

## Operating Instructions

# JETCAM

40 PRO



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## **Preface:**

Please read through these instructions for use carefully.  
It contains valuable instructions on correct use of the JetCam, but also tips for effective operation.

We wish you all the best when using it.  
Team OPTRONIC

## Warnings:



- For cleaning, do not use any highpressure cleaners
- Do not place any heavy objects on the Device
- Do not perform repair work by yourself, consult an authorised customer service Otherwise, the manufacturer guarantee shall be invalidated!
- Do not use when the cable is damaged.



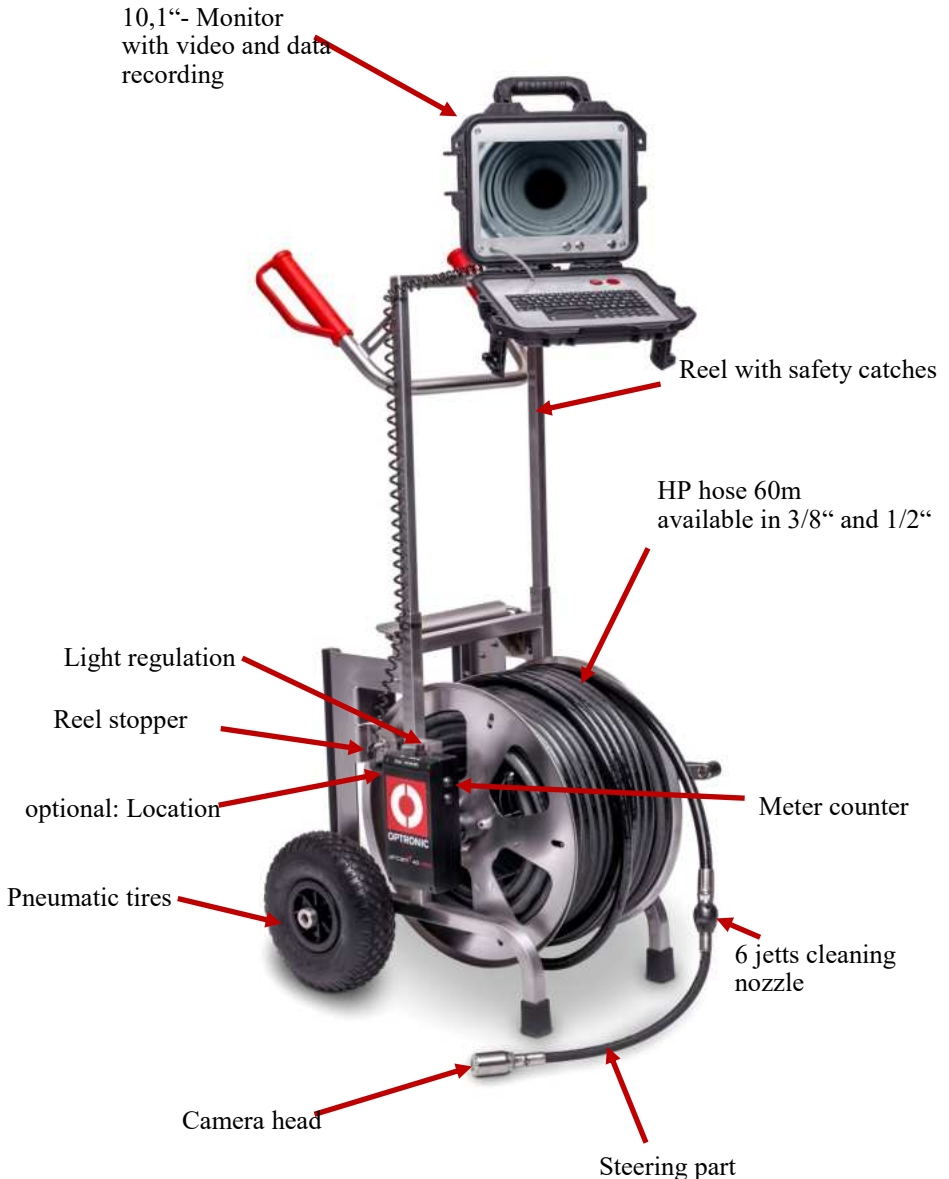
- This system must be disposed of in a professional manner and must not be disposed of with domestic waste.

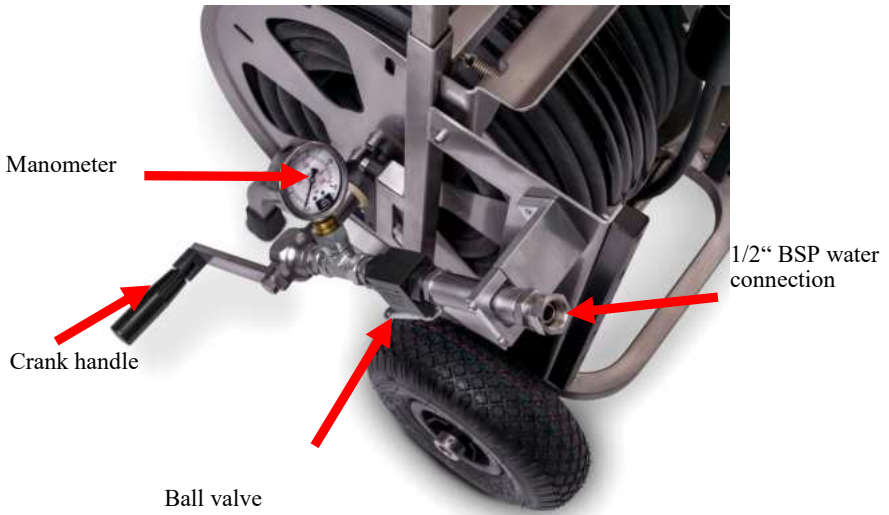
## Quality characteristic:

Components of the JetCam, such as camera head, impact guard, steering piece, high-pressure hose may have minimal scratch marks when being delivered. These marks are the result of our end test.

The JetCam 40 PRO has been tested extensively and can therefore be used for its intended purpose.

## Component description:





## Fact sheet:



Reel with:	1/2" connection with BSP female thread
	Ball valve
	Reel brake with guide holes
	Hand crank for winding the hose
	Pneumatic tires for easy transport
	Slide rails for easy loading and unloading
Control unit with:	Protection class IP64
	Light control
	Battery display
	Standard meter counter
Accessory bag with:	2 m power supply cable (230 V AC—15 V DC)
	BNC cable 20 50 Ohm RG58C/U
	2x socket key set
Weight	approx. 45 kg
Dimensions, out	L/W/H 59x59x114cm
Dimensions, in	L/W/H 59x59x62cm

**Steering part screwable**

(all) comprising:	Lateral steering nozzle 1.3 mm M4
	Length approx. 35 cm
	Throughput approx. 40-60 l/min at 100-150 bar
	Completely pre-assembled
	Plug-in system on the camera head side
	Without camera head
6-jet cleaning nozzle	6 jets (6 x 1,1 mm for 3/8" or 6 x 1.2 mm for 1/2" hoses)

**HP hose**

Surface hardened highly abrasion-resistant high-pressure hose, preassembled electrical equipment
NW 10 (3/8") 60m
NW 12 (1/2") 60m

**Screen and recording 10.1" monitor**

-> monitor 10,1"



**Battery pack:**

Voltage:	11,1V DC
Charging voltage:	15V DC
Output:	5200 mAh (for appr. 2,5 operating hours)
Charging time	min. 5 hours

**Possible hazards**

Lithium-Ion batteries are sealed gas tight and are harmless as long as they are used and handled in line with the manufacturer regulations.

**Warning**

Never use battery chargers that are not intended for the battery type!  
Do not short-circuit. Do not damage mechanically (puncture, deform, dismantle, etc.) Do not heat above the permissible temperature or burn. Keep batteries away from smaller children. Always store batteries dry and cool.

**Observe the safety information!**

**KK32 4.0 Camera head incl. Impact guard:**

For nominal widths:	DN 40 - 300
Elbow sizes from:	DN 50
Enclosure:	Stainless steel d=32.5 mm, l=57 mm
Image sensor:	1/4" colour C-Mos
Resolution:	400 TV lines
Optic:	Wide angle 145°
Light sensitivity:	0.1 Lux at F1.2
Lighting:	9 high-performance LEDs
Focus:	From approx. 25 mm to oe
Ambient temperature:	Approx. -10 to + 45°C
Storage temperature:	Approx. -30 to + 60°C
TV system:	PAL

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## **Instructions for use:**

### **Instructions for use:**

The JetCam has been optimally designed for your tasks in diameters from: 50 to max. 300 mm.

The JetCam may only be operated with fresh water.

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### **Required equipment:**

Please make sure that the following are available at the operating location:

- a jetter, where the output corresponds approximately to:
  - 40 - 60 litre / min. 100 - 150 bar for JetCam with 3/8" hose
  - 60 - 80 litre / min. 100 - 150 bar for JetCam with 1/2" hose
- 2 open-ended spanners, 27mm for connecting the high-pressure hose of the jetter to the JetCam
- Charged battery: Please note that the rechargeable battery of a brand-new system is not fully charged when delivered.

## Preparatory measures:

### On the camera

Make sure that the camera head is cleaned.

To ensure for a clear view as long as possible, the sapphire glass and the macrolon must be cleaned before or after being used each time.

#### Changing the camera head

**KK32 JC 4.0**  
(ArtNr. 1011853)  
**Stand 2024**

When fastening the camera head, make sure that

- fit on the camera head and steering part match each other precisely.
- sealing ring is present and is not damaged.
- **without spring washer**

#### Changing the camera head

**Former model**  
(ArtNr. 101492)  
**Before 2024**

When fastening the camera head, make sure that

- fit on the camera head and steering part match each other precisely.
- spring washer (13 x 1.5 mm) is inserted
- sealing ring is present and is not damaged.

### Recommendation: Operate the camera head with Mugel

Ideally operate camera head with Mugel (protection).

The Mugel is used to protect the camerahead and internal mechanics from excessive abrasion and excessive acceleration forces.

In addition, the alignment of the camera head partially depends on the Mugel.

**Water side:**

- Connect the **hp-hose of the jetter** with 1/2" BSP external thread to the JetCam (two 27 mm open-ended spanners are required for this purpose)



- Make sure that the **ball valve is completely opened**.



Ball valve closed



Ball valve open

**Clean steering nozzle and nozzle nozzle inserts.**

(-> Maintenance)

- These must necessarily be free.
- The cleaning and feeding behavior is significantly influenced by this



## Commissioning:

- Pull out the reel trolley completely
- Set the monitor to the viewing position and also switch on
- Take the camera head out of the holder
- Unlock the stopper on the reel
- Position the camera at the start of the pipe

### Set the meter counter:



- Press the top button -> move forwards
- Press the bottom button -> move backwards
- Press both buttons at the same time -> set to "0"

## Working with JetCam:

- To avoid water damage or water leaking in an uncontrolled manner, the camera head along with steering part must be completely inserted into the pipe to be inspected.
- Before the system is supplied with pressurised water, hold the hose tight in order not to lose control over the high-pressure system!
- Become a feeling for the pulling behaviour of the hose
- Become a feeling for the drifting behaviour of the camera head (by the steering nozzle).

The steering nozzle steers the camera head, e.g. in branches.  
Schematic:

- You can control the drifting behaviour by twisting the hose

(with

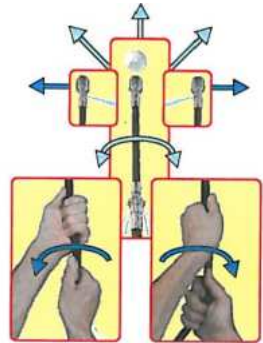


## How do I steer a JetCam

The steering nozzle steers the camera head, e.g. into branches.

The camera head always moves in the pipe in the direction shown on the screen above (12 o'clock)

By turning the hose in the desired direction, the camera head is directed through the canal



### **Elbows**

If this should be a problem, the steering nozzle may be aligned in an unfavourable

angle to the pipe and thus may even prevent it from being travelled over.

Solution: Pull back the hose, twist and as a result, move the elbow at a different angle.

### **Branches, T-pieces**

Move to the branch or T-piece in the position (by twisting the hose) in which you see the branch or T-piece in the "12 o'clock" position. This guarantees that the steering nozzle acts precisely against the branch or T-piece. Slowly thread-in and run in.

### **Moving over soiling / obstacles**

Similar as described in "Branches, T-pieces" above, twist the hose until the soiling can be seen in the 6 o'clock position. This allows the soiling to be run over and if necessary, removed.

### **Pipe cleaning**

The best cleaning result (depending on the local circumstances) can be achieved with:

- 150 bar, 40 - 60 litres (JetCam with 3/8" hose)
- 150 bar, 60-80 litres (JetCam with 1/2" hose)
- Nozzle set, rotation nozzle, front jet



## **Maintenance and care:**

### **Clean nozzles (e.g. piercing):**

#### **Steering nozzle:**

To clean the steering nozzle, the nozzle insert must always be dismantled, otherwise the cause of the blockage will be led back into the interior and cause a blockage again.

#### **Jet:**

You also need to dismantle the other nozzle inserts to clean them

Now remove dirt from the removed nozzle insert using the enclosed nozzle cleaning set (-> see JetCam accessory bag or WDS case).

Screw the nozzle insert back in after cleaning.

## **Care:**

### **Care:**

- If the vehicle is left standing for several days, please be sure to remove/blow out the water from the hose and steering piece to avoid corrosion on the internal electronics
- Please clean corrosion at contact points between the JC components (reel, HP hose, steering piece, camera head) with a wire brush
- Charge batteries overnight

## Working with accessories / optional

### **Forward jet:**

#### Assembly

Remove the M6x5 threaded pin and there, screw on the front jet nozzle.



#### Caution:

The forward jet may only be tightened using an 8 mm open-ended spanner (do not tighten hand-tight).

Keep the grub screw removed in a safe place.

You will need it again if you want to work without the front jet nozzle.

Now mount the impact protection for the front jet nozzle over the unit now present (camera with front jet nozzle).

It is essential to ensure that the jets of the nozzles are always free.

#### Operation

The pressure details used here are non-binding. The pressures depend on the performance of your washer. We recommend that you make attempts as to which pressures the front spray nozzle opens and closes.

The front jet serves the removal of blockages in a pipe, and works with a pressure-controlled valve.

If a blockage is detected in the pipe, reduce the inlet pressure (see pressure gauge) of the JetCam using the needle valve until the valve of the front jet opens.

Increase the pressure until shortly before the cut-off pressure and work on the blockage with the front jet visible in the camera image by twisting the hose until this is released so that you can manoeuvre through it with the JetCam.

Increase the pressure again until the front jet switches off and now run against the blockage previously released.

**This is essential that this is the case before you continue to run in the pipe in order to avoid backwater of the rinsing water.**

**Working with accessories/options: electronic**

**Locating transmitter**

The locating transmitter 512 Hz is switchable.

The location switch is located on the control box.

**If the locating transmitter is switched on, the image switches off.**

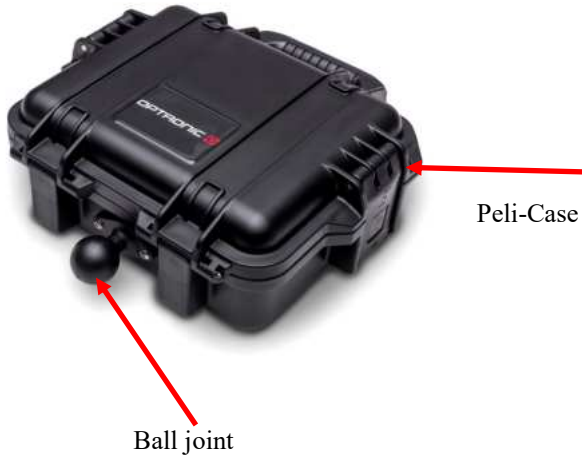
As soon as the locating switch is switched off again, the image appears again.

**Monitor 10,1“:**



Display	Display size 25,65cm (10,1“)
	Size Ratio 16:10
	Display device type TFT LCD
	Lifetime >30.000 hours
	Resolution HD 1280x800
	Brightness 1000cd/m <sup>2</sup> (1000nit)
Case:	Peli Storm Case iM2050
	Protection class IP67 (closed)
	Protection class IP54 (open)
System	Silicone keyboard with integrated mouse pad
	Data type in
	Standard meter counter (option)
	USB-Port
	Internal memory 256GB
	Weight
Size, closed	L/B/H 30x24,9x11,9cm

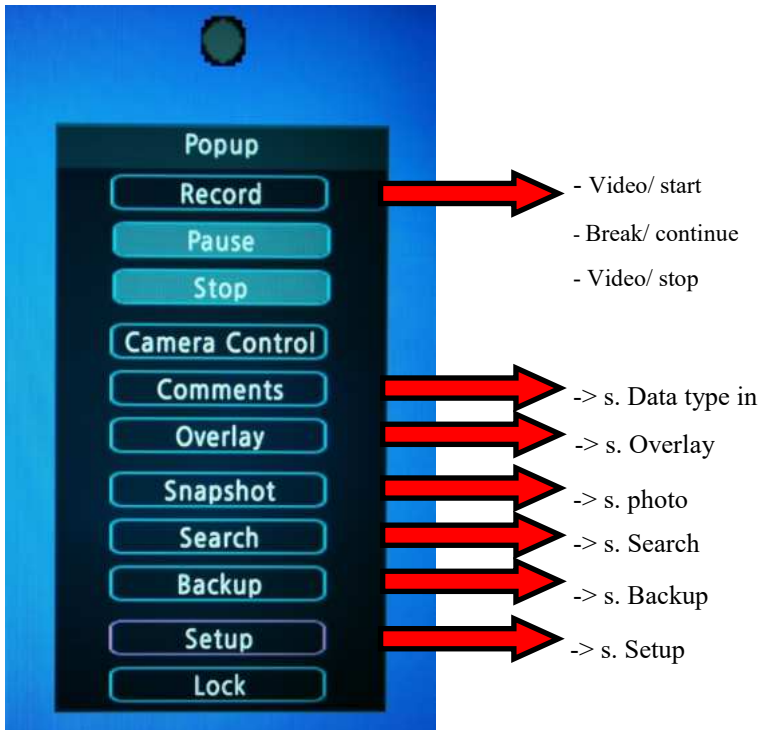
## Component description:



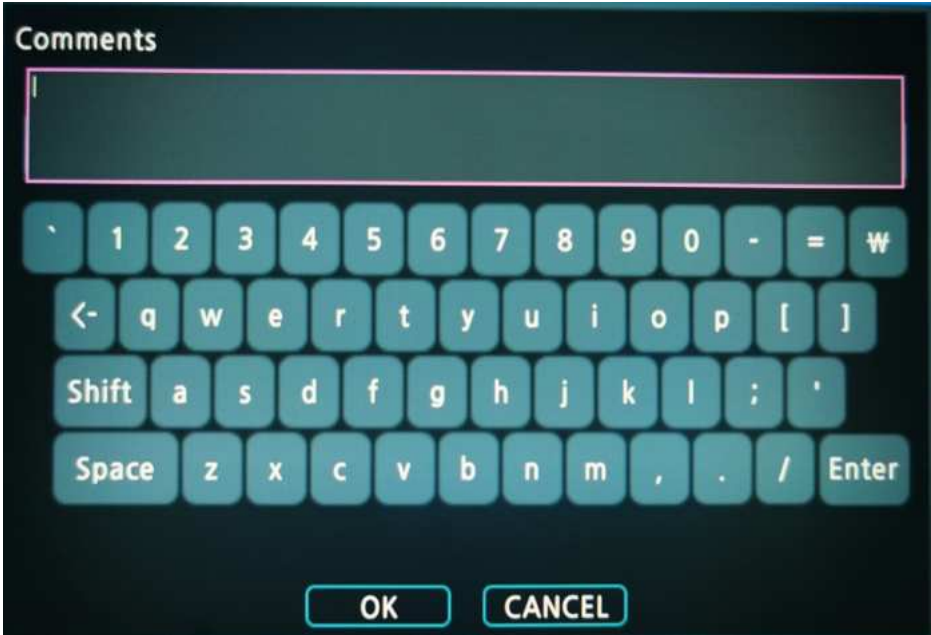
## Menu navigation



The main menu appears when you press any key on the mouse or keyboard.



## Data type in



In Comments menu, static or dynamic comments can be displayed in the image during recording, short comments about damage, comments about branches, etc.

Under the Setup menu item you can choose how long the display appears in the video.

## Overlay:



The image shows a screenshot of a software interface titled "Overlay". The interface has a dark teal background. At the top, the word "Overlay" is written in white. Below this, there are five light teal rectangular buttons arranged in two columns. The left column contains three buttons: "Measurement Input", "Company Name", and "Comments". The right column contains two buttons: "Project Name" and "Date/Time". At the bottom of the overlay, there are two rounded rectangular buttons: "OK" and "CANCEL", both with a light blue border.

In the Overlay menu item, static entries such as geographical data, company name, location/date etc. can be selected, which are displayed for the entire inspection.

## Search



In the Search menu item, projects, videos and images can be searched for, selected and played by project name and/or date.



## Backup



Using the available USB port, backups or data exports can be carried out for further use.

## Setup



All settings can be made in the Setup menu item.

- Date Format
- Time format
- Language
- Resolution
- Overlay position

## EU Declaration of Conformity (DoC)

### We

Company Name:	Optronic GmbH
Post Address:	Industriestraße 36
Postcode and City:	DE-87448 Waltenhofen
Telephone number:	049 831 28855
E-Mail address:	contact@optronic.de

Declare that the DoC is issued under our sole responsibility and belongs to the following product:

Apparatus Model/Product	Optronic JetCam®
Type:	JC40pro

### Object of the declaration:

The JetCam is a battery-powered camera system that has a monitor, a hydraulic hose and a camera head. The camera head flushes itself into the channels to be inspected with water pressure. The main area of application is pre-inspection, cleaning and quality control in the sewer and pipe cleaning industry.



The object of the declaration described above is in conformity with the relevant Union harmonization legislation:

2014/35/EU	The Low Voltage Directive and its amending Directives
2014/30/EU	The Electromagnetic Compatibility Directive and its amending Directives

The following harmonized standards are applied

The following national and international technical standards and specifications are applied:

EN 61000-6-2:2019	Electromagnetic compatibility (EMC) - Part 6-2: Generic standards - Immunity for industrial areas
EN 61000-6-3:2017 + A1:2011 + AC:2012	Electromagnetic compatibility (EMC) - Part 6-3: Generic standards - Interference emissions for residential, business and commercial areas and small businesses
EN IEC 61000-3-2:2019	Electromagnetic compatibility (EMC) - Part 3-2: Limits - Limits for harmonic current emissions
EN 61000-3-3:2013	Electromagnetic compatibility (EMC) - Part 3-3: Limit values - Limitation of voltage changes, voltage fluctuations and flicker in public low voltage supply networks for devices with a rated current ≤ 16 A per phase, which are not subject to any special connection conditions

Signed for and on behalf of:

Signature:	
Name:	Caroline Riezler
Function:	CEG
Place issued:	Optronic GmbH, Industriestraße 36 DE-87448 Waltenhofen
Date issued:	23.05.2022

Space for your own notes: