



BOREHOLE TV CAMERA PASI WELL-CAMERA.1



User Manual

Edition 2014 – Rev. 1.1
Copyright 2014 P.A.S.I. - All Right Reserved

P.A.S.I. srl - via Galliari 5/E - 10125 TORINO - ITALY
Tel.+39 011 650.70.33 (r.a.) Fax +39 011 658.646 E-MAIL sales@pasisrl.it
V.A.T. IT 00737320010 - C.C.I.A.A. Torino N. 2690

BOREHOLE TV CAMERA PASI WELL CAMERA.1

PASI manufactures a highly reliable and long lasting instrument. Please read the following instructions which assure the excellent performance we strive for.

STANDARD PACKAGE

When you receive the Video Inspection System, check the presence in your package of the following items:

- Aluminium cable reel with cable of ordered length per your order
- Camera head connected to the cable (non removable)
- TV camera battery charger
- Control unit in PELI case complete of 7" LCD colour monitor, battery, analogue video output, digital video output (USB), audio input, battery level indicator, light regulation, external battery input, TV input
- Connecting cable to TV camera
- USB cable for PC connection (a laptop computer can be used to display/video recording of the TV camera images together with a vocal comment)
- CD ROM with driver for PC and video-maker software
- External power cable with car lighter plug (if ordered as optional accessory)



P.A.S.I. srl - via Galliari 5/E - 10125 TORINO - ITALY

Tel.+39 011 650.70.33 (r.a.) Fax +39 011 658.646 E-MAIL sales@pasisrl.it
V.A.T. IT 00737320010 - C.C.I.A.A. Torino N. 2690

VIDEO CAMERA BUTTONS

- 1) Switch ON/OFF INT BATT EXT. BATT (INT. CHARG. BATT)
- 2) Internal battery charging socket: **warning: the battery charger must be only used to recharge the internal battery of the TV camera through the “charge” plug – do not try to power the TV camera using this battery charger**
- 3) Socket for external power (ext “Batt” (Battery). o int. charge.): use only the cigarette lighter plug cable or contact PASI and we will provide technical specifications for external power supply
- 4) Light regulation knob
- 5) Analogue video output with BNC connector (video out)
- 6) Digital video output (USB)
- 7) Internal microphone
- 8) Battery charge level LED indicator (HI green=full charged battery/ MID yellow=half charged battery/ LOW red=low battery)



P.A.S.I. srl - via Galliani 5/E - 10125 TORINO - ITALY

Tel.+39 011 650.70.33 (r.a.) Fax +39 011 658.646 E-MAIL sales@pasisrl.it
V.A.T. IT 00737320010 - C.C.I.A.A. Torino N. 2690

TV CAMERA ASSEMBLY

To assemble the reel and camera head assembly to the control unit, insert the connecting cable in the socket on the side of the cable reel, properly screwing the fixing collar. We recommend making this operation in a clean environment, such as indoors. If necessary, clean the connector with compressed air.

MONITOR CONNECTION

Normally, the monitor is already connected to the unit and the system is ready to use as soon as you connect the camera to the control unit; you can now adjust the light with the related knob till you obtain an optimal brightness. If necessary, you can also use the monitor adjustment buttons.

EXTERNAL VCR CONNECTION

Use the special cable to connect the camera VIDEO OUT to the VCR VIDEO IN; for VCR use, please refer to related manual.

EXTERNAL PC CONNECTION

First of all install the related drivers on your PC (you can find them on the CDROM delivered with the complete system) ①, then use the special cable to connect the USB camera output to the USB input of your PC; please refer to the video acquisition software manual for more instructions on displaying and recording on PC.

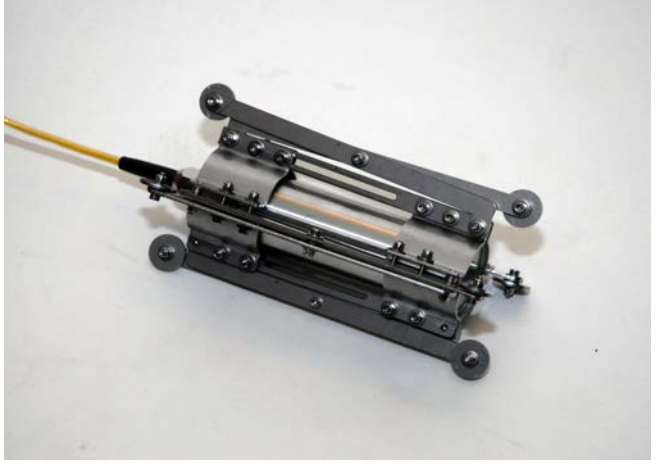
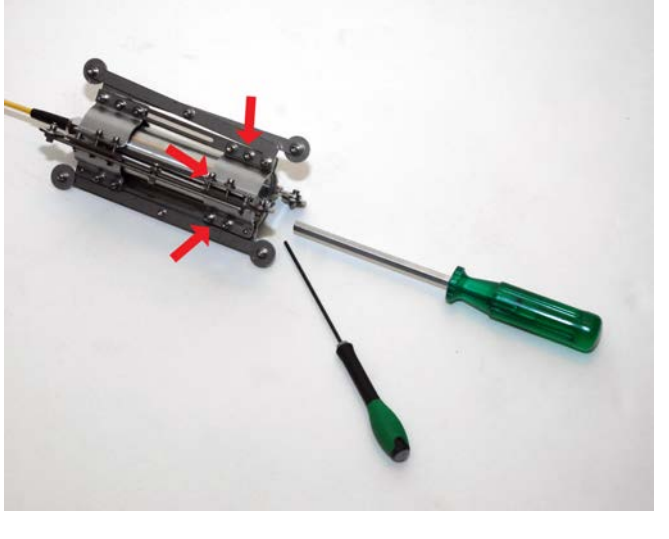
Switching on both the TV camera and with the PC connected together, you should obtain an image on the monitor; download the camera in the hole to properly regulate the light so to obtain the best vision. The cable reel has braking system to optimize the camera head download speed: turn the knob clockwise to download faster or turn anticlockwise to slow down.

Note ①: In case of doubt in the driver installation, please ask for assistance to your PC expert before proceeding.



ACCESSORIES:

HORIZONTAL CENTERING DEVICE (optional)

<p>1)Well-Camera head.</p>	
<p>2)Insert Well-Camera head in the centering device as shown in the picture. Be sure to mount the Well-Camera head in the right direction: the front side of the camera head fits the narrowest part of the centering device, indicated by a label).</p>	
<p>3) Tight the bolts of the centering device with the special tools as shown in the picture</p>	

P.A.S.I. srl - via Galliari 5/E - 10125 TORINO - ITALY

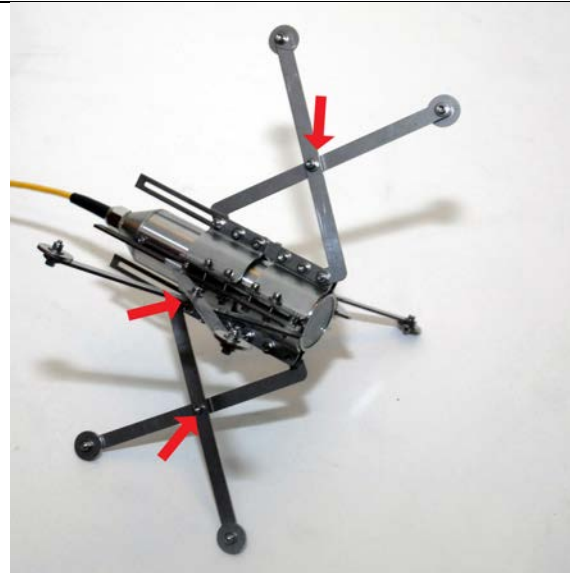
Tel.+39 011 650.70.33 (r.a.) Fax +39 011 658.646 E-MAIL sales@pasisrl.it

V.A.T. IT 00737320010 - C.C.I.A.A. Torino N. 2690

4)The diameter of the centering device can be adjusted as indicated by sliding the two flanges along the device





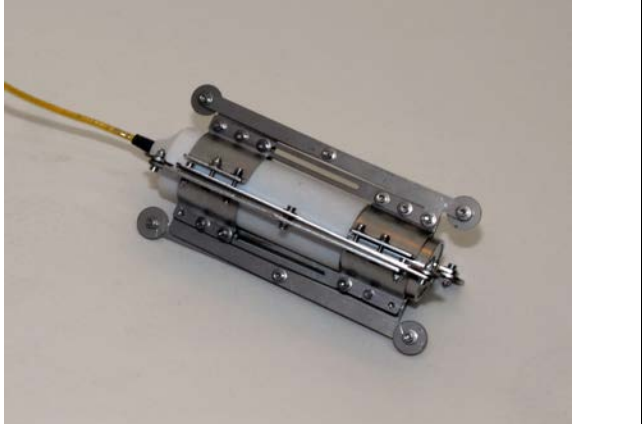

5)Fix the position by tightening the bolts & the screws as shown in the picture.



6)The Well Camera with the centering devices is now ready to use

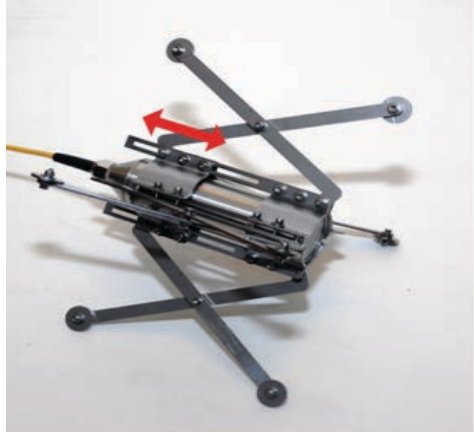
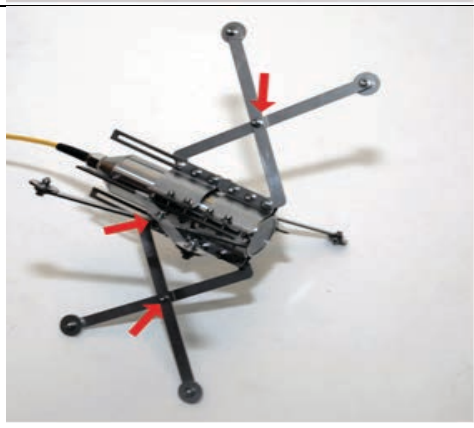
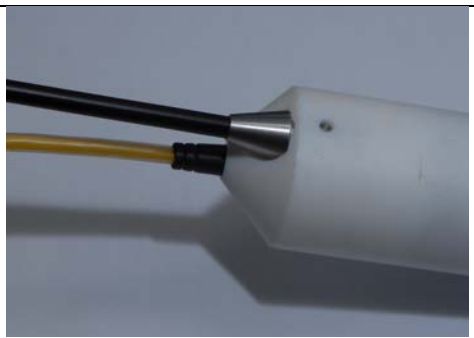



HOW TO MOUNT AND USE THE HORIZONTAL CENTERING DEVICE WITH THE ASPO (optionals)

<p>1)Well-Camera head</p>	 A cylindrical metal camera head with a yellow cable attached to the left side.
<p>2)Insert the Well-Camera head in the Teflon shield.</p>	 The camera head is inserted into a white cylindrical Teflon shield.
<p>3)Insert Well-Camera head in the centering device as shown in the picture. Be sure to mount the Well-Camera head in the right direction: the front side of the camera head fits the narrowest part of the centering device, indicated by a label).</p>	 The camera head assembly is inserted into a metal centering device. A label 'SE' is visible on the device.
<p>4) Tight the bolts of the centering device with the special tools as shown in the picture</p>	 The centering device is shown with three red arrows pointing to bolts. A green-handled screwdriver and a black-handled screwdriver are placed next to it.

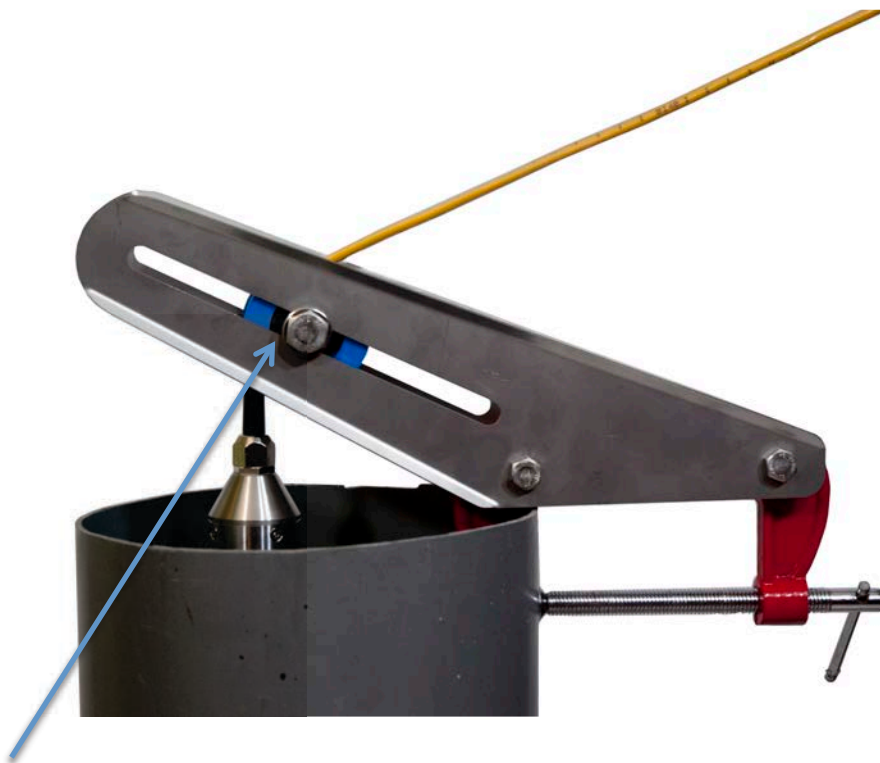
P.A.S.I. srl - via Galliani 5/E - 10125 TORINO - ITALY

Tel.+39 011 650.70.33 (r.a.) Fax +39 011 658.646 E-MAIL sales@pasisrl.it
V.A.T. IT 00737320010 - C.C.I.A.A. Torino N. 2690

<p>5) The diameter of the centering device can be adjusted as indicated by sliding the two flanges along the device</p>		
<p>6) Fix the position by tightening the bolts & the screws as shown in the picture</p>		
<p>7) Fix the ASPO fiber glass cable to the teflon shield as shown in the picture.</p>		
<p>8) The Well Camera with the ASPO option and centering device is now ready to use.</p>		

INSTALLATION AND USE OF THE ADJUSTABLE PULLEY ASSEMBLY

- 1) Unscrew anticlockwise the clamp until it reaches the thickness of the borehole casing, then tight it by screwing it clockwise until it is secure. The clamping device can be regulated for a thickness from 0 to 9.3 cm.
- 2) Align the blue pulley with the centre of the shaft, unscrew it by using a wrench measure #17 (not supplied with the accessory).
Once reached the desired position, secure the blue pulley by tightening the wrench clockwise.
- 3) Insert the camera head in the well, by placing the connecting cable into the groove of the pulley.



The position of the blue pulley can be regulated for a distance between 4cm and 16.5cm from the well casing.

INSTALLATION AND USE OF THE SUSPENDING TRIPOD WITH PULLEY






How to adjust the height of the tripod:

- 1) Loosen the three screws at the base of the tripod legs to adjust their length so that to reach the right position that allows lowering the Well-Camera vertical and centred in the borehole.
- 2) Pass the camera head and its cable carefully inside the pulley bracket and then slowly drop the camera head inside the well.
- 3) The cable reel has a braking system to optimize the camera head descent speed: turn the knob clockwise to go down faster or turn anticlockwise to slow down.

P.A.S.I. srl - via Galliari 5/E - 10125 TORINO - ITALY

Tel.+39 011 650.70.33 (r.a.) Fax +39 011 658.646 E-MAIL sales@pasisrl.it
V.A.T. IT 00737320010 - C.C.I.A.A. Torino N. 2690

HOW TO MOUNT AND USE THE CENTERING DEVICE FOR VERTICAL USE AND THE 90° VIEW OPTION (optionals)

<p>1)Well-Camera head</p>	
<p>2)Insert the Well-Camera head in the vertical centering device and mount the elastic band in the proper way. The centering device can be fixed at different opening diameter by sliding the adjusting ring along the camera head body. The ring can be fixed simply by tightening the screw clockwise. The centering device can be regulated from 80mm to 260mm of diameter.</p>	
<p>3) The 90°view option can be mounted using its special own mounting ring simply by tightening the screw clockwise. The distance between the mirror and the camera front glass can be regulated by sliding the 90°view option mounting bracket and tight its screws clockwise. We recommend to use the 90°view option together with the vertical centering device.</p>	

P.A.S.I. srl - via Galliari 5/E - 10125 TORINO - ITALY

Tel.+39 011 650.70.33 (r.a.) Fax +39 011 658.646 E-MAIL sales@pasisrl.it
V.A.T. IT 00737320010 - C.C.I.A.A. Torino N. 2690

TECHNICAL SPECIFICATIONS

Camera head:

Diameter	40mm
Length	150mm
Sensor	CCD 1/3"
Resolution	480 lines
Min. enlighten	1 lux
Light	6 high efficiency LEDs
Protection	IP68, max. 35bar (submersible up to 350m depth in freshwater)

Monitor:

Display	7" TFT LCD
Wide screen	16:9
Image Rotation	right/left/up/down
Resolution	480 x RGB x 234 Stripe
System	NTSC/PAL

Complete system (with control unit with integrated monitor, cable+camera head on reel):

Power supply	12Vdc
Autonomy	4hours with the internal battery, 6h with external battery

Physicals:

- PELI case 27x25x18 cm (control unit) – 5 kg

- reel with 50m cable+camera 26x28x31cm - 7 kg
- reel with 100m cable +camera. 26x28x31cm - 8 kg
- reel with 150m cable+ camera 36x28x31cm - 9,5 kg
- reel with 200m cable+ camera 36x28x31cm - 10,5 kg
- reel with 250m cable+ camera. 46x28x31cm - 12 kg
- reel with 300m cable+ camera 46x28x31cm - 13 kg

Complete system with 100m cable & accessories: 15 kg

P.A.S.I. srl - via Galliani 5/E - 10125 TORINO - ITALY

Tel.+39 011 650.70.33 (r.a.) Fax +39 011 658.646 E-MAIL sales@pasisrl.it
V.A.T. IT 00737320010 - C.C.I.A.A. Torino N. 2690