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Congratulations!

By purchasing the endoscope camera PowerFix PEK 2.3 A2, you have opted for a high-quality product. The endoscope camera with a flexible gooseneck and adjustable LED lighting can be used in inaccessible places to aid inspection and fault analysis. You can use the built-in video-out socket, for example, to display the image on a TV.

Familiarise yourself with the endoscope camera before using it for the first time, and read these operating instructions carefully. Pay particular attention to the safety instructions and use the endoscope camera only as described in these operating instructions and for the specified range of applications.

Keep these operating instructions in a safe place. Include all documents when passing on the endoscope camera to someone else.

Symbols used and their meaning



DANGER! This symbol in conjunction with the "danger" note indicates an imminent dangerous situation which, if not prevented, could result in serious injury or even death.



WARNING! This symbol in conjunction with the "warning" note indicates important information for safe use of the device and the safety of the user.



This symbol indicates other important information on the topic.

Intended use

The endoscope camera PEK 2.3 A2 is an optical inspection device which is not approved for medical use.

The endoscope camera with a gooseneck and LED lighting can be used in inaccessible places to aid inspection and fault analysis.

The gooseneck is watertight and suitable for use in aqueous liquids provided the immersion depth does not exceed 90cm. Please note that only the gooseneck may be exposed to moisture, and not the control panel (TFT screen with handle). Use of the device in oils, lyes or acids is not permitted.



DANGER! The endoscope camera is not suitable for medical applications or use and should never be inserted into body orifices.

The manufacturer does not assume any liability if

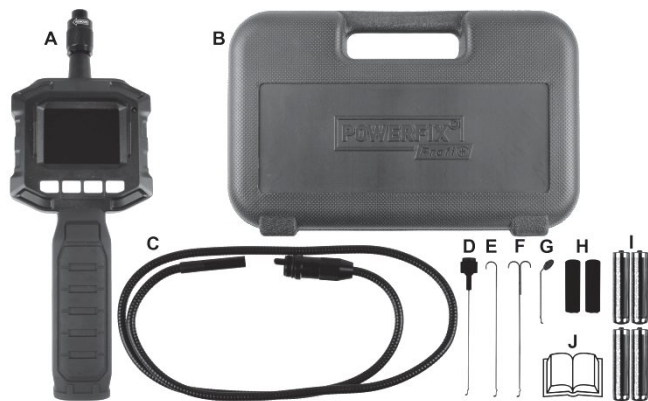
- The endoscope camera is not used in accordance with its intended purpose.
- Material damage or personal injuries are caused by incorrect use of the endoscope camera or non-observance of these instructions.
- The endoscope camera is damaged, incomplete or modified prior to connection and use.

This is an information technology device. It may only be used for private purposes, but not for industrial, commercial or medical purposes.

Please observe the regulations and laws in the country of use.


Supplied items

Take the device and all accessories from the packaging. Remove all packaging material and check that all parts are complete and undamaged. In the event of an incomplete or damaged delivery, please contact the manufacturer.



- A Endoscope camera PowerFix PEK 2.3 A2
- B Hard shell case
- C Flexible gooseneck with camera head and LED lighting
- D Magnet camera attachment
- E Hook camera attachment
- F Double hook camera attachment
- G Mirror camera attachment
- H 2 attachment fixtures
- I 4 x 1.5V AA / LR6 batteries
- J These operating instructions (symbolic representation)

Technical data

TFT screen	5.9cm / 2.31" screen size
Resolution	960 (RGB) x 240 or 320 (pixels) x 240
Camera lighting	4 white LEDs (with 8-stage adjustment)
Illuminated display	with 8-stage adjustment of brightness
Power supply	6V  4 x 1.5V AA / LR6 batteries
Run time	approx. 8 hours
Ambient/outside temperature	-10°C to +50°C
Permissible storage conditions	-10°C to +50°C, max. 85% rel. humidity (non-condensing)
Total length of gooseneck with camera head and adapter base	approx. 1050 mm
Endoscope camera diameter	8 mm
Flexible gooseneck Ingress Protection Rating	IP 67
Weight (including batteries)	approx. 407 g
Dimensions of hand unit (W x H x D)	257 x 92 x 44 mm

The technical data and design may be changed without notification.

Safety instructions

General information



DANGER! The endoscope camera is not approved for medical use! There is a risk of a potentially fatal injury!

- If smoke is produced, or there are any unusual sounds or smells, the device should not be used until it has been inspected by authorised service personnel. In this case, switch off the device immediately and remove the batteries.
- Use of the camera on humans and animals is not permitted. The user, and not the manufacturer, is responsible for any personal injury or material damage resulting from incorrect use.



DANGER! Children and persons with disabilities

Electrical devices do not belong in the hands of children. Persons with limited physical, sensory or mental abilities should also only use electrical devices appropriately. Never allow children or persons with disabilities to use electrical devices unsupervised, unless they have been instructed accordingly or are supervised by a person responsible for their safety. Children should always be supervised to ensure that they do not play with this device.

Always keep plastic packaging out of reach.



It poses a suffocation risk!



DANGER! Screen

Do not exert any pressure on the display and keep sharp objects away from the display. There is a risk of injury if the display is broken. Wear gloves when you are gathering the broken parts and contact the manufacturer if necessary. If the screen becomes scratched or damaged in any way, take special care to ensure that no liquid leaks from the screen.

If liquid has leaked, follow the instructions below:

- If the liquid comes into contact with your skin, wipe it off with a clean cloth and rinse the area of contact with a large amount of water. Consult a doctor if necessary.
- If the fluid gets into your eyes, rinse them thoroughly with plenty of clean water. Then consult a doctor immediately or seek medical treatment.
- If you swallow the liquid, first rinse your mouth with water and then drink a large amount of water. Consult a doctor immediately!



WARNING! Operational safety

The housing of the endoscope camera must not be opened because it does not contain any parts that require maintenance. Ensure that the device is not subject to extreme temperature fluctuations, since this could result in condensation and electrical short circuits. If the device was subjected to extreme temperature fluctuations, however, wait (approx. 2 hours) until the device has reached ambient temperature before use.



DANGER! Batteries

Always ensure correct polarity of the batteries. Please note the markings on the batteries and in the battery compartment. Never try to recharge batteries and never throw them into a fire. Never use different batteries (old and new, alkaline and carbon, etc.) at the same time. Remove the batteries if you will not be using the device for an extended period of time. In the event of improper use, there is a risk of explosion and leakage.

Batteries may not be deformed or opened as leaking chemicals can cause injuries. In the event of skin or eye contact with chemicals, they must be immediately rinsed with generous amounts of water and a doctor must be consulted. Batteries and small parts may cause choking resulting in death or

serious injury. Store the batteries in a safe place. If a battery is swallowed, seek medical help immediately.



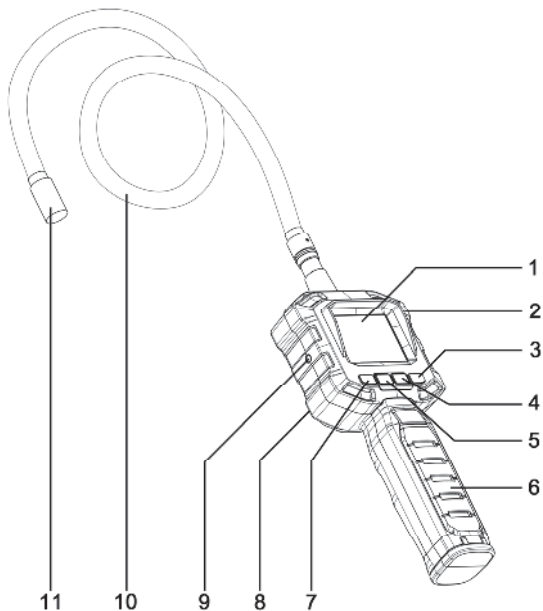
WARNING! Operating environment/ Environmental conditions

Keep the control panel (TFT screen with handle) away from moisture and ensure that no foreign objects penetrate the device. Never place any objects filled with liquids, for example, vases or drinks, on or near the device. Avoid vibrations, dust and heat, and ensure that the device is not exposed to direct sunlight or bright artificial light. The device could be damaged as a result.

Ensure that no fire sources (e.g. burning candles) are placed on or near the device.

First use

Overview of the controls and button functions



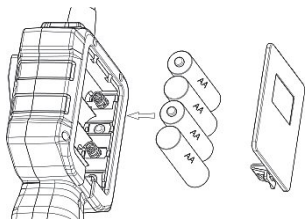
- | | |
|------------------------------------|---|
| 1. Screen | 7. Brightness adjustment display / zoom function button |
| 2. Power indicator | 8. Battery compartment (at the back of the device) |
| 3. On/off switch | 9. Video-out socket |
| 4. View/rotate image button | 10. Flexible gooseneck |
| 5. Camera head illumination button | 11. Camera head with LEDs |
| 6. Handle | |

Inserting/replacing the batteries

Ensure that the camera is switched off. The battery compartment [8] is located at the back of the device.

Remove the battery compartment cover by pressing the release mechanism and lifting the cover upwards. The ribbon in the battery compartment is intended to facilitate the subsequent removal of the batteries. When inserting the batteries, make sure that this ribbon runs completely under all 4 batteries and that you can still access the end of the ribbon after the batteries have been inserted.

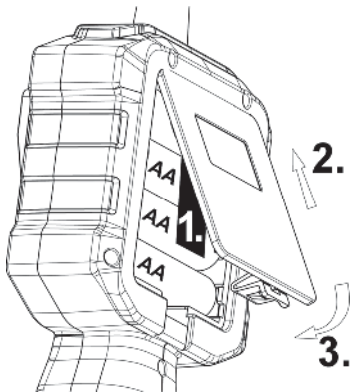
Insert 4 x 1.5V AA / LR6 batteries with the correct polarity in the battery compartment. Please note the markings in the battery compartment and on the batteries.



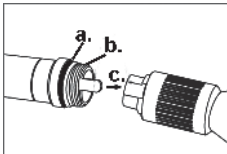
1. The end of the ribbon should lie smoothly between the batteries and battery compartment cover.

2. Close the battery compartment by first inserting the two plastic tabs of the battery compartment cover into the slots provided for this purpose on the housing of the endoscope camera.

3. Then press it downwards until it audibly engages.

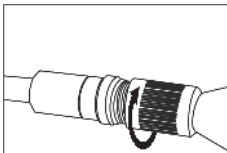


Attaching/detaching the gooseneck

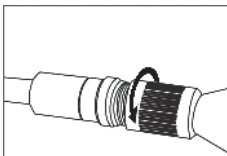


Proceed as follows:

To ensure the tightness of the screw connection, remove any impurities on the rubber ring (**a.**) and on the screw thread (**b.**) with a slightly damp cloth. To maintain the flexibility of the rubber ring, you should lubricate it occasionally, for example, with Vaseline. The gooseneck can only be attached in one direction due to the polarity protection feature. Insert the polarity protection for this purpose into the slot provided (**c.**).



The gooseneck can then be screwed on. Turn the screw connection to the right until it is firmly secured.



To detach the gooseneck, turn the screw connection towards "Remove" until it is released. The gooseneck can then be pulled off by exerting a little force.

Use of the device

Switching the endoscope camera on and off

Press the on/off switch [3] for approximately 2 seconds to switch the endoscope camera on or off. The power indicator [2] lights up green and, after a short delay, the image is shown on the screen [1].

Lighting

The camera head is equipped with 4 LEDs. This lighting can be switched on with the camera head illumination button [5]. This button can also be used to gradually increase the brightness of the LEDs by pressing it several times. 8 different levels can be set. When the highest level is reached and the camera head illumination button [5] is pressed again, the lighting switches itself off. If the lighting is reset, it reverts to the default setting after the camera has been switched off and then switched on again.

Screen brightness

The brightness of the screen can be changed with the brightness adjustment display / zoom function button [7]. The brightness of the screen is gradually increased when this button is pressed several times. 8 different levels can be set. When the highest level is reached and the brightness adjustment display / zoom function button [7] is pressed again, the brightness adjustment is reset to the default value. A reset to the default setting also occurs when the camera is switched off and then switched on again.

Zoom function

The zoom function can be activated via the brightness adjustment display / zoom function button [7]. Keep this switch pressed for approximately 3 seconds to gradually increase the zoom function. There are two zoom levels available. When the highest zoom level is reached and the brightness adjustment display / zoom function button [7] is pressed again for approximately 3 seconds, the zoom function is deactivated again. A reset to the default setting also occurs when the camera is switched off and then switched on again.

Changing the display

The camera image can be rotated by 180° and mirrored vertically or horizontally by pressing the view/rotate image button [4]. This setting enables you to display four different views of your image. If the display is changed, the default display is shown after the camera has been switched off and then switched on again.

Video-out function

You can use this function, for example, to display the images of the camera on a TV. Depending on the device on which you want to perform the playback, you will require a connection cable which must have a 3.5mm jack plug on one side for connecting to the video-out socket [9] of the endoscope camera. The other connector may vary depending on your playback device. For further details, please read the user manual for your playback device. A connection cable is not included in the items supplied with the endoscope camera.

To use the video-out function, proceed as follows:

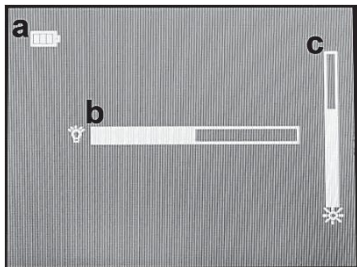
- Switch off the endoscope camera.
- Connect the video-out socket [9] of the endoscope camera to your playback device with a suitable connection cable. Note the corresponding user manual to adjust your playback device correctly.
- Switch on the endoscope camera with the on/off switch [3]. The image is now displayed on both the screen of the endoscope camera and on your playback device.



Please note that pressing the view/rotate image button [4] and brightness adjustment display / zoom function button [7] only affects the screen display of the endoscope camera. Pressing these buttons is irrelevant for the display of the playback device in use, for example, TV.

Screen displays

The following displays are shown on the screen:



- a Battery charge level indicator (permanent)
- b LED lighting of the camera head (display for approximately 3 seconds when pressing the camera head illumination button [5]).
Screen brightness (display for approximately 3 seconds when pressing the brightness adjustment display / zoom function button [7]).
- c When the zoom function is activated, a magnifying glass icon is also displayed.

Fitting the attachments

The device is supplied with the following attachments/fixtures:



Magnet [D]



Hook [E]



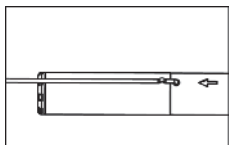
Double hook [F]



Mirror [G]

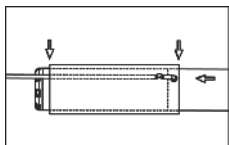


Attachment fixture [H]



Place the small barbed hook of the attachment into the opening provided at the end of the gooseneck just below the camera head.

Note: The attachment fixture of magnet and double hook attachments must be slid onto the attachments first due to their size.



Then slide the attachment fixture carefully and completely over the camera head. Ensure that the attachment is positioned in the slot provided in the attachment fixture.

Storage when not in use



If you will not be using the endoscope camera for an extended period of time, remove the batteries to avoid leakage.

Keep the clean, dry endoscope camera and accessories in the supplied hard shell case (B) in a cool, dry place.

Troubleshooting

The device cannot be switched on

1. Batteries may be empty, thus replace the batteries.
2. Check whether the batteries are inserted correctly.

No image in the display/distorted images

Check the connection between the gooseneck and hand unit. Remove the gooseneck and then attach it again as described in the section "Attaching/detaching the gooseneck".

Distorted images on an external screen, for example, TV

Check that the cable is connected. You may have to use a different or better cable.

Cleaning

Clean the device with a dry cloth if soiled, and use a slightly damp cloth to remove stubborn dirt. Make sure that no major pressure is exerted when cleaning the display to avoid damaging it. Do not use any solvents, corrosive or gaseous cleaning agents. Ensure that no moisture penetrates the control panel.