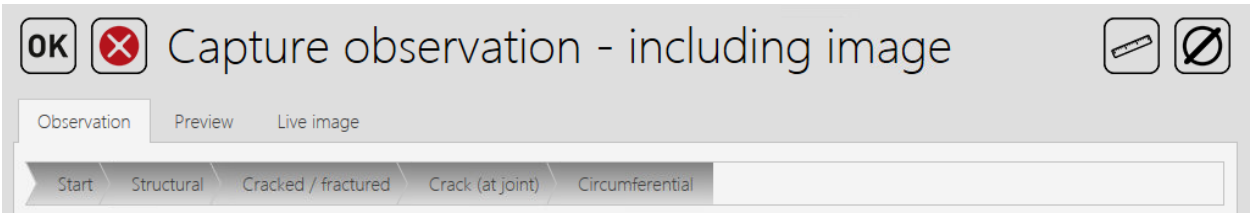

 

You have four different possibilities to choose an observation:

| | |
|---|---|
| Select inspection | Each damage catalogue has a vast number of possible capture types. These types are divided into different categories and sub-categories. Click through the "Select inspection" categories until you find the appropriate capture type. |
| Commonly used inspections | For each damage catalogue the most commonly used capture types / abbreviations are listed here. The more you use one type the higher it gets ranked. With one click you can choose it from the list. |
| Latest used inspections | In this list the latest used capture types / abbreviations are listed. Here also you can choose an entry with just one click. |
| Enter code | If you know an abbreviation for a capture by heart you can enter its code by on-screen keyboard and jump straight to the capture screen. To do so first press the keyboard-icon and enter the abbreviation. End the keyboard-mode by pressing the OK-button and finally start searching for the abbreviation by pressing the magnifier-icon. You jump straight to the capture screen. |

No matter which option you chose, they all lead to the capture screen of the respective capture type. This screen will be explained in chapter 6.2.1. on page 43.

The other elements of the "Capture observation"-screen will be briefly explained:

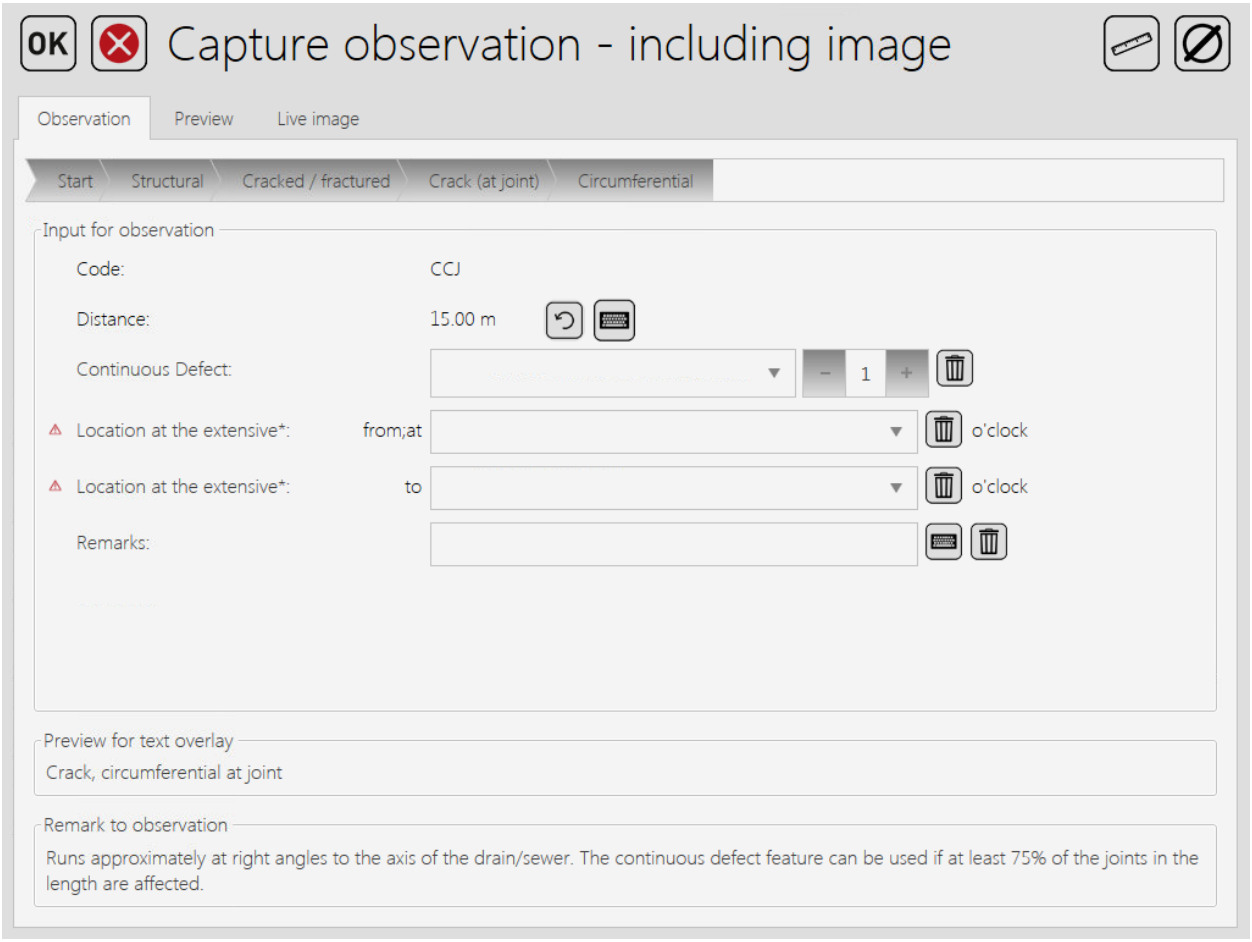



| Control element | Label | Function |
|---|---|---|
| Preview | Preview | Shows a preview of the captured image |
| Live Image | Live image | Shows the current live image of the camera |
| Start Structural | Category Level | Allows to jump back to other category levels if you've chosen a wrong subcategory |
|  | Crack measurement | Only works with cameras that hold parallel lasers. See chapter 6.3. on page 44. |
|  | Diameter measurement | Only works using "Capture observation with picture" in combination with cameras that hold parallel lasers. See chapter 6.4. on page 46. |

## 6.2.1. Capture screen

Depending on the chosen damage catalogue and capture type (with or without picture) more or less mandatory fields have to be filled. These mandatory fields are tagged with a small red exclamation mark. Further additional information can be entered – but, this is optional. Only if all mandatory fields are filled you can save the capture by pressing the OK-button.




Is a camera head in use that holds parallel lasers, you can use the crack and / or diameter measurement by pressing the buttons in the upper right hand corner. A detailed explanation for both functions follows from page 44.

After confirming the capture by pressing the OK-button you get back to the record-mode. The standardized, pre-built observation text will be shown in the video image for a few seconds. In the section information area a new entry gets created that shows the newly captured observation.

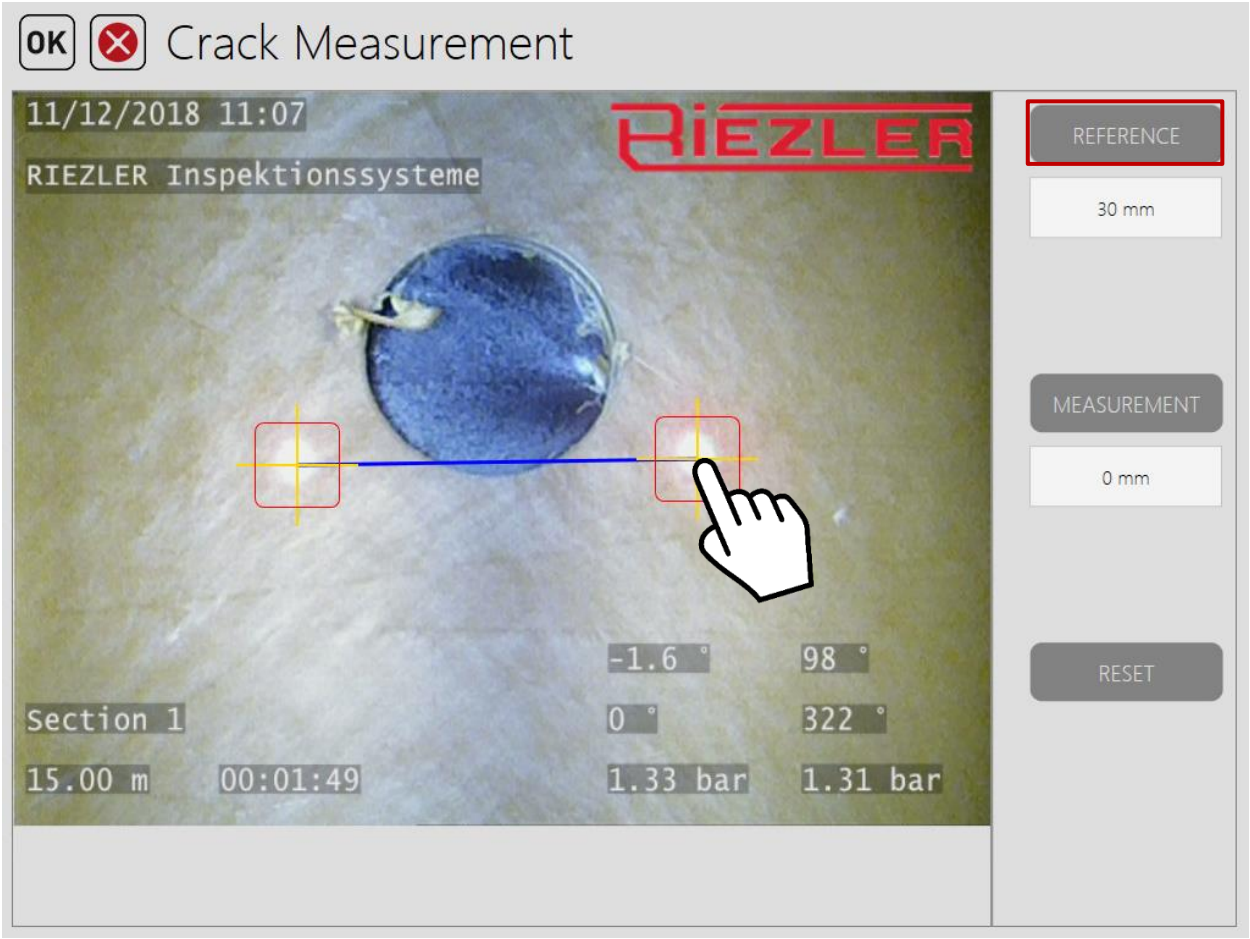

 

## 6.3. Crack measurement

To use the crack measurement function a camera head with integrated parallel lasers is mandatory. He can project two points in the pipe that allow to measure lengths.

Create an observation (with or without picture) during an inspection and then press the crack measurement button in the upper right hand corner of the capture screen.

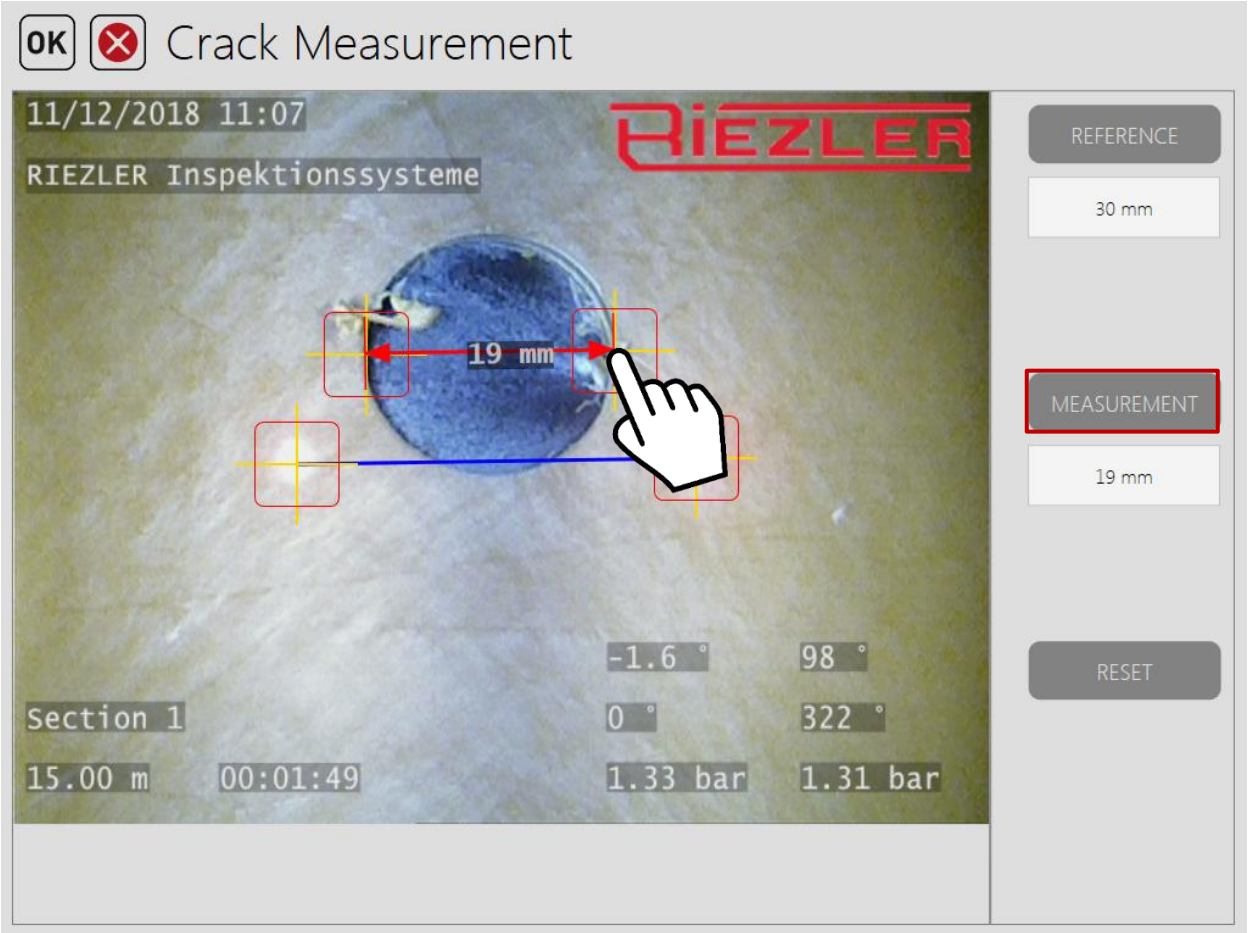
In the crack measurement mask you first need to set a reference value. To do that, click on “Reference” and then with your finger on each projected laser point on the touchscreen. If you didn’t hit them perfectly, you can move the crosshairs by dragging them over the preview picture.





After the reference value has been set, the actual crack measurement can be done. Proceed by clicking on “Measurement” and then on the start and end of the observation you want to measure. In this step as well, you can rearrange the crosshairs retroactively by dragging them to the right position.




If you are not satisfied with the measurement, restart the whole process by pressing “Reset”. Otherwise, confirm with OK and return to the observation mask.

Neither the crosshairs, nor the blue reference value line will be later shown on the captured observation picture. Only the red measurement line and the measurement value will be visible.

**HINT**

**Correct measurement**

To guarantee a correct measurement, the camera head has to face the object to be examined perpendicularly. When this is not the case, the measured values can be inaccurate or wrong.



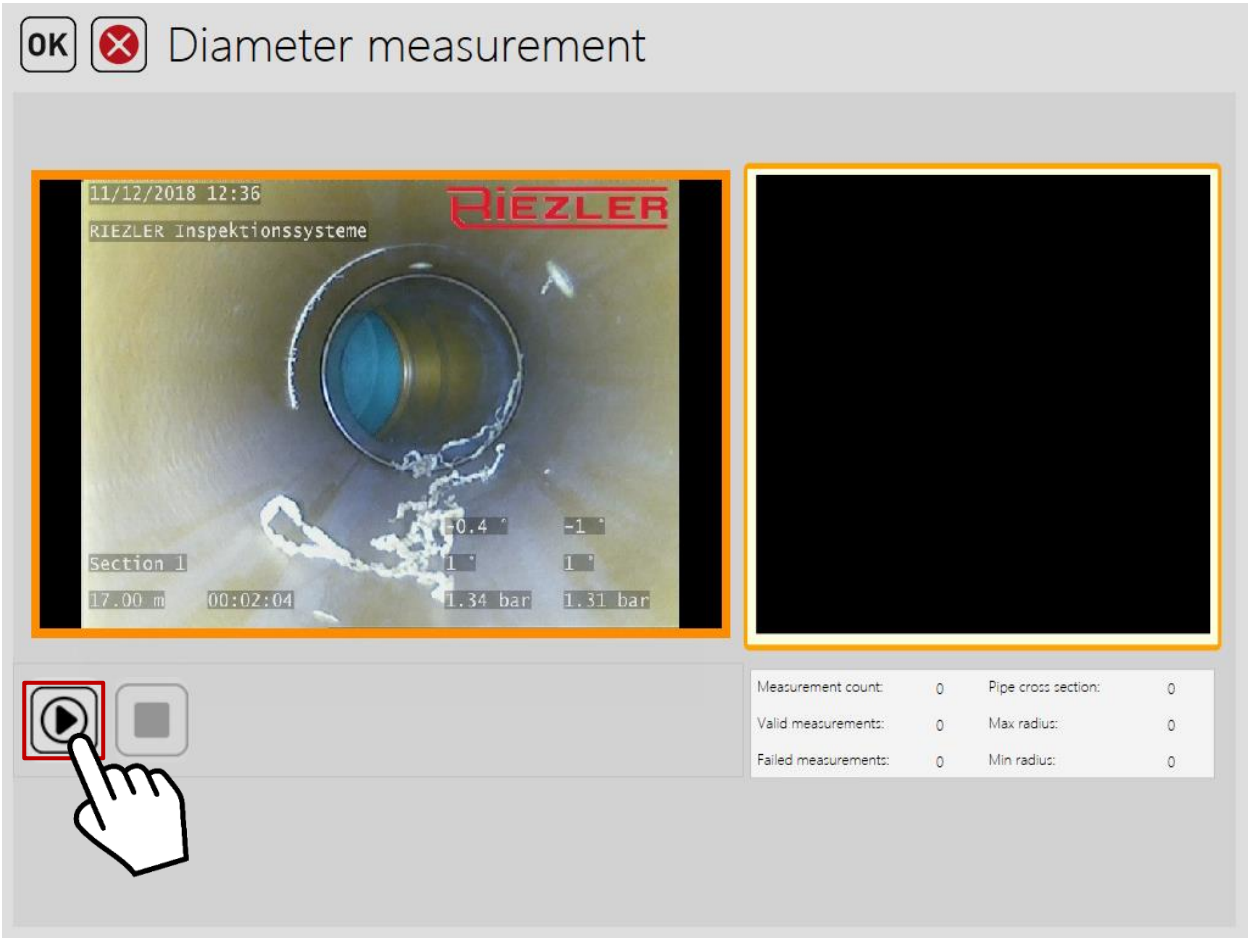
 

## 6.4. Diameter measurement

To conduct a diameter measurement, it's mandatory to have a camera head with integrated parallel lasers connected to the control unit. Only then RiVision can perform the diameter measurement.

During an inspection, create an observation with picture and then click the diameter measurement button in the upper right hand corner of the screen.

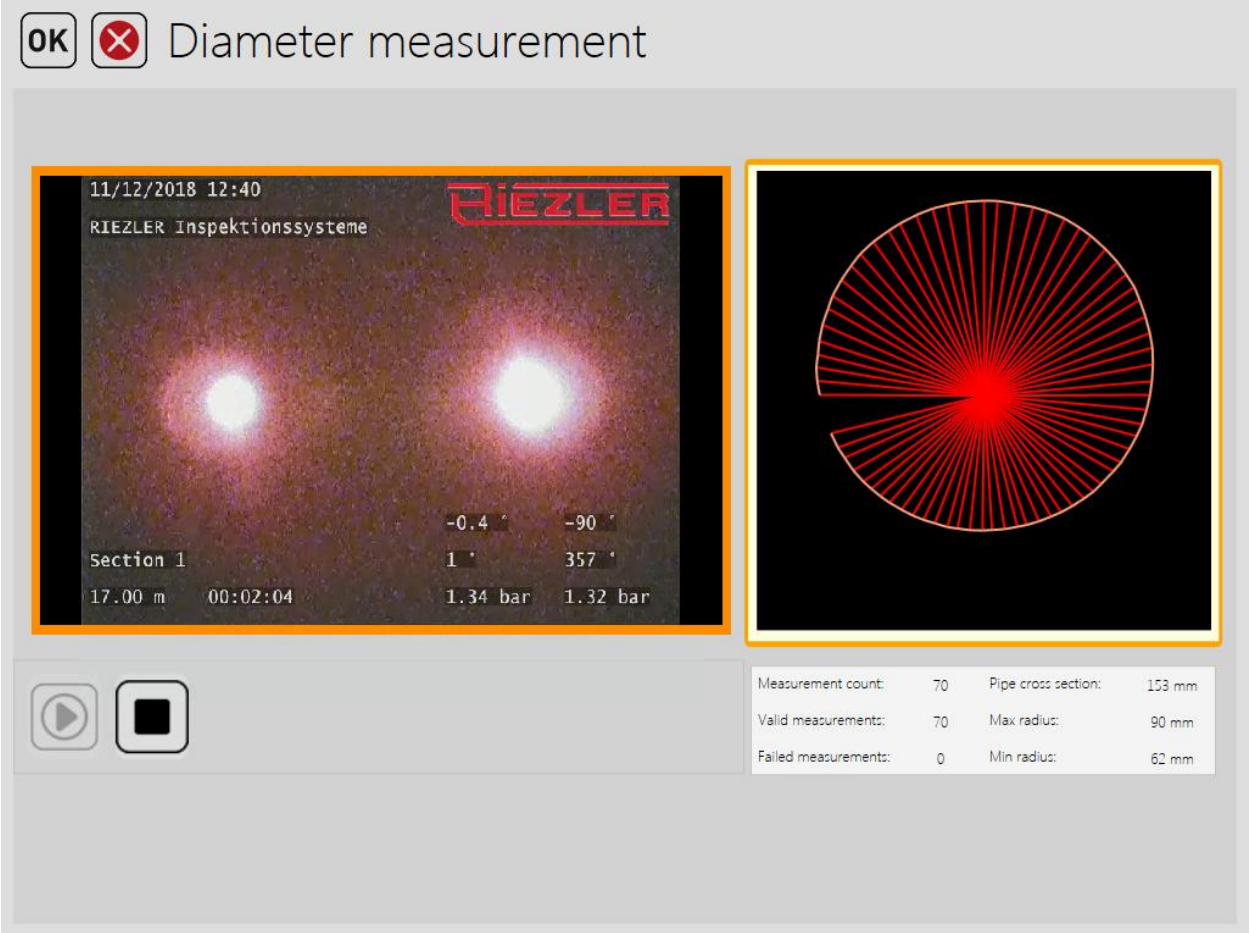
To start the autonomous measurement press the button on the lower left hand side (two triangles). The camera will then automatically turn 90° to the left, turns off the camera lighting and activates the laser measurement. After the pipe has been inspected by 360°, the camera head gets back in its regular centered position, turn the camera lighting back on and deactivates the laser measurement. The autonomous measurement can be canceled anytime by pressing the pause button (black square).





When the autonomous measurement is finished, you can see the measured values on the right hand side of the screen.




Confirm by pressing the OK-button to get back to the capture mask. The process of the diameter measurement won't be visible in the video shot later on, as the video recording is set to pause during that time.

**HINT**

**Correct measurement**

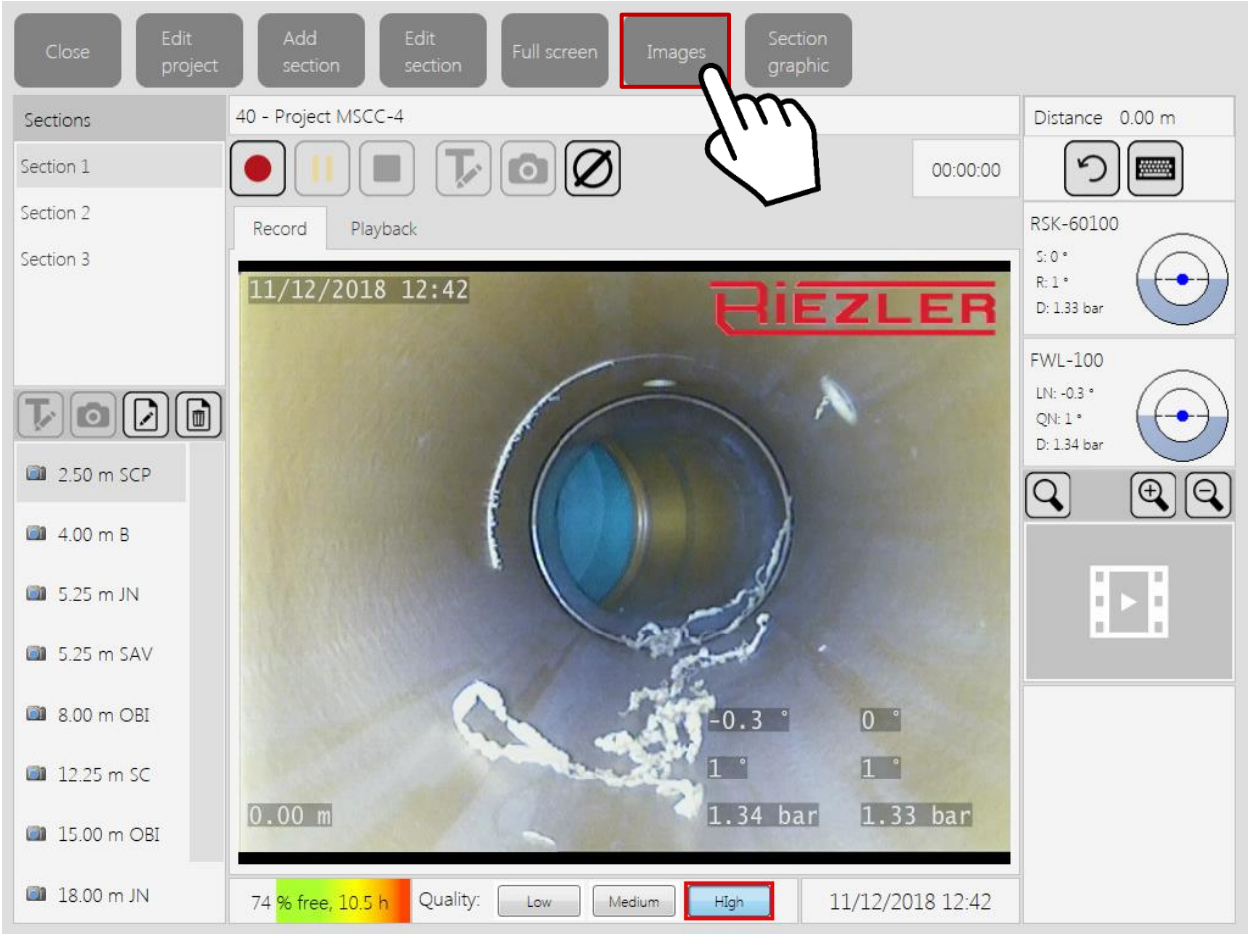
To guarantee a correct measurement, the camera head has to be centered in the pipe. When this is not the case, the measured values can be inaccurate or wrong.



## 6.5. Image Viewer

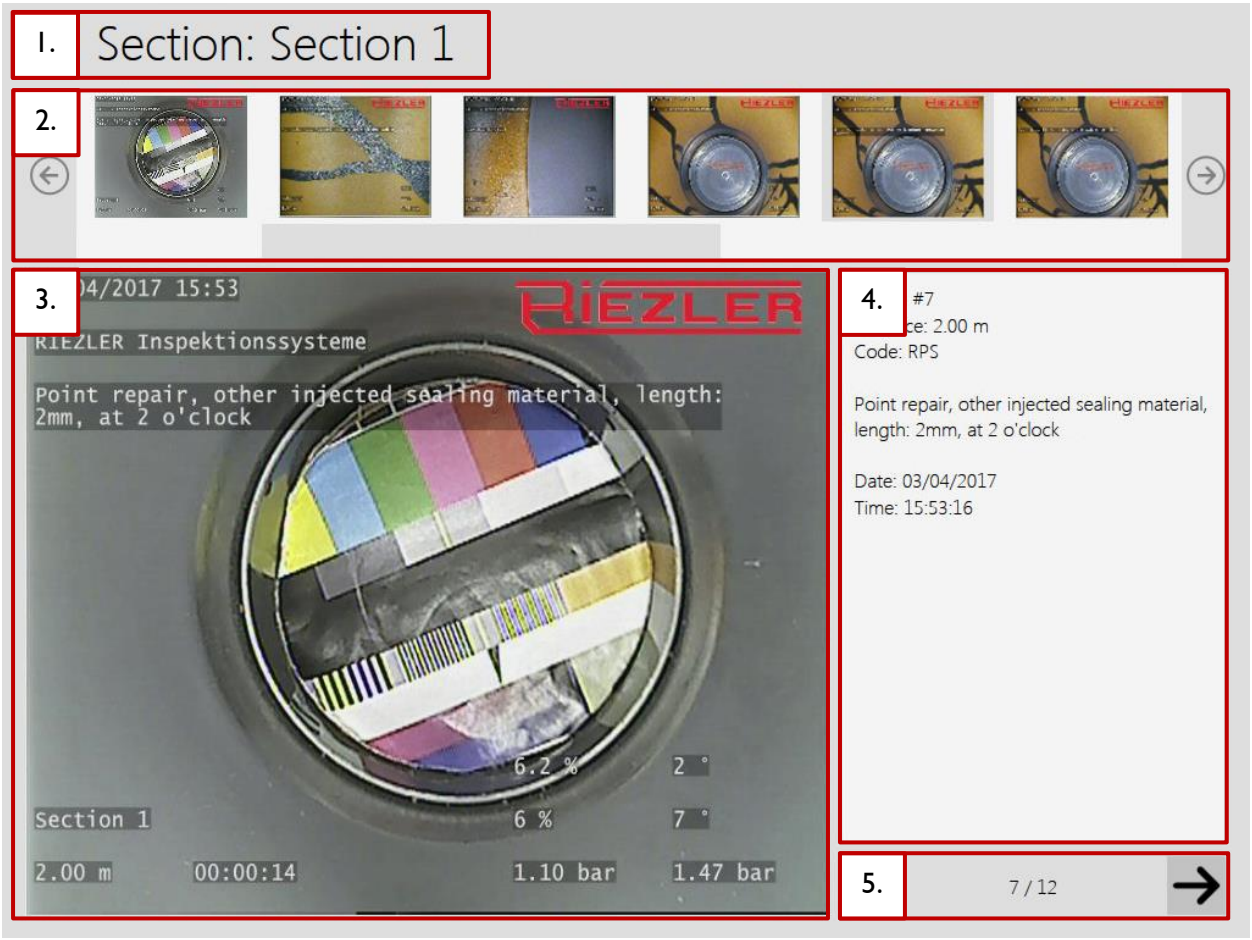
If you want to have a look at all taken pictures of one section, press the Images-button above the camera live image. This can be done during or after an inspection. An ongoing video recording gets paused automatically and re-started after the Image Viewer got closed.




On the following page the Image Viewer will be explained in more detail.

The Image Viewer mask is set up as follows:




1. Section name
Shows the name of the current section

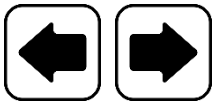
2. Thumbnails area
Up to six thumbnails are shown here

3. Image section
Depicts the currently selected image in full size

4. Information bar
Provides information of the current image

5. Navigation buttons
Let you navigate through the images

## 6.5.1. Handling Image Viewer



With the navigation buttons (point 5.) you can browse through the images. Between both buttons you see the number of the current image.

Alternative to browse with the navigation buttons you can also select an image directly by clicking its thumbnail in the thumbnail area (point 2.).

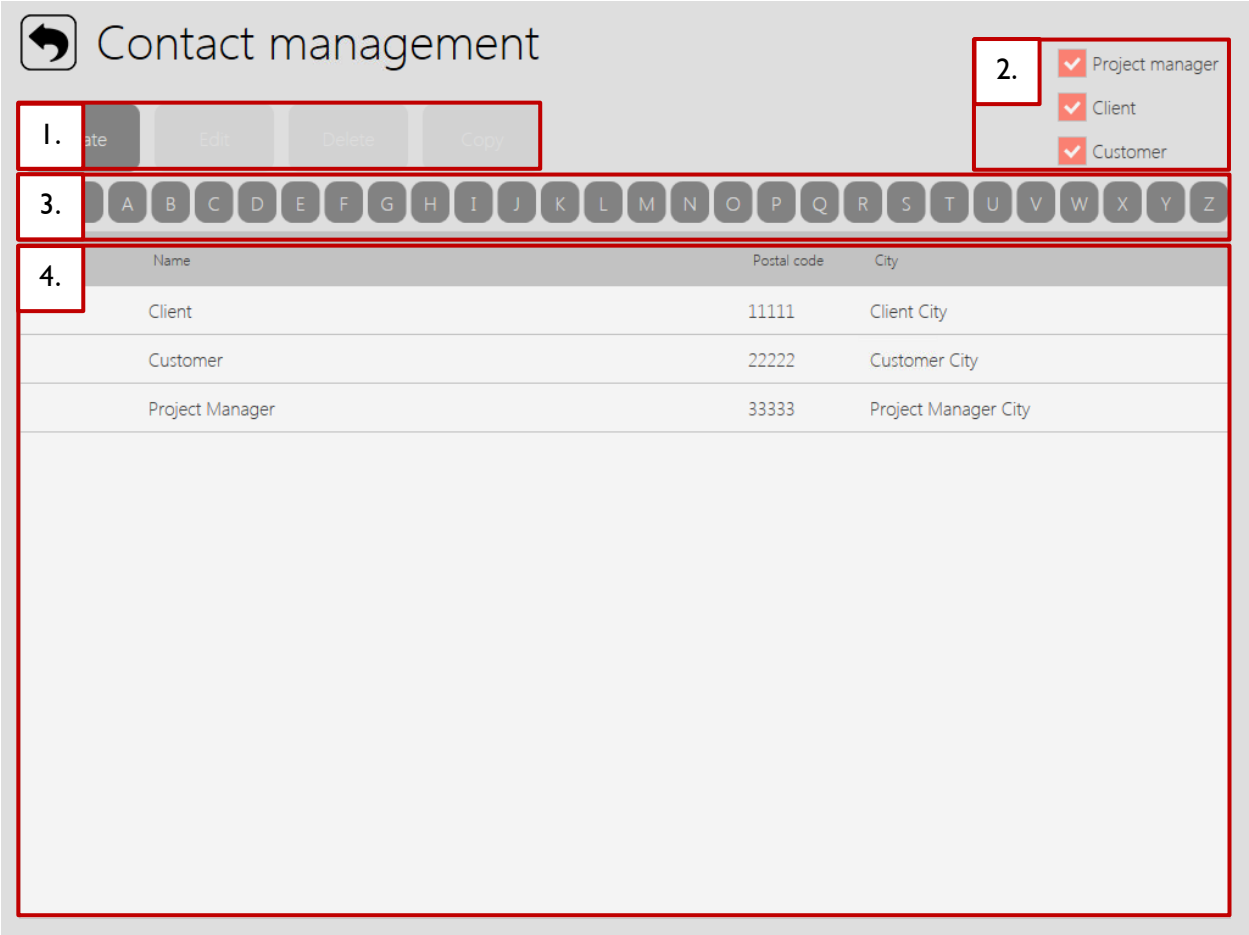
Up to six thumbnails are depicted in the thumbnail area. Are there more than six images for the current section you can use the small, grey arrow-buttons to browse through all thumbnails.



# 7. RIVISION: CONTACT MANAGEMENT

The contact management allows you to organize all your commonly used customer-, project leader- and client-contact information. The created contacts can easily be used when creating a new project. The time-consuming, recurring entering of contact information can be skipped this way.




1. Menu bar
Find all functions to manage your contacts

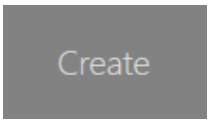
2. Contact filter
Filter contacts by their type

3. Letter jump label
Jump directly to a section of customers that start with the chosen letter

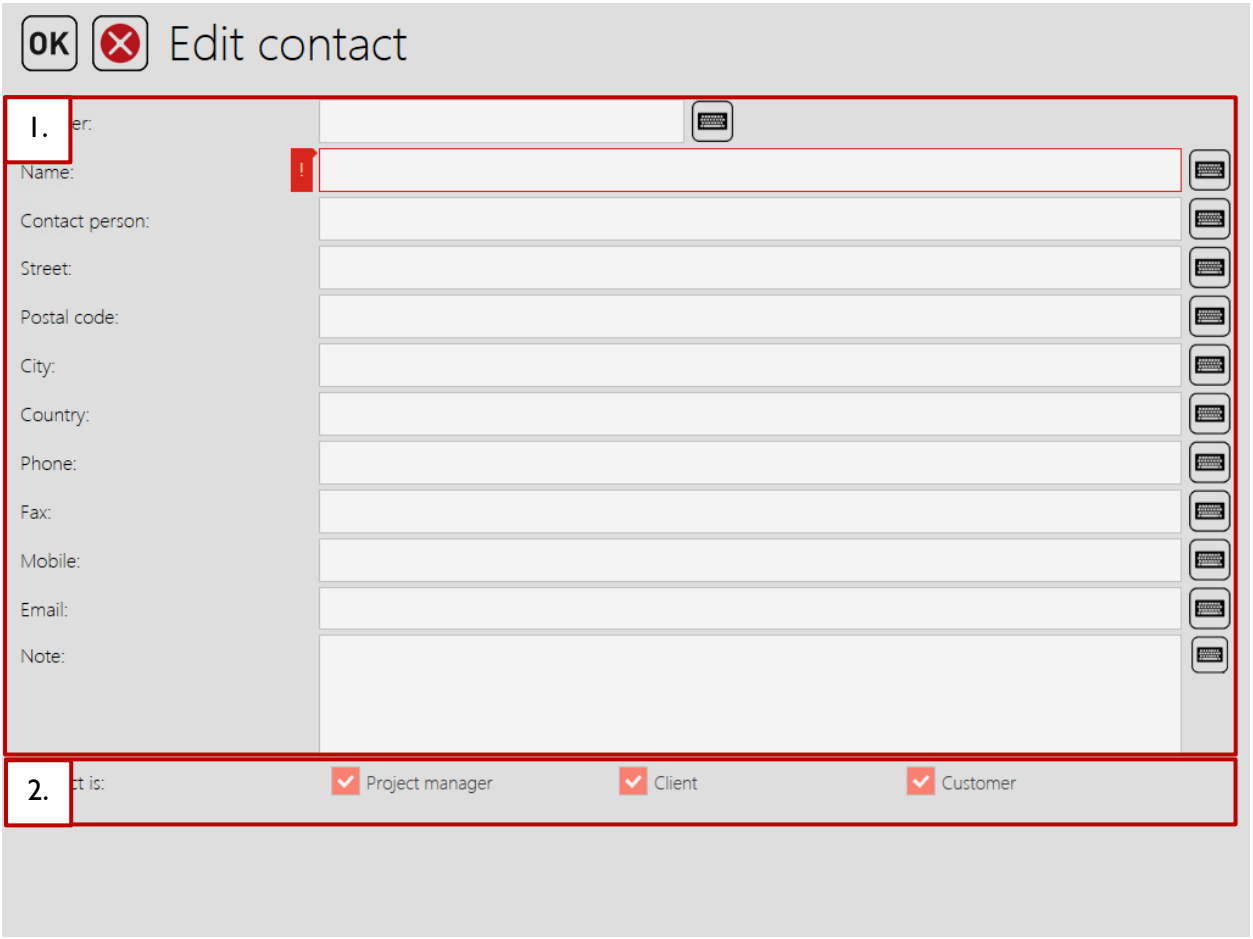
4. Contacts list
All created contacts are listed here

## 7.1. Create contact



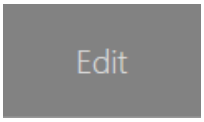

Press the „Create“-button to create a new contact.




All contact information (point 1.) can be entered by the onscreen keyboard. The only mandatory field is the (company) name of the contact. All other fields are optional.

With „Contact is:“ (point 2) you can choose which type this contact will be. That simplifies searching for contacts when creating a project later on.

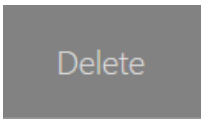
## 7.2. Edit contact




Mark a contact in the contact list and press „Edit“. Contacts can be edited as easy as created. Make the desired changes and save by pressing OK. Press Cancel to discard the changes.

## 7.3. Delete contact




Mark one or more contacts in the contact management list and press „Delete“. Used contact information in projects won’t get lost. You can safely delete contacts without losing their information in the project core data.

## 7.4. Copy contact

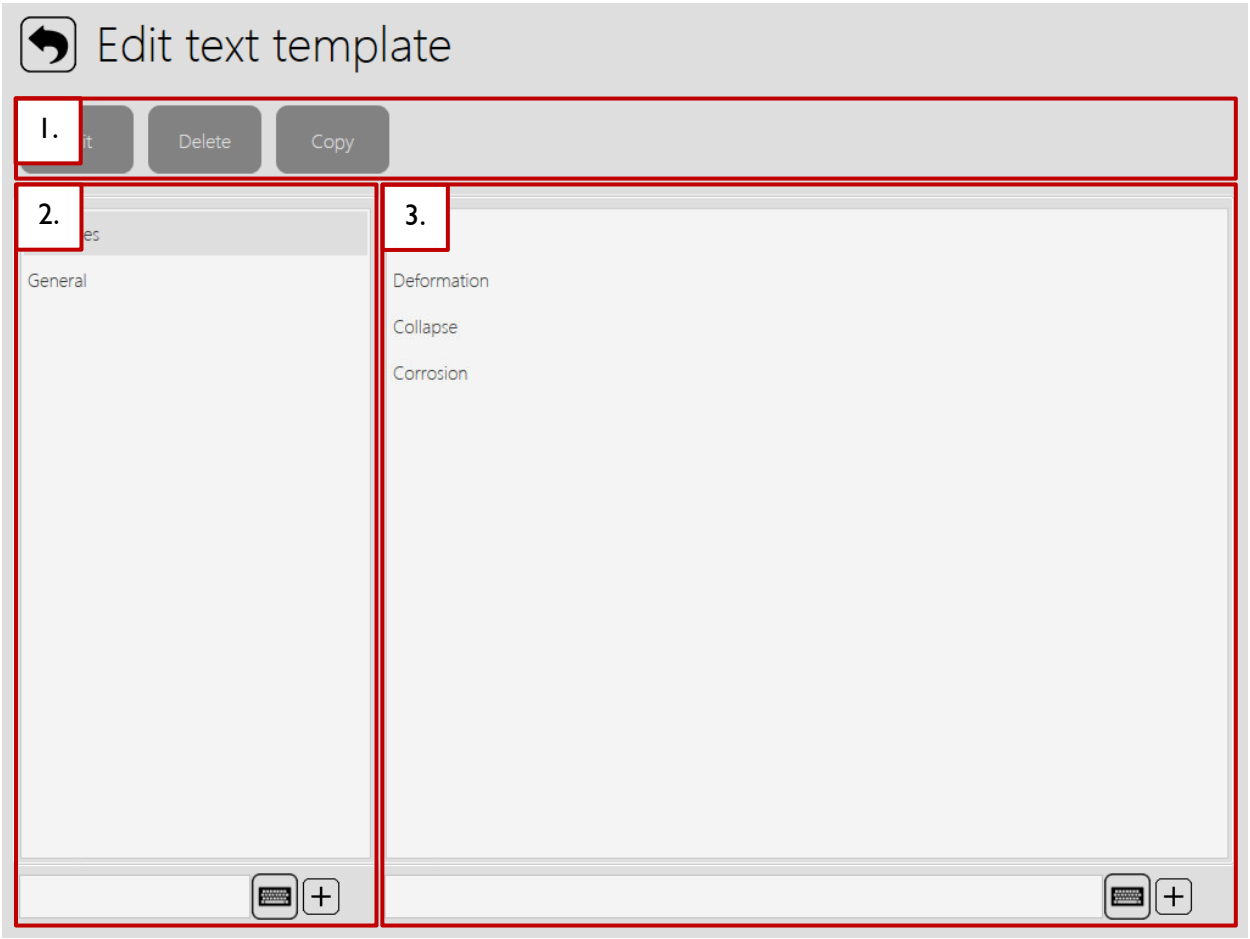

Mark one contact in the contact list and press „Copy“.
Copied contacts are labeled with „ – copy“ at the end of the name to be easier distinguishable. The name can certainly be edited – like all other fields of course.

# 8. RIVISION: TEXT TEMPLATES

The text template database lets you pre-built commonly used capture- / damage-texts which can easily be displayed in later inspections.

The text templates can only be used when no damage catalogue is used in a project. They can't be used in projects with a damage catalogue. In that case you can use damage abbreviations (see chapter 6.2. on page 41) to display pre-built capture texts according to norm.




1. Menu bar
Edit, delete or copy text groups or text templates

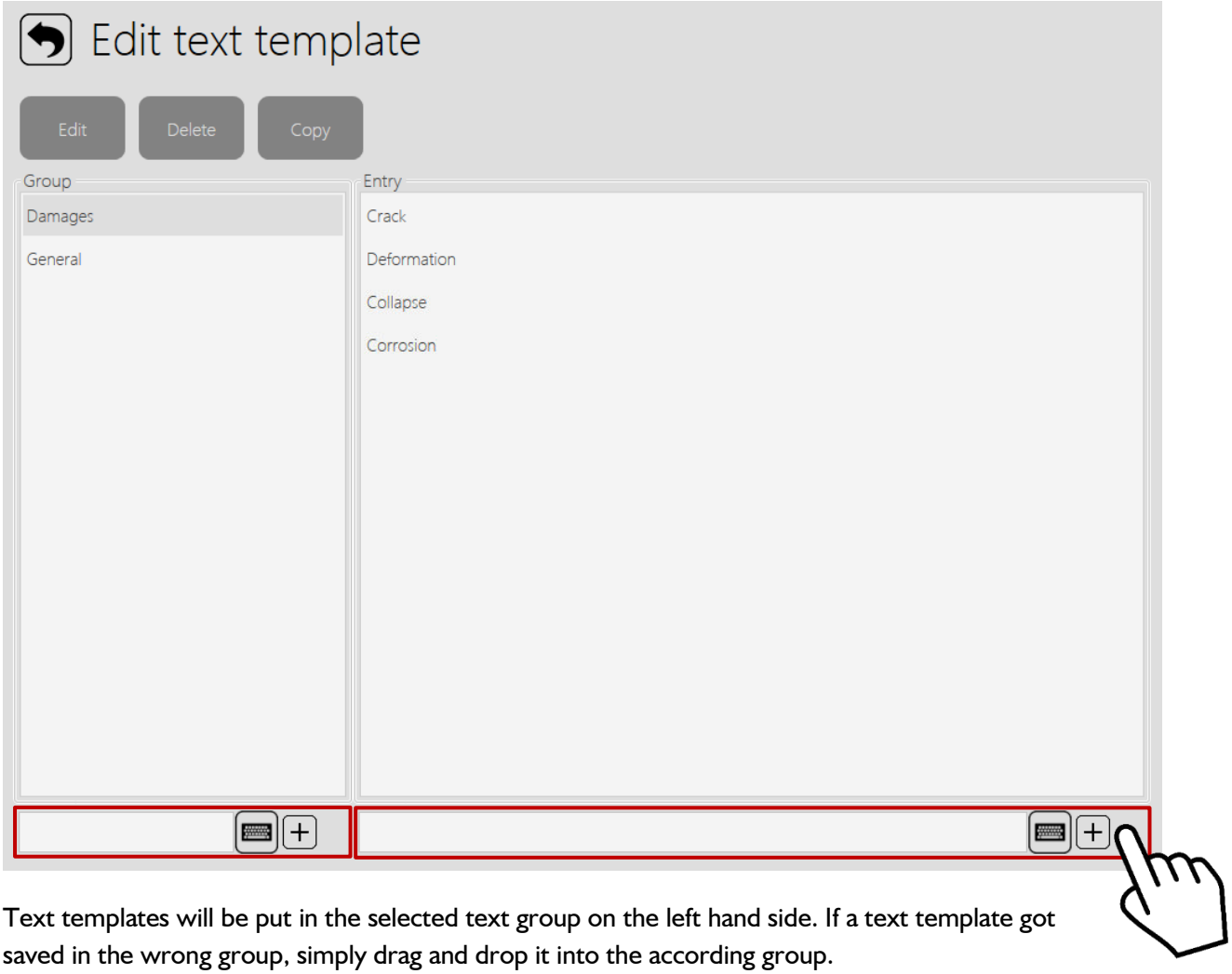
2. Text groups
Similar text templates can be pooled in groups

3. Text templates
Shows all text templates in a text group

## 8.1. Create text template or text group

To create a new text template or text group, open the according onscreen keyboard (the one on the left hand side for text groups, the one on the right hand side for text templates). Enter a text and save the entry by pressing the plus-button.

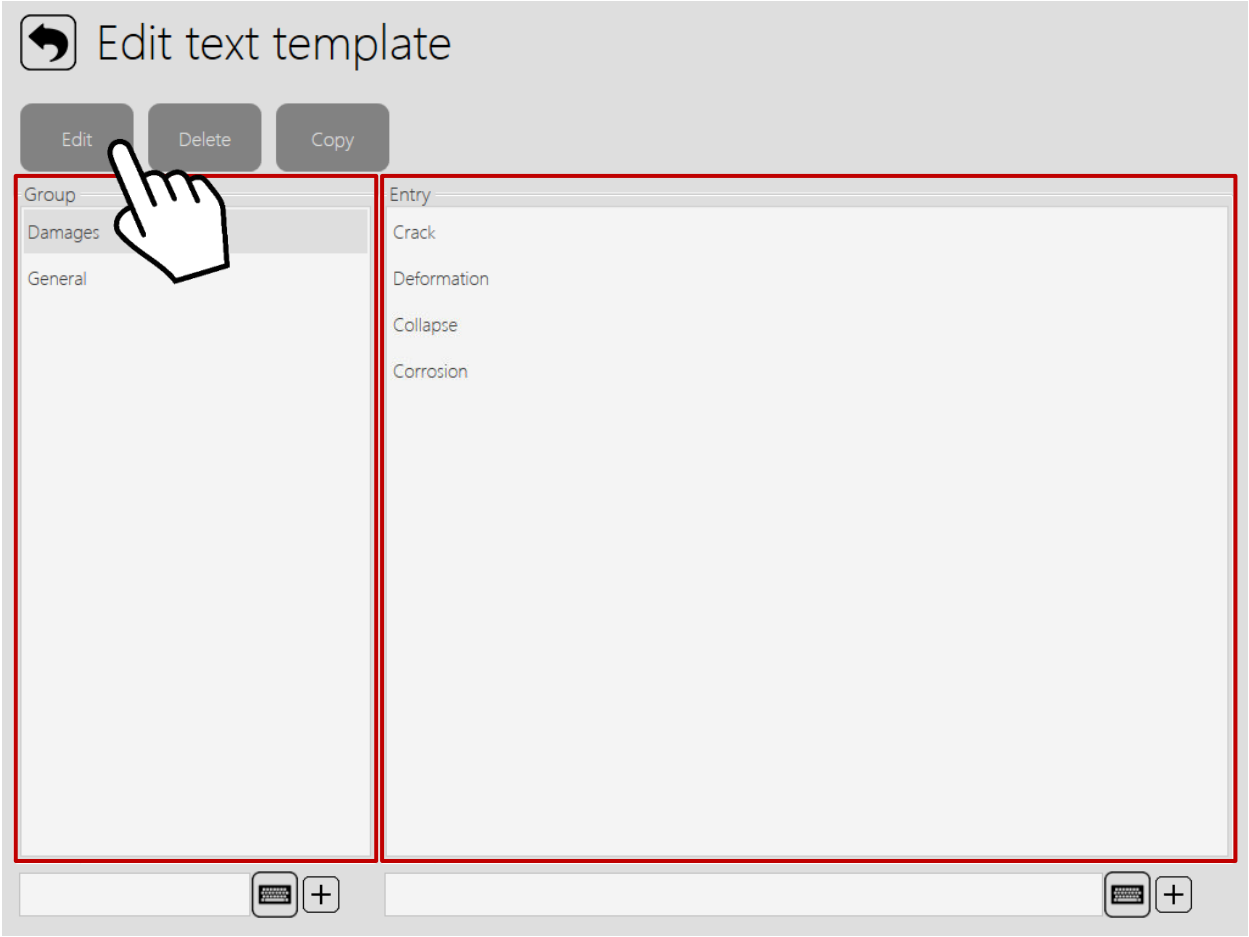



Text templates will be put in the selected text group on the left hand side. If a text template got saved in the wrong group, simply drag and drop it into the according group.

## 8.2. Edit text template or text group

Select a text template or text group by clicking on it and then press “Edit”. Then you can open the according onscreen keyboard on the bottom of the page and edit the label of the text template or text group. Confirm the edit via the little check mark next to the onscreen keyboard button.

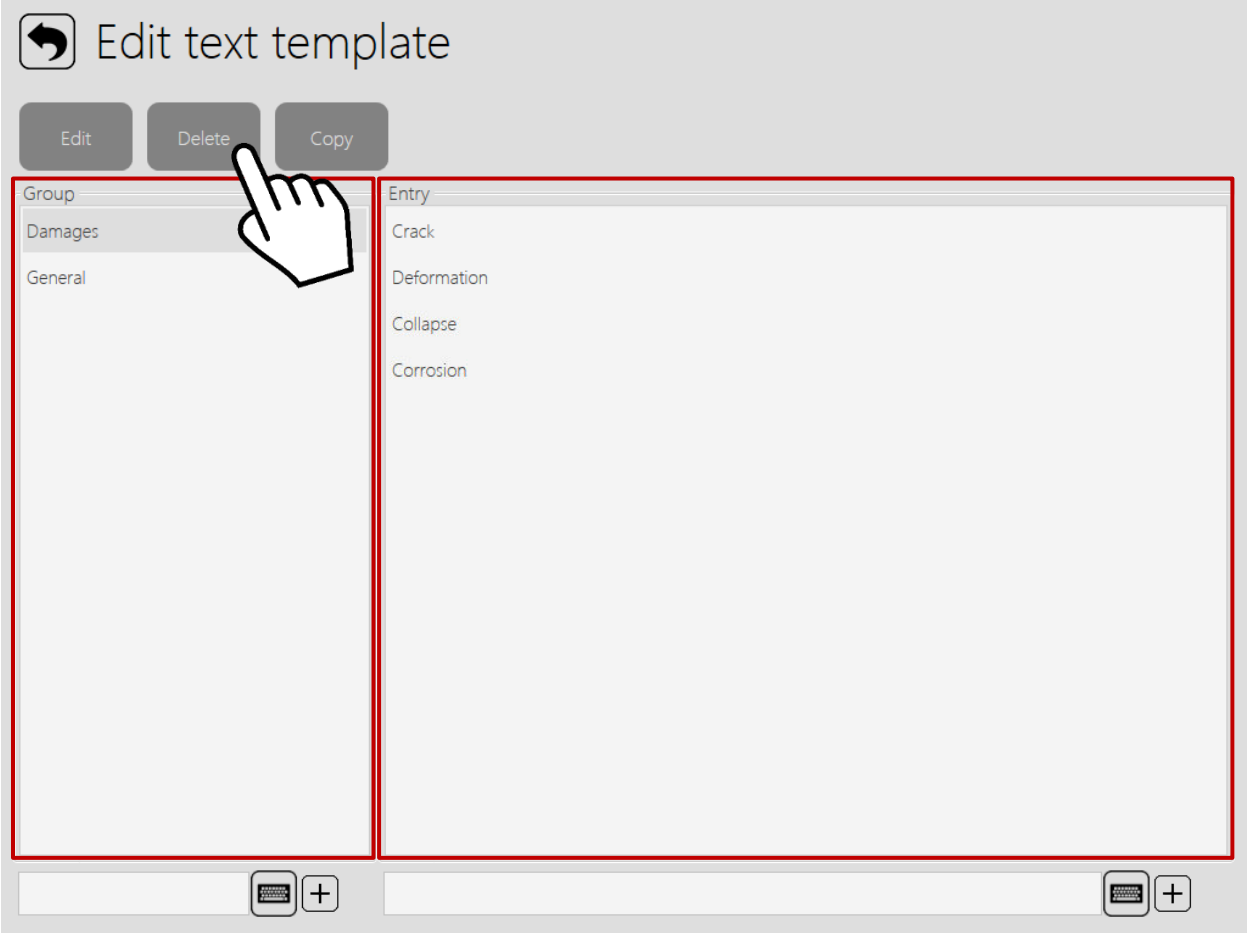




## 8.3. Delete text template or text groups

Select a text template or text group and press “Delete”. Groups can only be deleted after all associated text templates have been deleted beforehand. When this is done, select the text group and delete it.

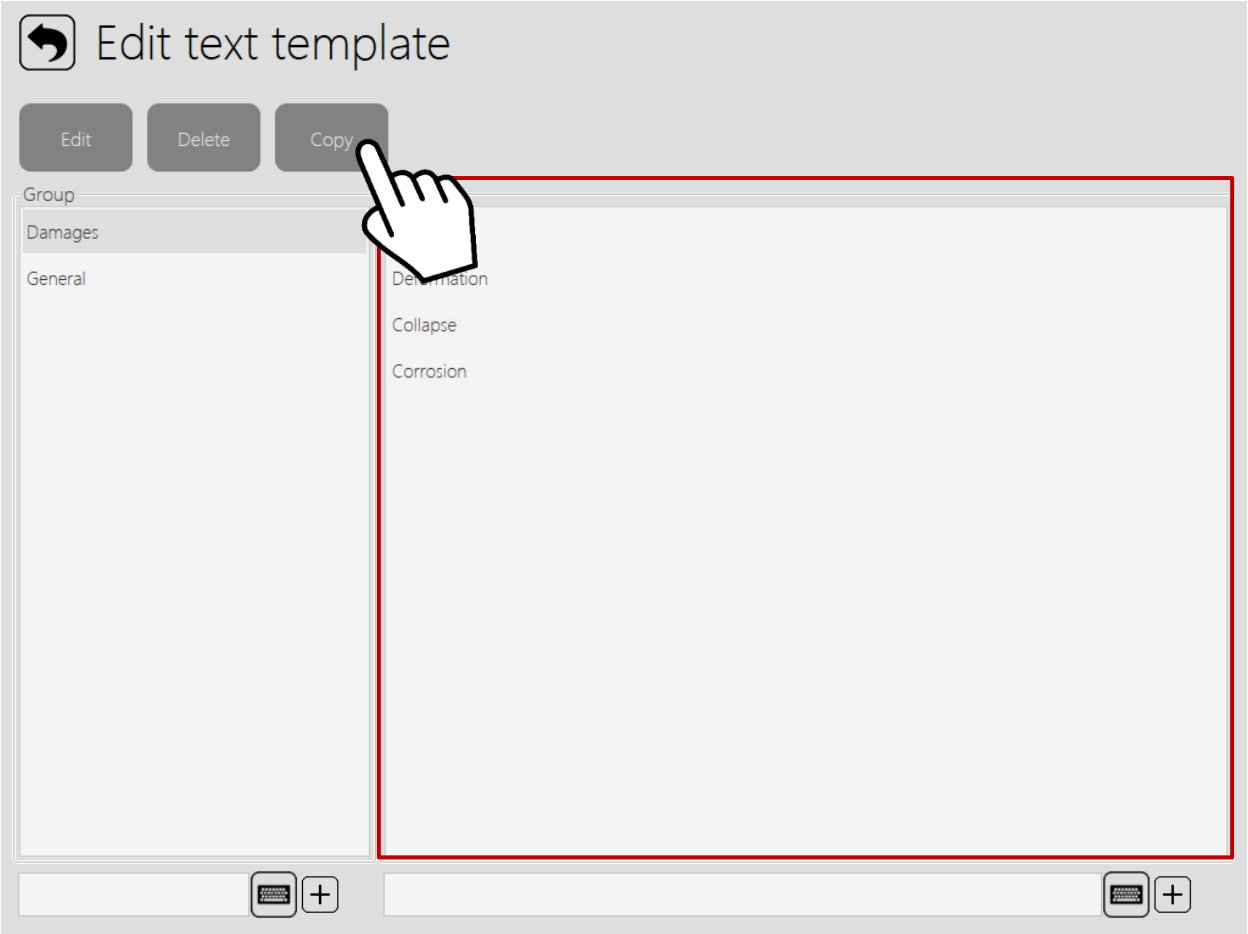




## 8.4. Copy text templates

Select a text template and then click “Copy”. The copied text template contains the initial text and the ending “- copy”. Change the newly created text template if necessary.
Text groups can’t be copied.





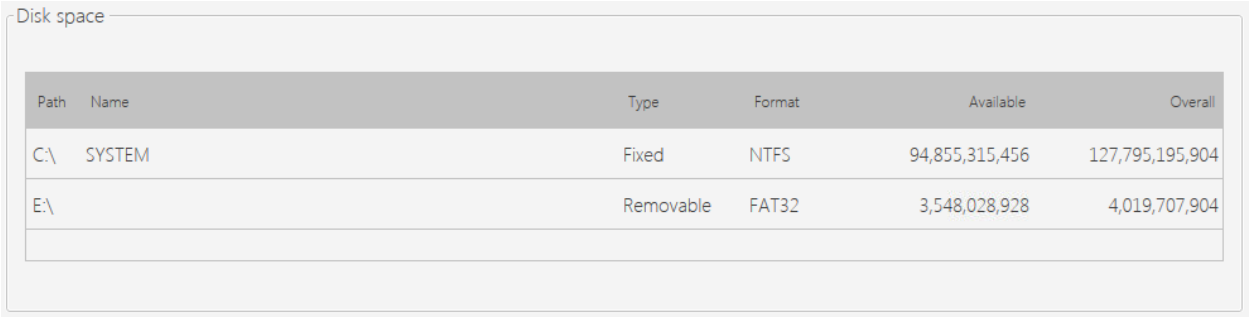
 

# 9. RIVISION: SYSTEM STATUS

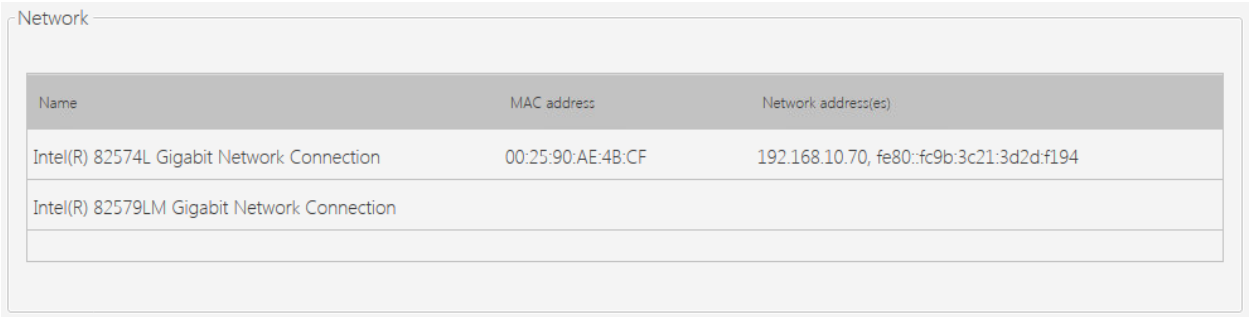
In the system status menu you find detailed information for the connected devices and built-in hardware segmented in four tabs.

## 9.1. General


The system time shows the current date and time. Changing the time is possible by using the time zone settings specified in chapter 3.1. on page 9.




In the „Disk space“-section you see the internal hard drive (type: fixed) and external storage devices (type: removable) and can check their available disk space.




The MAC- as well as the IPv4- and IPv6-addresses of the control unit are shown in the „Network“-section.

## 9.2. Statistics

| Year | Month | Distance | Carriage pressure incorrect | Camera pressure incorrect |
|---|---|---|---|---|
| 2018 | 12 | 0.01 m | 0.00 m | 0.00 m |
| 2018 | 11 | 1.46 m | 0.00 m | 0.00 m |

This tab shows accumulated statistics by month for driven distance, incorrect crawler and camera pressure.

**HINT**

**Incorrect crawler / camera pressure**

Too high or too low crawler or camera head pressure can lead to irreparably damages in the devices. Therefore, always control the correct pressure before an inspection. During an inspection you can check the pressure in the device information bar.

## 9.3. Device status

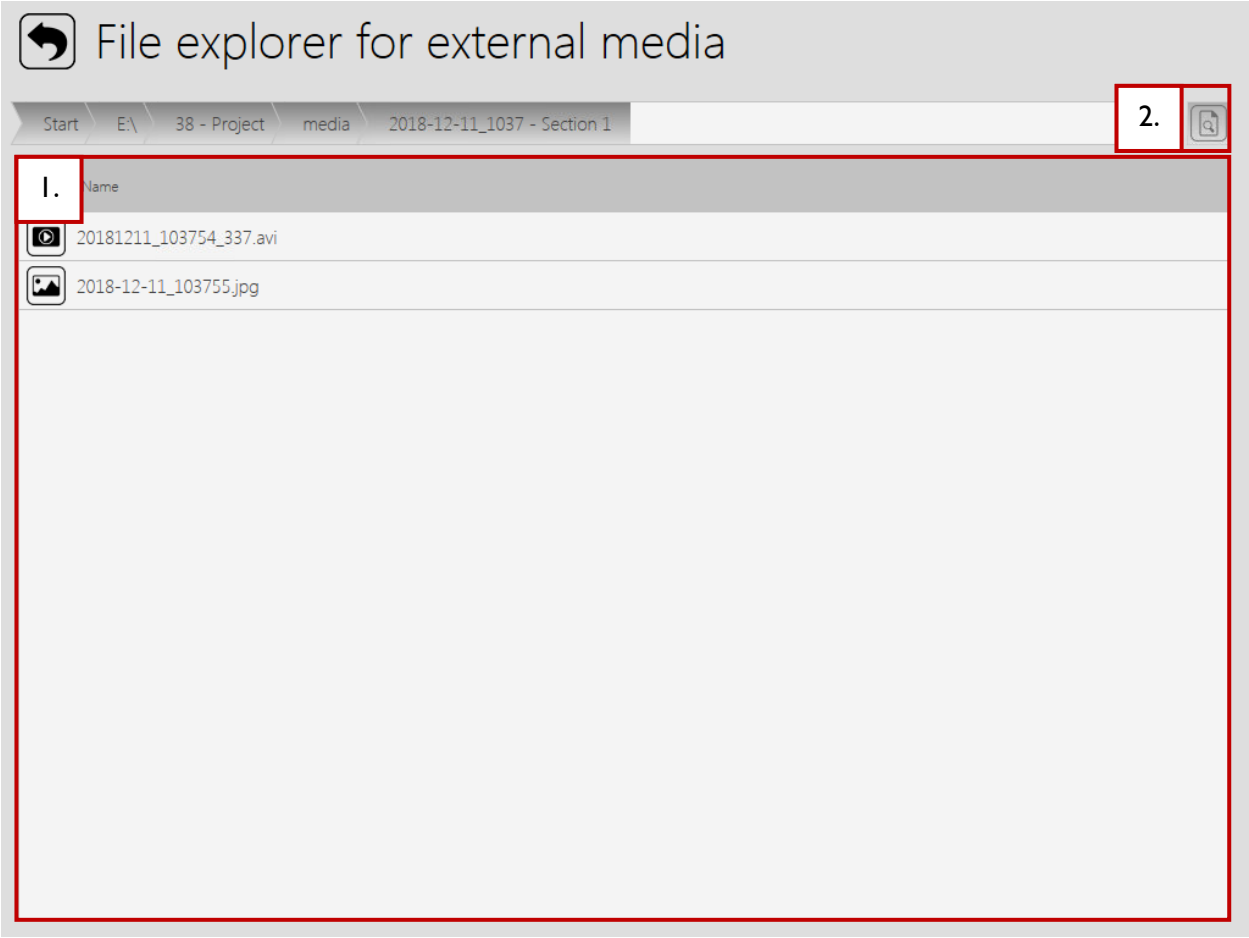
| Control unit | | Camera | | Crawler | |
|---|---|---|---|---|---|
| Status: | 3 | Status: | 3 | Status: | 3 |
| Version: | 6 | Version: | 6 | Version: | 6 |
| Pressure: | 980 | Pressure: | 980 | Pressure: | 980 |
| Temperature: | 23.4 | Temperature: | 23.4 | Temperature: | 23.4 |
| Device type: | 0 | Device type: | 19 | Device type: | 10 |
| Voltage: | 12.01 | Voltage: | 12.01 | Voltage: | 12.01 |
| Current: | 1450 | Current: | 1450 | Current: | 1450 |
| Operating hours: | 5 | Operating hours: | 25 | Operating hours: | 10 |
| Bus system quality: | 95 | Bus system quality: | 95 | Bus system quality: | 95 |

All connected inspection system components and their (system) values are shown in the „Device status“-tab. These values are mainly helpful for our service staff.

# 10. RIVISION: EXTERNAL DEVICE

View PDFs, pictures and videos from your external device directly on your control unit. Navigate through the folders until you've found the desired file. Mark the file and open (or close) it by pressing the button on the top right.



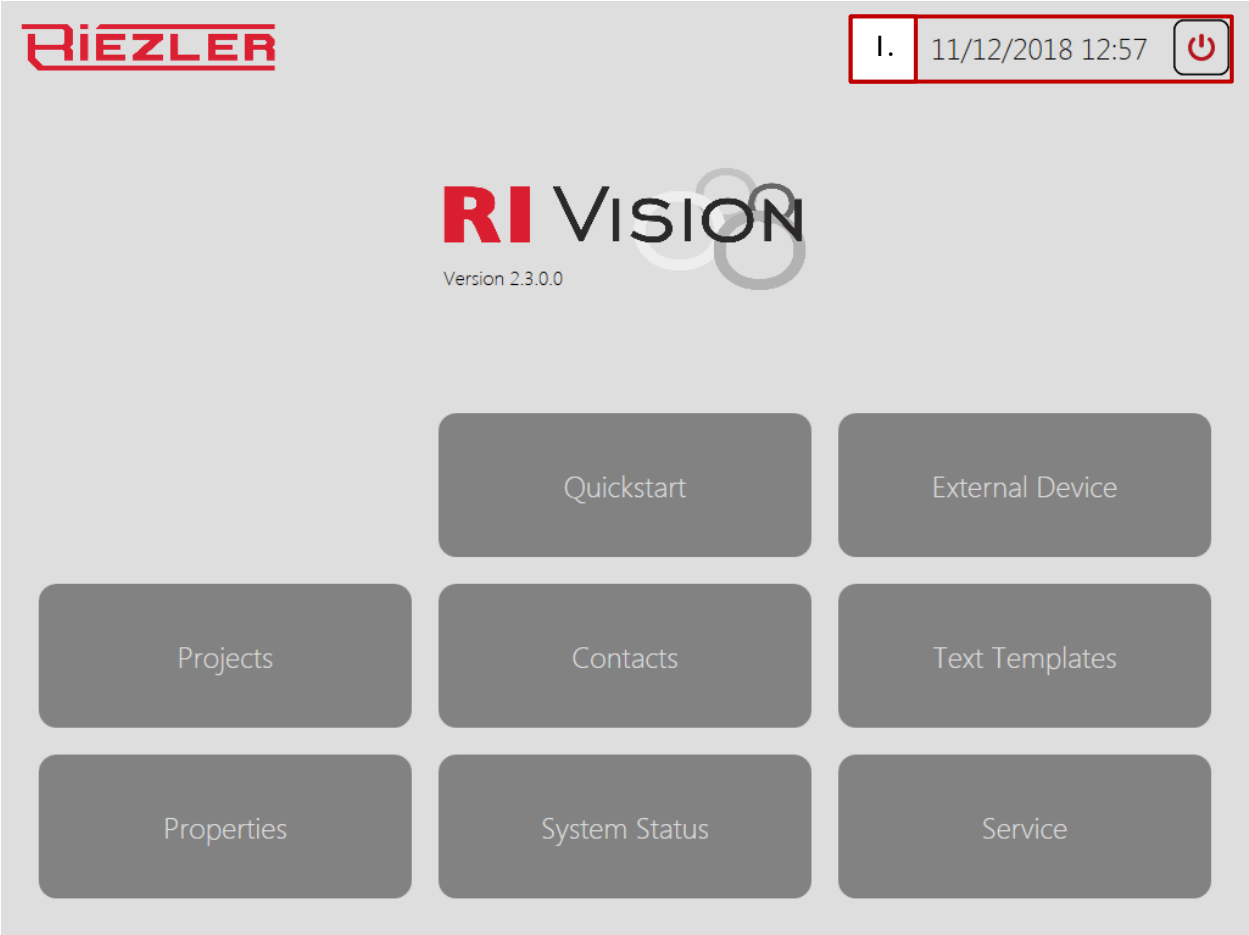


# 11. RIVISION: SERVICE

This menu is password protected and serves only maintenance purposes.

# 12. POWER OFF / DISASSEMBLE THE CONTROL UNIT




Press the power off button (point 1.) on the home screen of the control unit.
Power off the camera by pressing the camera-button [2.2].

After all systems have been shut down properly you can fold in the (case) cover and lock it by using the clasps (MSE-500 only).

Unplug all attached devices and apply their protection covers again. The case is now ready for transport.

**CAUTION**

**Transportation**

The case is built robust and durable. However, the inside holds computer parts, so please transport the case carefully and don't expose it to hits etc.