# KRAFTWERK

# KRAFTWERK

## Video Endoscope

1 GB Memory

3m insertion tube

Your dealer:

**Art. 30002**

**www.KRAFTWERK.eu**

Instructions can be downloaded:

www.kraftwerk.eu

## Table of contents

**Warning**
- This device must not be used for medical or veterinary purposes.
- Do not modify or disassemble the unit.
- Do not use this item in explosive atmospheres.

**Caution**
- Keep the device out of the reach of children.
- Do not look directly into the objective lens at the end of the insertion tube, your eyesight may be seriously damaged.
- Do not forcibly bend, twist or elongate the insertion tube.
- Strong impact on the device may result in the breakage of the objective lens (made of glass) at the tip of the insertion tube.
- Do not use or store the device at a temperature higher than 60 °C or lower than -20 °C.
- Don't use the device in the direct sunshine.
- Store the device in a dry and adequately ventilated environment.
- Keep the device away from acid or alkaline solutions, oil or petrol, and do not use it in an atmosphere containing their vapours.
- Do not remove the SD Memory Card while data is being saved to the card. This may cause the data to be lost or the card to be damaged.

### EC Declaration of conformity

We, KRAFTWERK Europe AG, Mettlenbachstrasse 23, 8617 Moenchaltorf, Switzerland declare that the

KRAFTWERK Endoscope Art. 30002

is designed and manufactured with the EMC standards:
EN 61326:1997+A1:1998+A2:2001+A3:2003 Class A
EN 61000-3-2:2006 (not applicable)
EN 61000-3-3:1995+A1:2001+A2:2005 (not applicable)
EN 61326:2006 / EN 61000-4-2:1995 / EN 61000-4-2:1996

Moenchaltorf, Switzerland, June 2009

Patrick Wyss
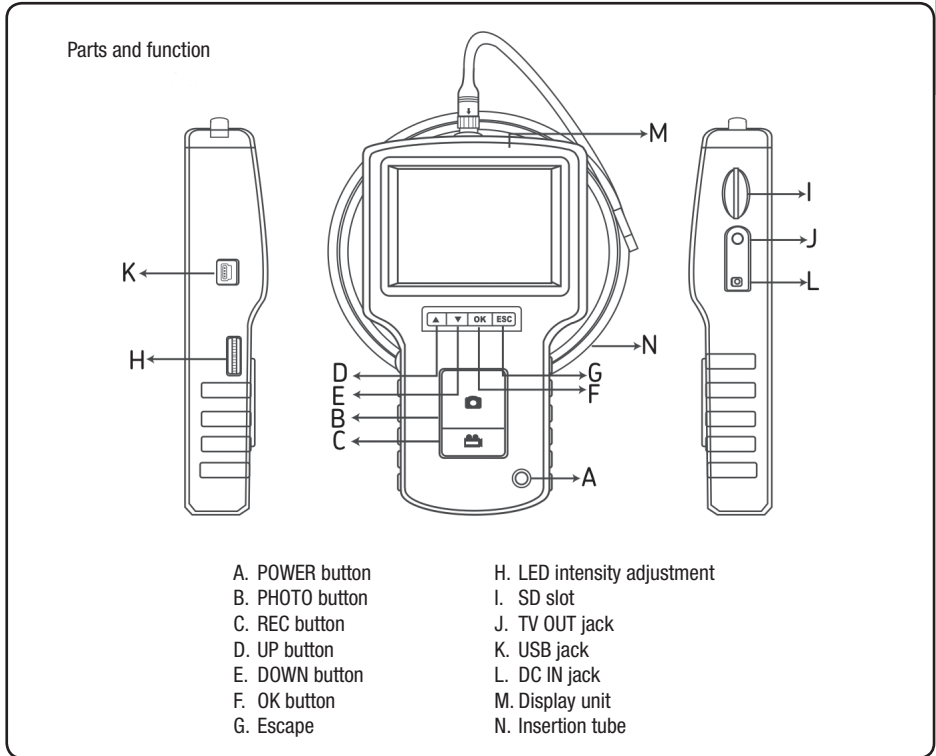CEO of KRAFTWERK company group

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## 1. Description

The KRAFTWERK Endoscope 30002 is a compact handheld instrument that allows the user to view applications in restricted spaces that could not normally be seen with the naked eye.

The 30002 is supplied in a sturdy carrying case and consists of a display unit, insertion tube, main adapter and side view adapter. The display unit, with a 3,5" wide angle TFT LCD screen, has the capacity of viewing, storing and reviewing photos and video images.

Images can also be displayed directly on a TV screen or stored and transferred to a PC for viewing later. The display unit is powered by rechargeable Li-polymer batteries and a multi-voltage charger is included. The 3 metre (9.9 ft.) insertion tube has a tip of just 5,5 mm (0,22 in) and is equipped with powerful variable LED lighting.

Other lengths are available, see section 7. Spares & accessories.

Parts and function



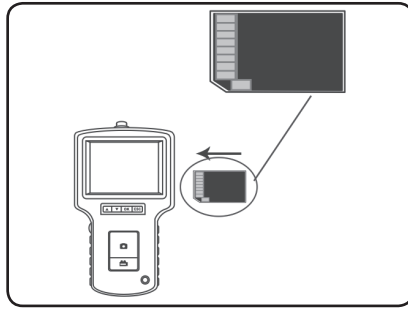| A. POWER button | H. LED intensity adjustment |
|---|---|
| B. PHOTO button | I. SD slot |
| C. REC button | J. TV OUT jack |
| D. UP button | K. USB jack |
| E. DOWN button | L. DC IN jack |
| F. OK button | M. Display unit |
| G. Escape | N. Insertion tube |

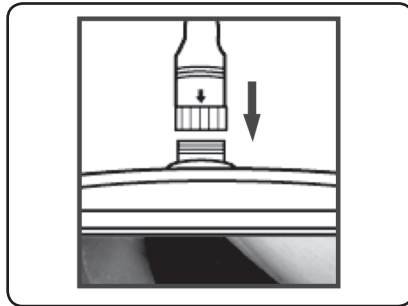The 30002 is supplied with the following accessories:
- USB Cable: enables connection to PC for convenient file transfer and maintenance.
- Video Cable: connects display unit to TV.
- Power Adapter: enables the display unit internal batteries to be recharged.
- 1GB SD card: For storage of photos and videos. Refer to Preparation for use (section 2) for direction of card insertion.
- 30002-M1: 90º side view adapter.
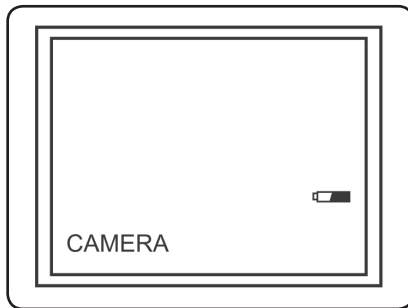
## 2. Preparation for use

On first use it is important that the
SD card is inserted as shown as follows:

Connect the insertion tube to the display
unit as shown in the figure and tighten
the locking collar:

Press the POWER button for 3-5
seconds to turn the display unit on.
The Start-up screen is shown briefly
followed by the status screen for five
seconds:

CAMERA

The status screen shows the capacity of the SD card and the internal battery.
If the 30002 has been stored for a long time then the display might not turn on. The most likely cause is that the
internal batteries have been fully discharged. Use the power adapter to recharge the batteries.

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Directly on the screen, a "live" picture can be seen. This is the camera mode.

It is strongly advised to properly set-up the 30002 before first use. The indexing of saved photos and videos is based on date and time only. Other parameters, if set before first use, can make the operation of the 30002 easier in the future.

Press POWER button for 3-5 seconds to turn the display unit off.

The side view adapter included, is ideal for viewing pipe walls.
To fit the side view adapter, unscrew the chrome tip of the insertion tube and replace with the side view adapter.

## 3. Menu set up

- Switch the unit on. Ensure that camera mode is active (i.e. a "live" picture can be seen)
- Press the OK button to access the menus. Use the UP or DOWN button to select the menu item. Press OK to confirm.

The options displayed are as follows:
- Delete all
- Video output
- Date / time setup
- Language
- Video format
- Auto power off

**Delete All**
Take care in selecting this option, as everything will be deleted from the SD card!
Navigate to DELETE ALL in the menu, press the OK button. Select YES or NO using the UP or DOWN buttons.
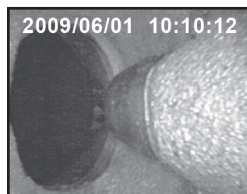Confirm with the OK button.

**Date/Time Set up**
Press UP button & DOWN button to select year/month/day or hour/minute/second.
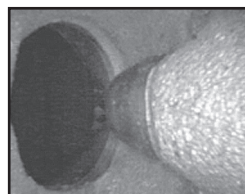Press REC button to increase the value and the PHOTO button to decrease the value.
The date and time can be displayed in the preview image mode.
Use either the PHOTO or REC button to toggle between display "ON" and "OFF":



2009/06/01  10:10:12

Display "ON"                          Display "OFF"

Confirm selection and exit menu by pressing OK.
Press POWER button for 3-5 seconds to turn the display unit off.

**Language**
Navigate to LANGUAGE in the menu, press the OK button. Select the required language using the UP or DOWN buttons and confirm with the OK button.

**Video Format**
Navigate to VIDEO FORMAT in the menu, press the OK button. Select the required video format (NTSC or PAL) using the UP or DOWN buttons. Confirm with the OK button.

**Auto Power off**
Navigate to AUTO POWER OFF in the menu, press the OK button. Select the required auto power off time (5, 10, 15, 30 minutes or Disable) using the UP or DOWN buttons. Confirm with the OK button.

## 4. Recording, viewing and transferring photos and videos

**Recording Photos**
In camera mode, press the PHOTO button to take a photo.
The photo is stored to the SD card in jpg format with a file name of running number. For example IMG00001.jpg.

**Recording Videos**
In camera mode, press the VIDEO button to take a video. The video icon is shown in the top right corner.

 • **REC**
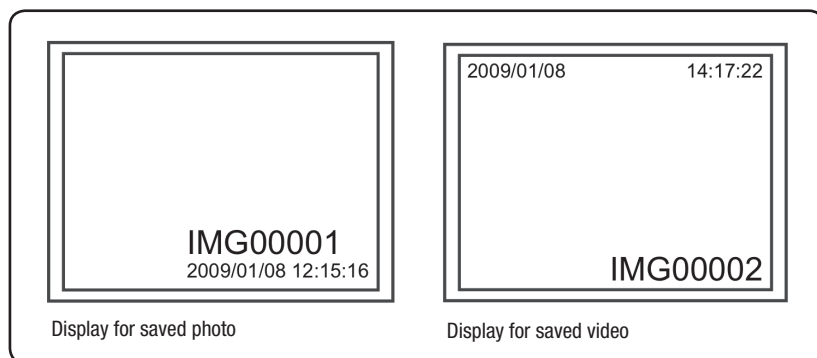To stop recording, press the VIDEO button again. The video icon disappears. The display reverts to camera mode. The video is automatically stored to the SD card in asf format with a file name of running number.
For example IMG00002.asf.

**Reviewing and deleting saved Photos and Videos**
In the camera mode, press the UP or DOWN key, the last photo or video will be displayed.
Press the UP or DOWN keys to navigate to the photo or video to be viewed.



| | |
|---|---|
| IMG00001<br>2009/01/08 12:15:16 | 2009/01/08    14:17:22<br><br>IMG00002 |
| Display for saved photo | Display for saved video |

To play the video, press the photo button. Press the photo button again to pause.
To revert to Camera mode, press the ESC button.
To delete a saved photo, press the OK button whilst it is displayed. To delete a saved video, make sure the video is not in play mode, press the OK button. A delete menu will show.
Toggle between the Yes and No options using the UP and DOWN buttons. Press the OK button to confirm.

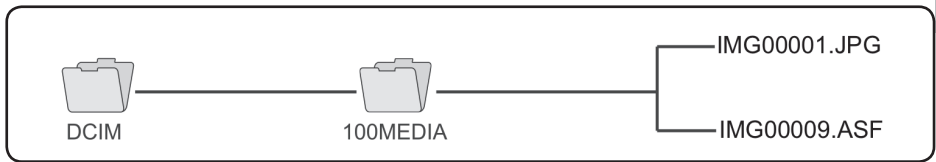KRAFTWERK

**TV Out function**

This function allows live pictures or recorded photos and videos to be displayed on a TV screen or beamer. First make sure that the Video format is set correctly to the used TV system (PAL or NTSC). (See the Menu set up section.)
Connect the black video cable to the display unit TV out jack. Ensure that the other end of the video cable is well connected to the TV or beamer.
Press the OK button to select menu options, select Video Output and press the OK button. The display unit screen will turn black and the display will be shown on the TV. You can transfer the screen back to the display unit by selecting the same function.

Note: The function will detect automatically if the video cable is already inserted in the TV OUT jack. If the video cable is not inserted, then the screen image will revert to the display unit.

**Transferring Photos and Videos to a PC**

The computer must be running MS Windows™ 2000 or later. Turn the 30002 on. Connect the USB cable to the display unit and the computer. Look for the drive with the SD card files, this should look similar to the following figure:

```
                                                           ┌──── IMG00001.JPG
   📁 ─────────────── 📁 ───────────────┤
  DCIM              100MEDIA                └──── IMG00009.ASF
```

The files can then transferred and viewed on the PC. In general, on a PC running MS Windows™ 2000 or later with Windows™ Media player, no special software is required to display JPG and ASF files.

## 5. Troubleshooting

No image on the display after turning the power on:
Battery is exhausted. Connect the display unit to the power adapter supplied and recharge batteries. The 30002 can be used when connected to ac power.

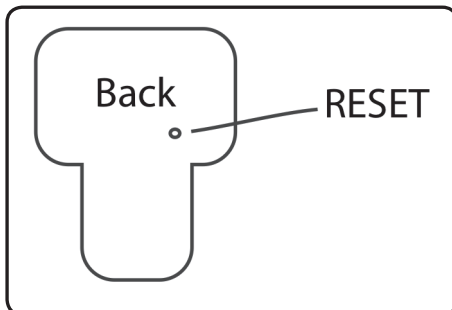No image, only words on the LCD monitor after turning the power on:
Check that the insertion tube is correctly connected to the display unit.

Unable to take photos or record video:
SD card not present, wrongly inserted, full or faulty. Check SD card is present, check SD card insertion, check SD capacity, check if SD card is faulty (check if SD card works in other devices).

Shut down:
When all functions freeze or fail, insert an insulated needle into the hole on the back of the main unit.
The system will restart automatically.

```
   ┌──────────────────────┐
   │   ┌────────────┐      │
   │   │            │      │
   │   │  Back   —— RESET  │
   │   │       o    │      │
   │   └──┐    ┌─────┘      │
   │      │    │            │
   │      │    │            │
   │      └────┘            │
   └──────────────────────┘
```

## 6. Technical Data

| Insertion Tube & Light Source | |
|---|---|
| Image Sensor | CMOS Image Sensor |
| Resolution (Dynamic / Static) | 320 (H) * 240 (V) / 640 (H) * 480 (V) |
| Size Tip (Insertion Tube ) Diameter | 5,5 mm |
| Tube length | 3 m |
| Field of View (FOV) | 67 ° |
| Depth of Field (DOF) | 1,5 cm - 10 cm |
| Light Source | 4 variable white LEDs |
| Probe Working Temperature | -20 to 70 °C |
| Ingress Protection | IP57 |

| Display Unit | |
|---|---|
| Power | DC5V |
| Display | 3,5" TFT LCD Monitor 320 * 240 Pixels |
| Interface | Mini usb 1,1/ AV out / AV in |
| Battery (not user serviceable) | Rechargeable Li-Polymer Battery (3,7V) |
| Power adapter | 100 - 240 V AC in / 5,5 V DC out US, UK, EU and Australian plug types |
| Video Out Format | NTSC & PAL |
| Recording medium | SD card (1GB supplied / up to 2GB can be used) |
| Compression Format | MPEG4 |
| Still Image Storage Format | JPEG   (640 * 480) |
| Video Recording Format | ASF    (320 * 240) |
| Working & Storage/Battery charging temp. range | -20 °C to 60 °C /0 to 40 °C |
| Functions | Snapshot, Video recording, Picture & video review on LCD screen, TV Out, transfer of picture & video from SD card to PC |

### Customer services

Contact your local importer of your specialized dealer to obtain address of your service department.
You find our partners under **www.kraftwerk.ch**



**GUARANTEE**

From date of purchase receipt

**2 YEARS GUARANTEE**

on material- or production-defects

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