Operating Manual

JETCAM 20



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Revisionsübersicht

Version	Revision	Datum	Visum
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Foreword

The intended use of the JetCam is for inspecting and cleaning pipelines. The JetCam may only be operated by trained sewer inspectors, pipe cleaners or individuals with comparable technical knowledge and documented instruction.

Please read this user manual carefully. It contains valuable information on the correct use of the JetCam as well as tips for effective operation.

We wish you many successful operations.

Your OPTRONIC *— Team*

Warnings



- The JetCam is not suitable for use in areas where children may be present.
- The JetCam must only be pressurized when the camera head and steering unit are fully inside the pipe.
- Do not use high-pressure cleaning devices to clean the JetCam.
- Do not place heavy objects on the device.
- Do not attempt repairs yourself. Contact authorized customer service, otherwise the manufacturer's warranty will be void.
- Never operate the JetCam if the hydraulic hose or any components are damaged.
- Maximum operating altitude: 2000 m.



- This system or its components must be disposed of properly and must not be discarded with household waste.

Quality Characteristics

Components of the JetCam, such as the camera head, mugel, steering unit, and HD hose, may show slight scratch marks upon delivery.
This is particularly noticeable on stainless steel parts, such as the nozzle.

These marks are the result of our final testing procedures.
The JetCam has been thoroughly tested and is therefore ready for use.

Product Description

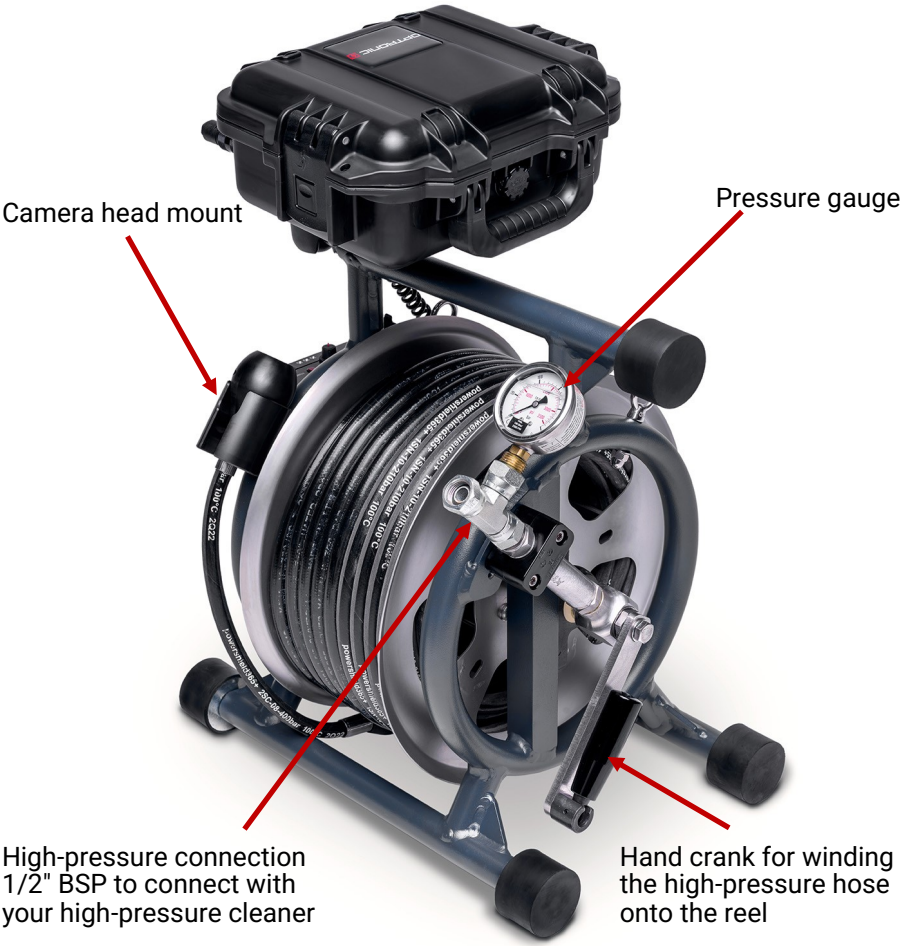
The JetCam is a high-pressure system that can perform both cleaning and inspection in a single operation.
For hydraulic supply, a high-pressure unit or flushing vehicle is required, typically providing 150 bar at 40–60 liters per minute.
The JetCam must only be operated with cold water (max. 40°C).
The purpose of the JetCam is the cleaning and inspection of pipe systems.

Cleaning Instructions

- Do not use aggressive or solvent-based cleaning agents on the JetCam!
- Do not use high-pressure cleaners to clean the JetCam!
  The reel can be cleaned using a gentle water stream, such as from a garden hose.
- Clean the camera head and steering unit with clear water and a cleaning cloth.
- To clean the nozzles, use the provided nozzle cleaners. For clogged nozzles:
  - Remove the affected steering nozzle using a 2 mm hex key.
  - Remove the cleaning nozzles using a 3.5 mm hex key.
  - Clean the nozzle and reinsert it afterward.

Component Description:




Camera head mount
Pressure gauge
High-pressure connection 1/2" BSP to connect with your high-pressure cleaner
Hand crank for winding the high-pressure hose onto the reel

Lifting the JetCam 20

The JetCam 20 must only be lifted using the aluminum frame.

Additionally, the JetCam 20 is equipped with a shoulder strap, which makes it easier to carry over short distances. Please observe the applicable occupational safety regulations when doing so.

Data sheet JetCam 20



Reel with:	1/2“ BSP internal thread
	Drum stop with guided holes
	Hand crank for rewinding of the hose
	Rubber feet

Control unit with:	IP64 protection category
	Light control
	Battery indicator
	Location 512Hz (optional)

Accessory bag with:	Power supply cable 2m (230 V AC, 15 V DC)
	BNC-cable 50 Ohm RG58C/U
	2x Allen key

Weight (gross)	about 25.7 kg, (incl. monitor & DVR)
Dimensions	L/B/H 37 x 45 x 48.5 cm

Battery

Voltage:	11.1V DC
Charging voltage:	15V DC
Power:	5200mAh (for about 2.5 operating hours)
Charging time:	Approximately 4 hours

Potential hazards
Lithium-ion batteries are sealed gas-tight and harmless, provided the manufacturer's instructions are followed during use and handling.
Art.Nr.: 10111255

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

Please observe the safety instructions!

KK32 4.0 camera head incl. impact protection:

Nominal diameter:	DN 40 - 300
Bend-capable:	DN 50 upwards
Housing:	Stainless steel; d = 32.5mm, l = 57mm
Resolution:	560 TV lines
Optics:	Wide angle 145°
Illumination:	9 high performance LEDs
Sharpness:	From about 25 mm to ∞
Storage temperature:	–30 to + 60°C **Storage only indoors**
TV system:	PAL

Steering piece, 6 jets nozzle ENZ, screwable

Flexible piece of hose consisting of:	Steering piece 1.3 mm M4
	HP (high pressure) hose about 35 cm
	Flow rate about 40-60 l/min at 100-150 bar
	Fully assembled
	Plug-in system at the camera head
	Without camera head itself
Cleaning nozzle with 6 jets	6x cleaning nozzle, 1.1 and 1.2 mm M4, which provide the thrust. Beam angle about 25°
Jetting:	**DN 10 (3/8“) 30m**
	Steering nozzle: 1.3mm
	Cleaning nozzle: 1.1mm
HP hose:	Surface-hardened, highly abrasion-resistant HP (high pressure) hose; electrically assembled
	DN 10 (3/8“) 30m

Usage Instructions

- The JetCam is optimally designed for its intended application:
- Use only in pipes with diameters between 50 mm and 300 mm.

The JetCam must only be operated with fresh water at a maximum temperature of 40°C.

Required Equipment

Please ensure the following items are available at the job site:

- High-pressure cleaner with pressure regulation that meets the following specifications:
    - JetCam with 3/8" hose:
      40-60 liters / min. bei **100 - 150 bar (1470—2170 psi)**
    - JetCam with 1/2" hose *:
      60-80 liters / min. bei **100 - 150 bar (1470—2170 psi)**
- Two 27 mm open-end wrenches to connect the pressure hose of the cleaner to the JetCam.

* Note: The 1/2“ hose version is not available for the JetCam 20.

Before Starting Work

Camera side:

Ensure that the camera head is clean. To maintain a clear view, **the sapphire glass and Makrolon cover must be cleaned before or after each use** .

Camera Head Replacement

(Item Nr. 1001356 + 101492)

All versions before 2024

Ensure that ...

- the fittings on the camera head and hose piece match precisely
- the sealing ring must be present and undamaged.
- the wavy spring washer (13 × 1.5 mm) must be inserted .

Camera Head Replacement

KK32 JC 4.0

(ArtNr. 1011853)

As of 2024

Ensure that ...

- the fittings on the camera head and hose piece match precisely.
- the sealing ring must be present and undamaged .
- DO NOT use a wavy spring washer .

Recommendation:

Use the camera head with shock protection (Mugel) to protect the internal mechanics from excessive abrasion and acceleration. It also helps with camera head alignment.

Note: In smaller pipes, the camera head may be operated without the Mugel.

Water side:

- Connect the water hose from the high-pressure cleaner (1/2" BSP male thread) to the JetCam using two 27 mm open-end wrenches.



- Ensure that the ball valve is completely open.

- The nozzles must be clean and free from obstructions .
  The cleaning and propulsion behavior depends heavily on this .



Image: Clean steering nozzle and nozzle inserts.
(See “Maintenance: Cleaning the Nozzles”)

Commissioning / Startup

- Position the monitor for proper viewing.
- Remove the camera head from its holder.
- Release the stopper on the reel.
- Place the camera head at the pipe entrance.
- Switch on the system.

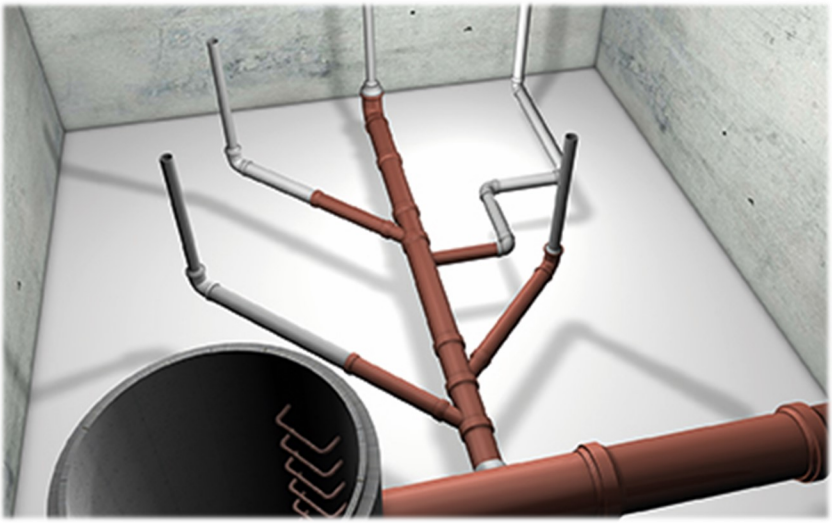
Inspection with the JetCam

The camera head and steering unit must be fully inserted into the pipe to be inspected before pressurizing the system.
This prevents uncontrolled high-pressure water discharge.

> **Warning:** Risk of injury or water damage.

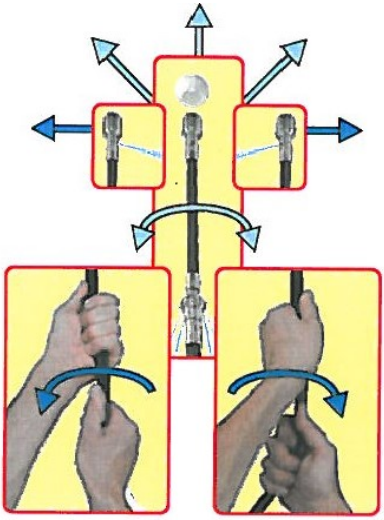
Before supplying the system with high-pressure water, firmly hold the hose to ...

- Maintain full control of the high-pressure system!
- Get a feel for the hose's tension and behavior
- Understand the drift behavior of the camera head caused by the steering nozzle.



Steering the JetCam

- The steering nozzle directs the camera head inside the pipe, e.g., into junctions.
- The camera head always moves in the direction displayed at the top of the monitor (12 o'clock position).
- By rotating the hose in the desired direction, the camera head can be steered through the pipe.



Bends

If navigating bends becomes difficult, the steering nozzle might be positioned at an unfavorable angle .

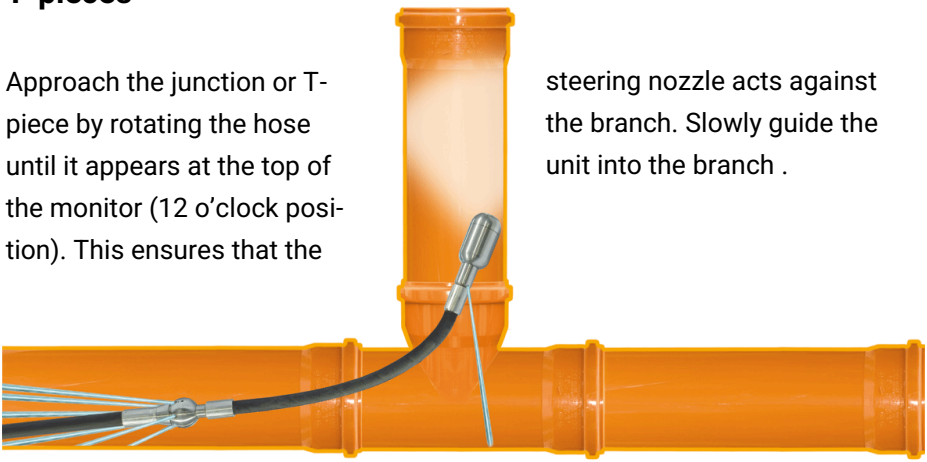
Solution:

- Pull back the hose and rotate it to approach the bend from a different angle.
- Increase the working pressure.



Junctions and T-pieces

Approach the junction or T-piece by rotating the hose until it appears at the top of the monitor (12 o'clock position). This ensures that the steering nozzle acts against the branch. Slowly guide the unit into the branch .



Obstacles and Debris

Rotate the hose until the obstacle appears at the 6 o'clock position on the monitor. This allows the camera to drive over and potentially dislodge the obstruction.



Pipe Cleaning

Optimal cleaning results (depending on local conditions) can be achieved using

- 1/2" high-pressure hose*
- High-pressure cleaner with 150 bar (2175 psi) and 40–60 liters/min
- Rotating or pulsating cleaning nozzle*

* Note: Not available for JetCam 20.

Maintenance and Care

Nozzle Cleaning

Steering Nozzle:
To clean the steering nozzle, the nozzle insert must always be removed first. Otherwise, the blockage might be pushed back into the internal mechanism, causing repeated clogs.

Other Nozzles:
For cleaning other nozzles, removal is also required.

Use the included nozzle cleaning set to pierce and remove debris from the inserts. (See JetCam accessory bag or interchangeable nozzle set case*)

After cleaning, reinsert the nozzle insert.

Care Instructions

- If the system is unused for several days, blow out the water from the hose and steering unit to prevent corrosion of internal electronics.
- Clean corrosion from contact points between JetCam components (reel, high-pressure hose, steering unit, camera head) using a wire brush.
- Charge the batteries overnight.

* Note: Not available for JetCam 20.

Working with Optional Accessories

Front Jet Nozzle

Assembly

1. Remove the M6x5 set screw and hand-tighten the front jet nozzle until the thread engages. Then tighten it using an open-end wrench.

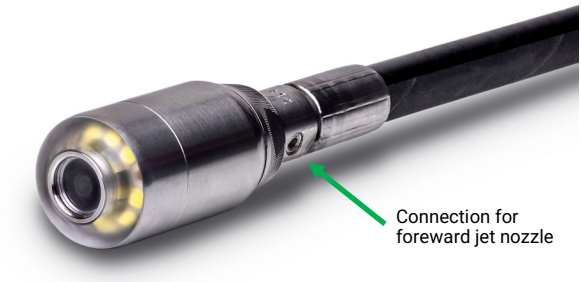


Image: Camera head with connection for forward jet nozzle

Caution:

Tighten the front jet nozzle only with an 8 mm open-end wrench to avoid damage to the connections between the hose and other components.
— Do not overtighten by hand!



Image: Foreward jet nozzle

2. Keep the removed set screw in a safe place. You will need it again if you want to operate without the front jet nozzle.
3. Install the shock protection (Mugel) over the camera head and front jet nozzle.
4. Ensure that the inserts of the rear spray ring are always clean and unobstructed (see “Maintenance: Cleaning the Nozzles”).

Operation:

The front jet nozzle is used to clear blockages in the pipe and operates via a pressure-controlled valve.

The pressure values mentioned are approximate. The required pressure depends on the performance of your flushing system.
We recommend testing at which pressures the nozzle opens and closes.

If a blockage is detected:

- Reduce the input pressure using the high-pressure cleaner until the valve opens (check via pressure gauge).
- Then increase the pressure just below the cutoff level and use the visible front jet in the camera image to clear the blockage by rotating the hose.
- Once the blockage is removed and passable, increase pressure until the nozzle shuts off.
- Only then continue moving through the pipe to avoid backflow of flushing water.

The nozzle opens just above 0 bar and closes at approx. 90 bar (1300 psi).
To reopen the nozzle after reaching the upper pressure limit, reduce the pressure briefly to zero .

Optional Accessories

Locator Transmitter:

The 512 Hz locator transmitter can be activated using the toggle switch on the control box.
When the transmitter is turned on, the video image will switch off.

Once the locator is switched off again, the video feed reappears .



		M-200	M-300
Display	Screen size	25.65 cm (10,1“)	
	Aspect ratio	16:10	
	Display type	TFT LCD	
	Lifetime	>30.000 hours	
	Resolution	HD 1280x800	
	Brightness	1400cd/m² (1000nit)	
Case		Peli Storm Case iM2050	
		Protection class IP67 (closed)	
		Protection class IP54 (open)	
		Silicone keyboard with integrated touchpad	
System		-	Data overlay
		-	Meter counter* optional
		-	USB-port
		-	Internal Storage 256GB
Weight		ca. 2.4 kg	3.3 kg
Dimensions (closed) L x W x H		30 cm x 24.9 cm x11.9 cm	

*Note: Not available for JetCam 20.

Monitor
M-200 / M-300*
Component Description

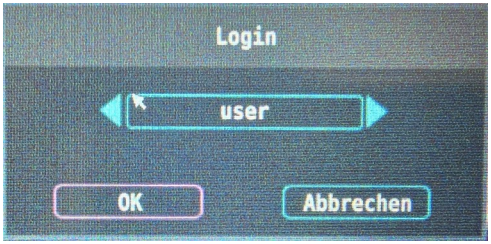




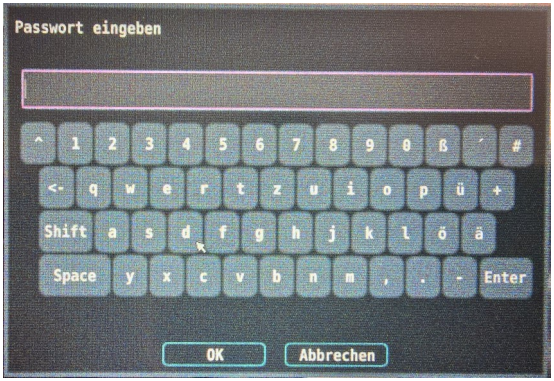
Menu Navigation M-300



Press any key

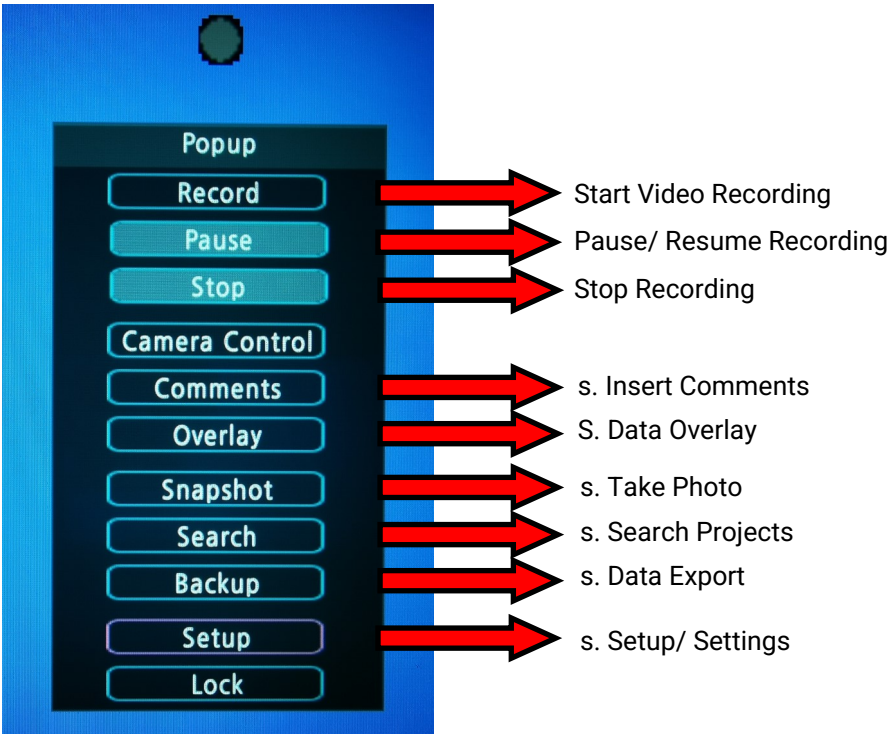


Press [Enter] to confirm. No password is required.

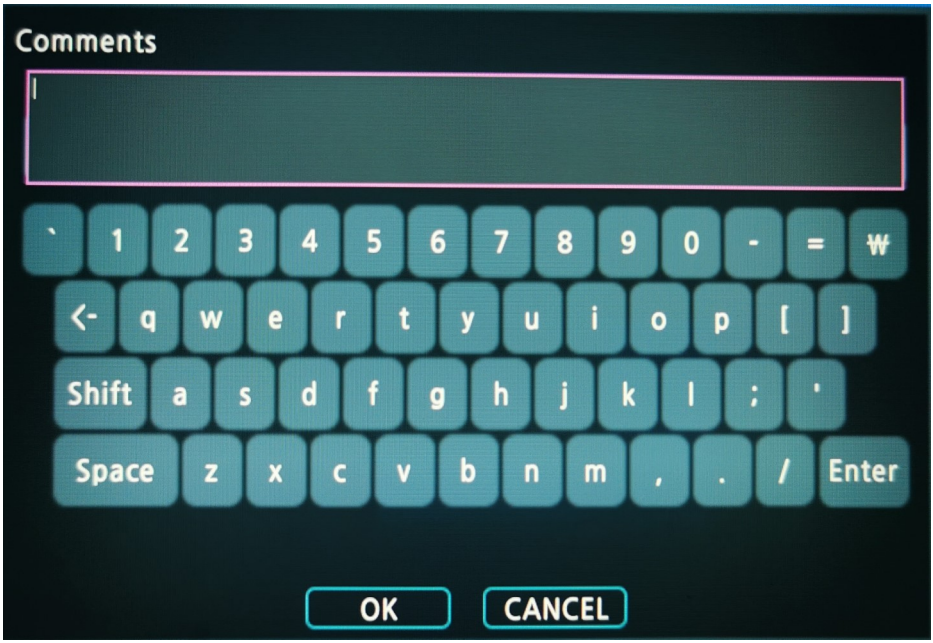


Menu Navigation M-300

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



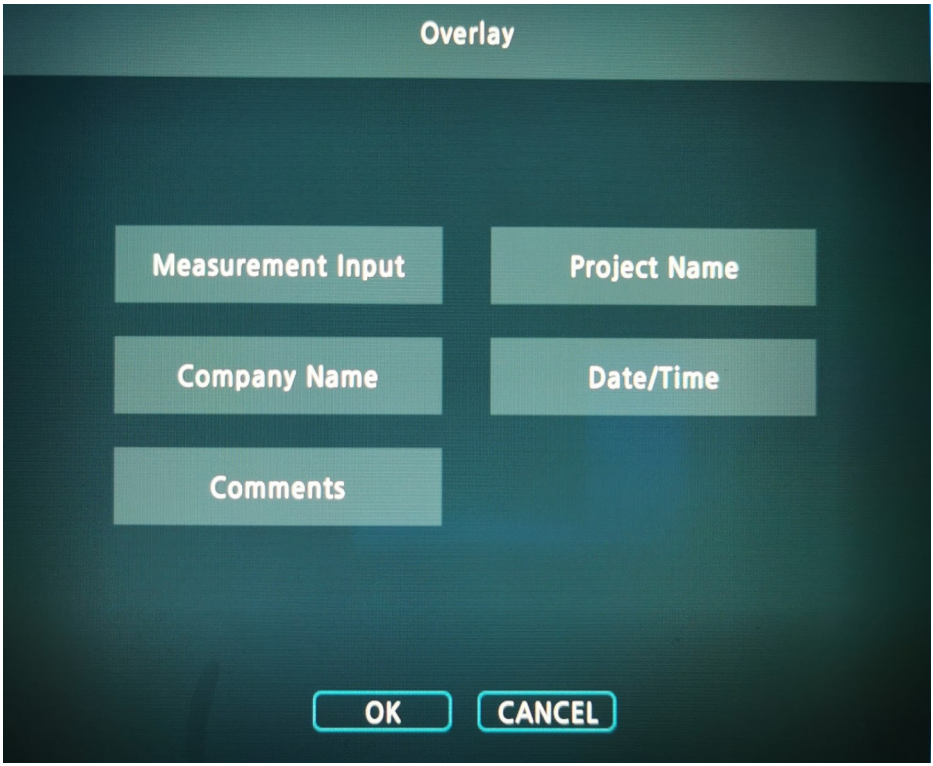
Overlay data recording



Comments:
Static or dynamic notes can be displayed during recording, e.g., to indicate damages, branches, etc.

The duration for which comments are shown can be configured under “Setup”.

Data Overlay



In the “Overlay” menu, static information such as geographic data, company name, location/date, etc., can be added to appear during the entire inspection.

Search



Under the “Search” menu, projects, videos, and images can be located by project name and/or date, selected, and played back.

Backup / Data Export



Using the USB port, data can be backed up for further use.
For security reasons, individual videos or images cannot be deleted. Once all data is backed up, the storage medium may be formatted.

Setup / Settings



In the “Setup” menu, the following settings can be configured.

-> Display Date Format

-> Display Time Format

-> Language

-> Video Resolution

-> Overlay Position



(NGE45I)



(NGE45E)



(NGE45U)

User's Manual

IP21

Features

- MEAN WELL Patent Application Number: 202330347779.4
- Interchangeable AC plugs (I-Type)
- Global certificates in multi-fields
  (ITE 62368-1, Medical 60601-1, Household
  60335-1,Industrial 61558-1/-2-16)
- 80~264Vac Universal AC input
- Ultra slim(30mm)
- No load power consumption< 0.075W
- Energy efficiency Level Ⅵ
- Class Ⅱ power (no earth pin)
- Protections: Short circuit / Overload / Over voltage
- Pass LPS
- Extremely low leakage current <100uA
- -30℃~+70℃ wide range working temperature
- Various DC plug quick adapter accessory available
  (Plug kit sold sperately, please refer to : https://www.meanwell.com/upload/pdf/DC_plug.pdf)
- 3 years warranty

Applications

- Consumer electronic devices
- Telecommunication devices
- Office facilities
- Industrial equipments
- Medical devices
- Household devices

GTIN CODE

MW Search: https://www.meanwell.com/serviceGTIN.aspx

Description

NGE45 is a highly reliable, 45W wall-mounted style single-output green adaptor series, which is compact and convenient for carry. This product is equipped with 5 types of interchangeable AC plug (European, USA,U.K. ,Australian and China type) that makes it very suitable for travel use. NGE45 is a Class Ⅱ power unit (no FG), accepting the input range from 80VAC to 264VAC that it can satisfy the demands for various types of electrical devices.

With the working efficiency up to 91% and the extremely low no-load power consumption below 0.075W, NGE45 is compliant with the latest USA energy regulation EISA 2007/DoE, Canada NRCan,Australia and New Zealand MEPS,EU ErP and CoC version5. The supreme feature allows the adaptor to save the energy when it is under either the operating mode or the standby mode. The entire series is approved for ITE, medical, household and industrial appliance safety regulations; moreover, it adopts the 94V-0 flame retardant plastic case that it can effectively prevent users from electric hazard.

Model Encoding

NGE 45 I 12 -P1J

- DC plug type: P1J :Plug for standard model, 2.1φ×5.5φ×11mm,C+ tuning fork type; Other options available by customer requested (see Page 6~7)
- Output voltage (5V/9V/12V/15V/18V/24V/48V)
- AC Plug: I : AC Pin fixed; Universal version with interchangeable plugs; E : AC Pin fixed; EU version with non-interchangeable plug; U : Foldable AC Pin; US version with non-interchangeable plug
- Rated wattage
- Series name

SPECIFICATION

ORDER NO.			NGE45○05-P1J	NGE45○09-P1J	NGE45○12-P1J	NGE45○15-P1J	NGE45○18-P1J	NGE45○24-P1J	NGE45○48-P1J
			○ = I, U, E						
OUTPUT	DC VOLTAGE Note.2		5V	9V	12V	15V	18V	24V	48V
	RATED CURRENT		5.63A	4.5A	3.75A	3A	2.5A	1.88A	0.94A
	CURRENT RANGE		0 ~ 5.63A	0 ~ 4.5A	0 ~ 3.75A	0 ~ 3A	0 ~ 2.5A	0 ~ 1.88A	0 ~ 0.94A
	RATED POWER		28.1W	40.5W	45W	45W	45W	45.1W	45.1W
	RIPPLE & NOISE (max.) Note.3		100mVp-p	100mVp-p	120mVp-p	150mVp-p	180mVp-p	240mVp-p	240mVp-p
	VOLTAGE TOLERANCE Note.4		±5.0%	±5.0%	±3.0%	±3.0%	±3.0%	±2.0%	±2.0%
	LINE REGULATION Note.5		±1.0%	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%
	LOAD REGULATION Note.6		±5.0%	±5.0%	±3.0%	±3.0%	±3.0%	±2.0%	±2.0%
	SETUP, RISE, HOLD UP TIME		1500ms, 50ms, 30ms / 230VAC 3000ms, 50ms, 10ms / 115VAC at full load						
INPUT	VOLTAGE RANGE Note.7		80 ~ 264VAC 113 ~ 370VDC						
	FREQUENCY RANGE		47 ~ 63Hz						
	EFFICIENCY (Typ.)		84%	89%	90%	90%	90%	90%	91%
	AC CURRENT		1A / 115VAC 0.6A / 230VAC						
	INRUSH CURRENT (max.)		COLD START 35A / 115VAC 70A / 230VAC						
	LEAKAGE CURRENT (max.)		Touch current < 100uA (rms) @264VAC						
PROTECTION	OVERLOAD		110% ~ 150% rated output power Protection type : 5~24V Hiccup mode, recovers automatically after fault condition is removed. 48V Shut down and latch off o/p voltage, re-power on to recover.						
	OVER VOLTAGE		110% ~ 140% rated output voltage Protection type : Clamp by zener diode						
ENVIRONMENT	WORKING TEMP.		-30 ~ +70℃ (Refer to "Derating Curve")						
	WORKING HUMIDITY		20% ~ 90% RH non-condensing						
	STORAGE TEMP., HUMIDITY		-20 ~ +85℃, 10 ~ 95% RH non-condensing						
	TEMP. COEFFICIENT		±0.03% / ℃ (0 ~ 45℃)						
	VIBRATION		10 ~ 500Hz, 2G 10min./1cycle, period for 60min. each along X, Y, Z axes						
SAFETY & EMC (Note. 8)	SAFETY STANDARDS		CB IEC62368-1, IEC60601-1/-1-11, IEC61558-1/-2-16, IEC60335-1; UL UL62368-1, CSA C22.2 NO. 62368-1, ANSI/AAMI ES60601-1/-1-11 (3.2 Version), CAN/CSA-C22.2 NO.60601-1/-1-11; ANSI/AAMI ES60601-1-11, CAN/CSA-C22.2 NO.60601-1-11 (for U Type only) DEKRA BS EN/EN62368-1, BS EN/EN60601-1/-1-11, BS EN/EN61558-1/-2-16, BS EN/EN60335-1; PSE J62368-1; BSMI CNS15598-1; RCM AS/NZS 61558-1/-2-16; EAC TP TC004; CCC GB4943.1 approved. (Please refer to next page for more details)						
	WITHSTAND VOLTAGE		I/P-O/P:4000VAC						
	ISOLATION RESISTANCE		I/P-O/P:100M Ohms / 500VDC / 25℃/ 70% RH						
	EMC EMISSION		**Parameter**	**Standard**			**Test Level / Note**		
			Conducted emission	BS EN/EN55032(CISPR32)/EN55011 , FCC Part15 , CNS15936, GB/T 9254.1-2021			Class B		
			Radiated emission	BS EN/EN55032(CISPR32)/EN55011 , FCC Part15 , CNS15936, GB/T 9254.1-2021			Class B		
			Harmonic current	BS EN/EN61000-3-2			Class A		
	EMC IMMUNITY		**Parameter**	**Standard**			**Test Level /Note**		
			ESD	BS EN/EN61000-4-2			Level 3, 15KV air; Level 2, 8KV contact		
			RF field susceptibility	BS EN/EN61000-4-3			Level 2, 3V/m		
			EFT bursts	BS EN/EN61000-4-4			Level 3, 2KV		
			Surge susceptibility	BS EN/EN61000-4-5			Level 3, 1KV/L-N		
			Conducted susceptibility	BS EN/EN61000-4-6			Level 2, 3V		
			Magnetic field immunity	BS EN/EN61000-4-8			Level 1, 1A/m		
			Voltage dips , interruption	BS EN/EN61000-4-11			>95% dip 0. 5 periods, 30% dip 25 periods, >95% interruptions 250 periods		
OTHERS	MTBF		749.9 Khrs min. MIL-HDBK-217F (25℃) 6361.6 Khrs min. Telcordia TR/SR-332(Bellcore) (25℃)						
	DIMENSION		62*30*65mm (L*W*H)						
	PACKING	MAIN BODY	196g; 60pcs/ 13.4Kg / 0.94CUFT for NGE45Ixx/Uxx-P1J 211g; 45pcs/ 11.4Kg / 1.06CUFT for NGE45Exx-P1J						
		AC PLUGS	Refer to Page 3						
DC OUTPUT CONNECTOR	PLUG		See page 6~7 ; Other type available by customer requested						
	CABLE		See page 6~7 ; Other type available by customer requested						

NOTE

1. All parameters are specified at 230VAC input, rated load, 25℃ 70% RH ambient.
2. DC voltage: The output voltage set at point measure by plug terminal & 50% load.
3. Ripple & noise are measured at 20MHz by using a 12" twisted pair terminated with a 0.1 μF & 47 μF capacitor.
4. Tolerance: includes set up tolerance, line regulation, load regulation.
5. Line regulation is measured from low line to high line at rated load.
6. Load regulation is measured from 0% to 100% rated load
7. Derating may be needed under low input voltage. Please check the derating curve for more details.
8. The power supply is considered as an independent unit, but the final equipment still need to re-confirm that the whole system complies with the EMC directives. For guidance on how to perform these EMC tests, please refer to "EMI testing of component power supplies." (as available on https://www.meanwell.com//Upload/PDF/EMI_statement_en.pdf)
9. Design meet US DoE Level VII (from Docket number EERE-2020-BT-STD-0006).

※ Product Liability Disclaimer : For detailed information, please refer to https://www.meanwell.com/serviceDisclaimer.aspx

■ Interchangeable AC Plug Specifically for NGE12/18/30/45/65/90 (I-Type)

Order NO.	NGE45Ixx-P1J (Universal Version) 					NGE45Exx-P1J (EU Version) 	NGE45Uxx-P1J (US Version) 
AC plug	Interchangeable Type (Unfoldable; AC Pin fixed)					Non-Interchangeable Type	
	EU	US	UK	AU	CN	Unfoldable AC Pin	Foldable AC Pin
Certificate	CB DEKRA c UL us 					CB DEKRA EAC CE UKCA FC	CB c UL us c UL us 

■ AC Plugs Accessory (Sold Seperately)

MW's order NO.	Per Unit	Per Bag	Per Carton	
		Q'Ty	Q'Ty	G.W.
AC PLUG-EU4		30 pcs	300 pcs (10 bags)	5.6Kg
AC PLUG-US4		30 pcs	300 pcs (10 bags)	5.3Kg
AC PLUG-UK4		30 pcs	300 pcs (10 bags)	7.1Kg
AC PLUG-AU4		30 pcs	300 pcs (10 bags)	5.3Kg
AC PLUG-CN4		30 pcs	300 pcs (10 bags)	5.3Kg
AC PLUG-MIX4	 (Per Set)	30 pcs (5 Types*6 mixed bags)	300 pcs (5 Types*6 mixed bags) (10 bags)	5.78Kg

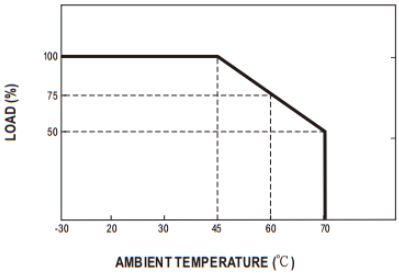
■ Interchangeable AC Plug Installation Steps (Convertible with I Type only)

Step1	Step2
	
Slide in AC converter along the guided rail between the metal prongs until it is locked in (with a "click" sound).	Check if the new plug type is stable and correct before use.

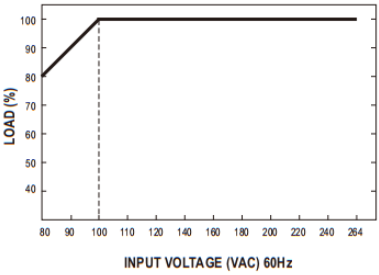
Note:

1. NGE45I main body unit and AC inlet plug should be ordered separately.
2. NGE45I needs to be used along with one of the AC inlet plug (EU,US,UK,AU,CN).

■ Derating Curve



■ Static Characteristics

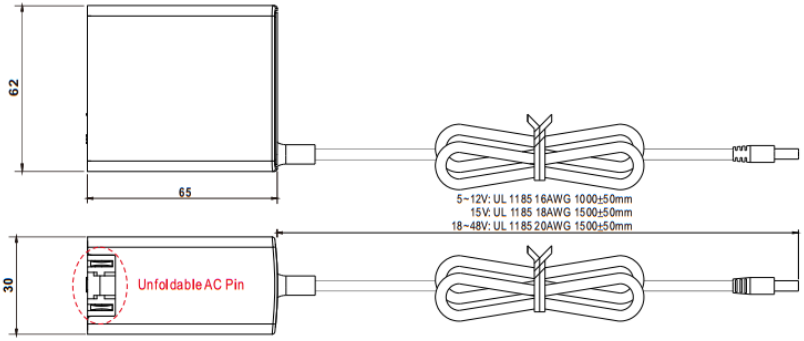


Mechanical Specification

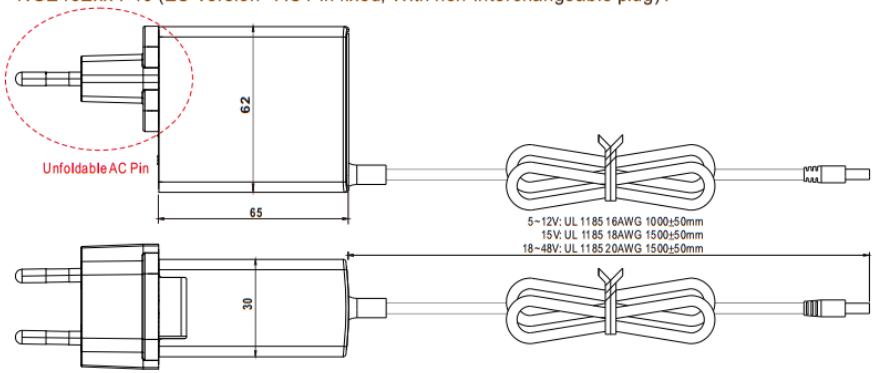
※ Cable connection

Unit:mm

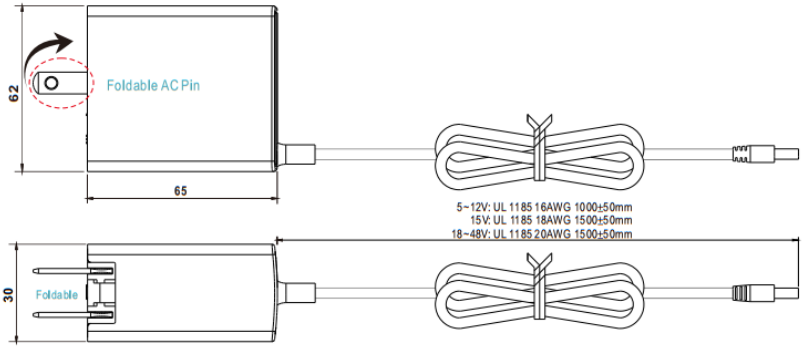
NGE45Ixx-P1J (Universal Version - AC Pin fixed; With interchangeable plugs) :



NGE45Exx-P1J (EU Version - AC Pin fixed; With non-interchangeable plug) :



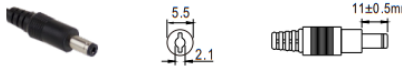
NGE45Uxx-P1J (US Version - Foldable AC Pin; With non-interchangeable plug) :



■ DC Output Plug

◎ Standard plug: P1J

Unit:mm

P1J	Pin Assignment
	 

◎ DC plug changeable through:

(1) Customization of the standard part with an optional DC plug according to the table (MOQ applicable)

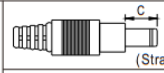
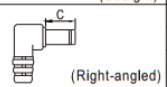
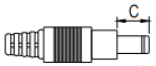
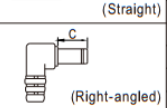
(2) Quick adapter accessory (sold separately without MOQ)

Please refer to below table and online selection guide : https://www.meanwell.com/upload/pdf/DC_plug.pdf

Example quick adapter accessory:



◎ Optional DC plug: (Available in customized cable or quick adapter)

Tuning Fork Style		Type No.	A OD	B ID	C L	Quick Adapter Accessory
		P1I	5.5	2.1	9.5	Available (Current rating: 7.5A max.)
		P1L	5.5	2.5	9.5	
		P1M	5.5	2.5	11.0	
		P1IR	5.5	2.1	9.5	
		P1JR	5.5	2.1	11.0	
		P1LR	5.5	2.5	9.5	
		P1MR	5.5	2.5	11.0	
Barrel Style		**Type No.**	**A** **OD**	**B** **ID**	**C** **L**	
		P2I	5.5	2.1	9.5	None
		P2J	5.5	2.1	11.0	
		P2L	5.5	2.5	9.5	
		P2M	5.5	2.5	11.0	
		P2IR	5.5	2.1	9.5	
		P2JR	5.5	2.1	11.0	
		P2LR	5.5	2.5	9.5	
		P2MR	5.5	2.5	11.0	
Lock Style		**Type No.**	**A** **OD**	**B** **ID**	**C** **L**	
		P2S(S761K)	5.53	2.03	12.06	None
		P2K(761K)	5.53	2.54	12.06	
		P2C(S760K)	5.53	2.03	9.52	
		P2D(760K)	5.53	2.54	9.52	

EU Declaration of Conformity (DoC)

We

Company Name:	Optronic GmbH.
Post Address:	Industriestraße 36
Postcode and City:	DE-87448 Waltenhofen
Telephone number:	049 831 28885
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:	JC20

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:	Holger Böck
Name:	Holger Böck
Function:	CEO
Place issued:	Optronic GmbH. Industriestraße 36 DE-87448 Waltenhofen
Date issued:	05.05.2025

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Use the space below for your own notes or observations from the field.