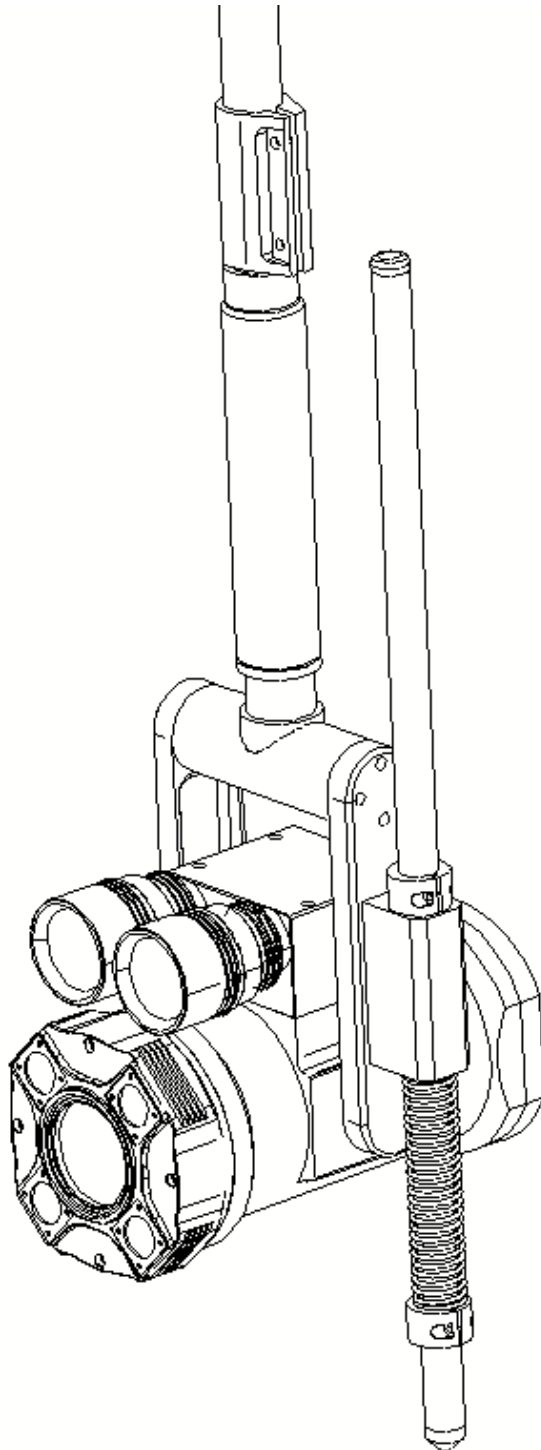


Manhole Zoom Periscope



User Manual



1.Product Introduction

The pipe periscope is mainly used for rapid inspection and diagnosis inside industrial vessels and pipes, with video zoom inspection, laser distance measurement (optional) and other functions; this equipment is equipped with strong lighting source, suitable for field and mobile workplaces, lightweight carbon fiber telescopic rod extends up to 7 meters, which can send the equipment to the required work position.

1.1 Product Features

(1) Multi-angle Vertical 15-135° angle motorized adjustment, which is convenient for users to operate.

(2) High brightness LCD display brightness up to 1000cd/m², can adapt to the working conditions under direct sunlight.

(3) Modularity. The product has a strong expansion capability, by adding application modules can achieve distance measurement and wireless transmission.

1.2 Main Technical Parameter:

- Image Sensor: 1/3" CCD, color
- Resolution: 800×600, 976×582, 1920 x 1080
- Sensitivity (minimum sensitivity): 0.05LUX (color), 0.02LUX (B&W)
- Resolution: 700 lines
- Focal Length: 3.3mm~99mm
- Zoom Range: 36x optical zoom, 10x electronic zoom
- Viewing Angle: 60 degrees
- Image Distortion: ≤±5%
- Focus Control: Auto/Manual/Keyed Auto
- Aperture Control: Automatic
- Screen Menu Control: address code, gain control, electronic shutter, backlight

compensation, focus control, strong light suppression, shading level, image inversion, automatic
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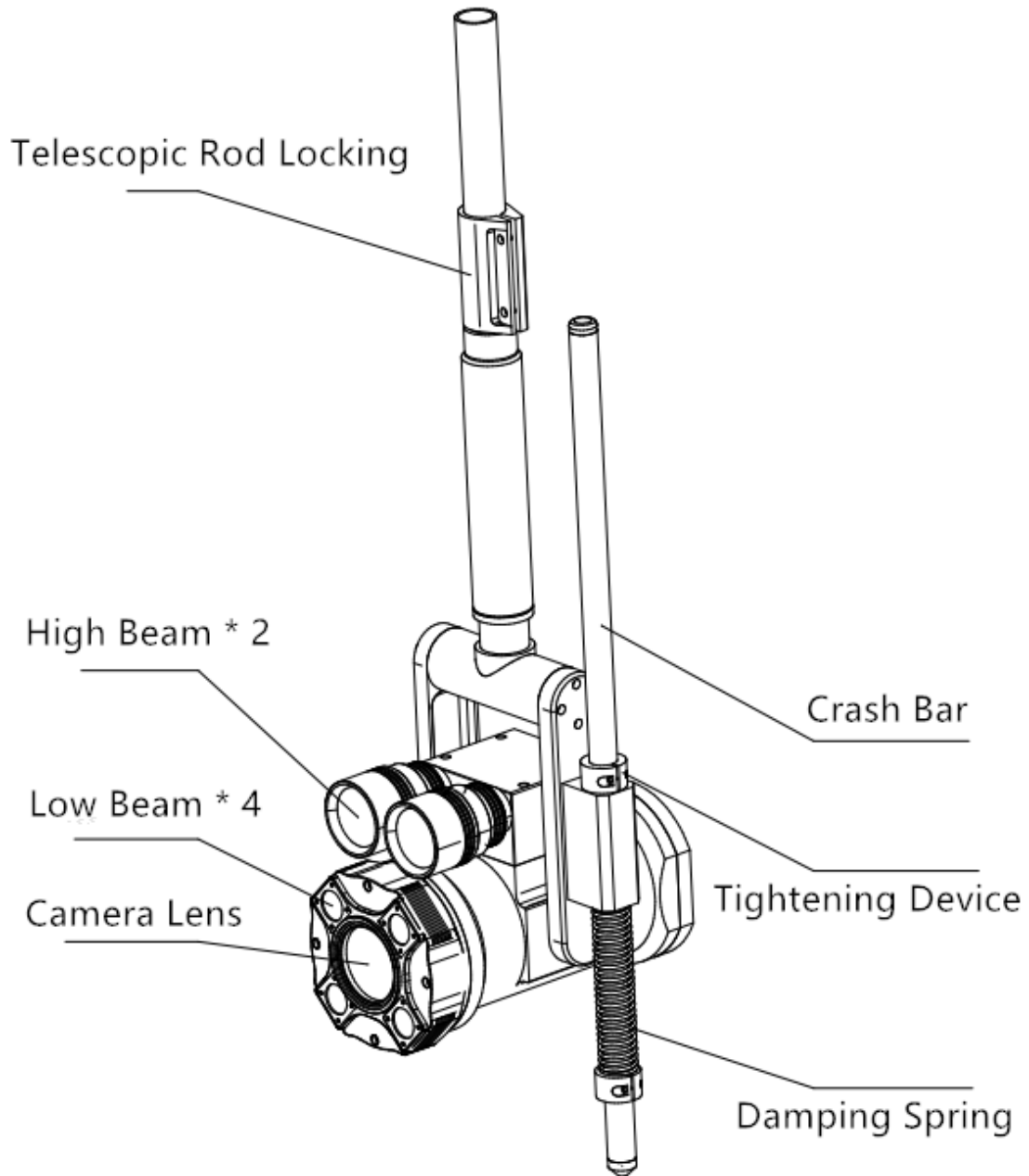
iris, 3D noise reduction, frame accumulation, 10 times electronic zoom

- Electronic Shutter: Automatic
- Video Output: 1.0Vp-p, 75Ω
- Gamma Factor: 0.45
- Backlight Compensation: built-in (on/off)
- Gain Control: Automatic
- Agreement: SONY or LG
- Baud Rate: 2400/4800/9600
- Working Temperature: -20°C to +50°C
- Working Humidity: 0%~96%
- Power Supply: DC12V/900mA
- Operating time LED off: 16 hours, LED on during operation: 6 hours
- Connection Pole Length: 6m (can be extended to 16m)
- Power: 50W
- Waterproof Level : IP68
- Storage System: Video recording method: MPEG4 / MJPEG

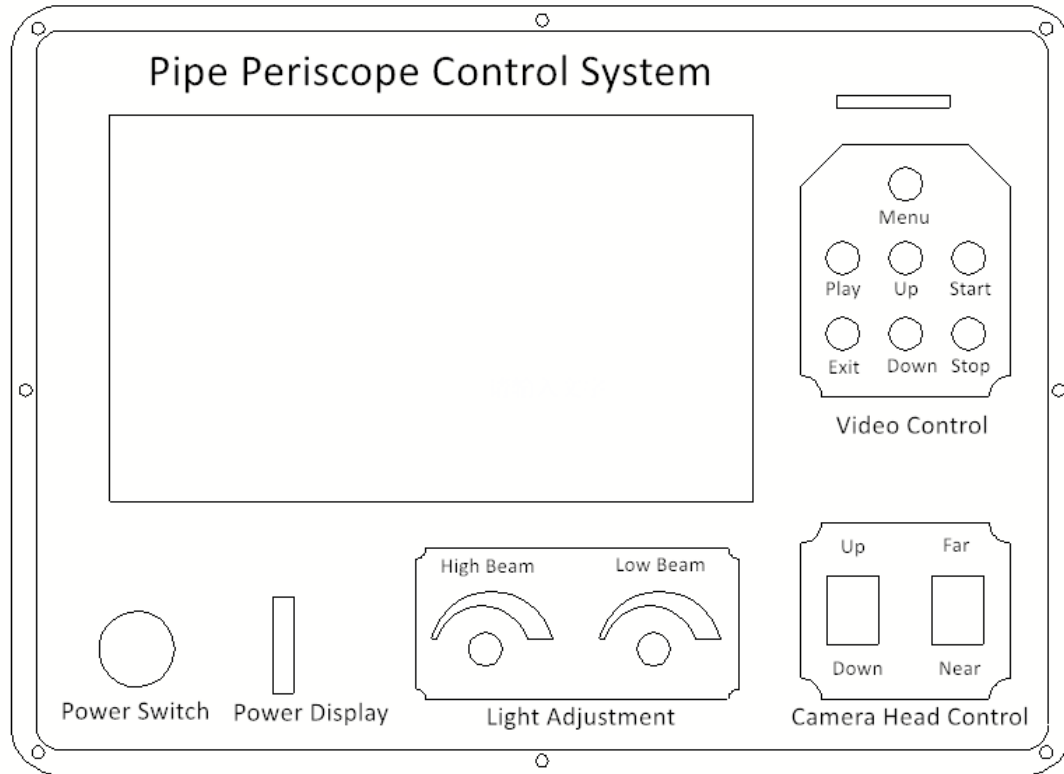
SD card storage capacity: 8G standard, expandable

2. The Product Composition And Functional Description

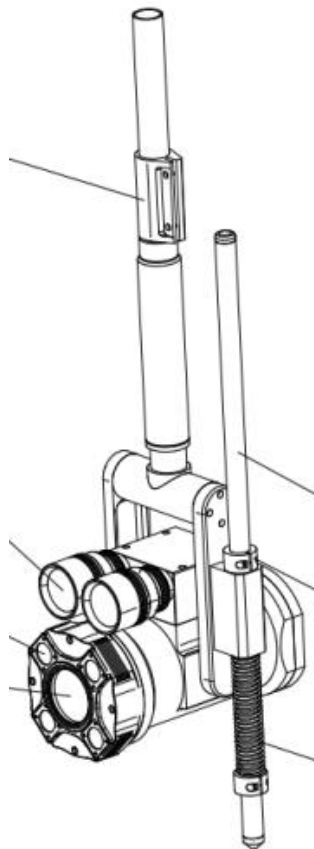
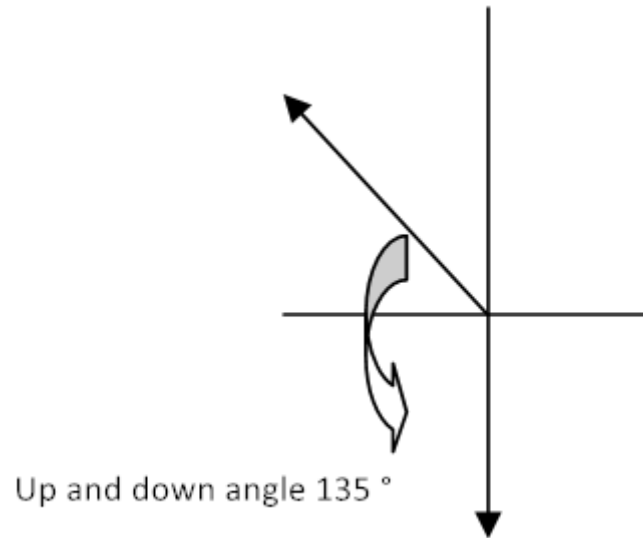
2.1 Camera Head



2.2 Control Terminals

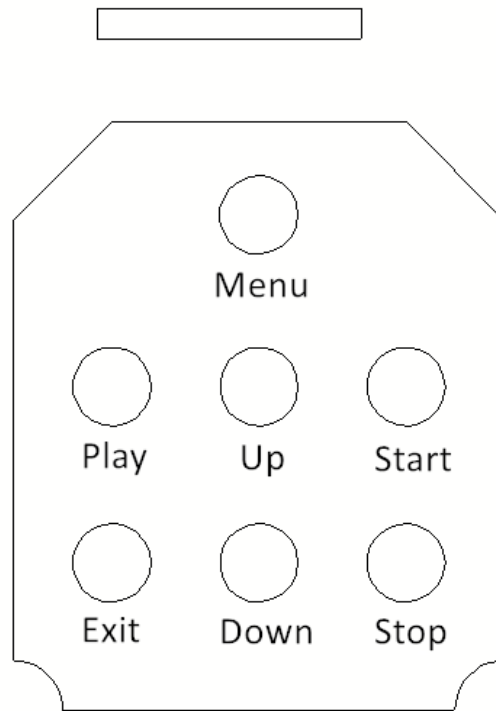


- (1) Power switch
- (2) Power display
- (3) Light adjustment
- (4) Camera head control



(5) Zoom: press the controller panel "pull far", "pull close" key, you can focus on the movement of the operation.

(6) Video control



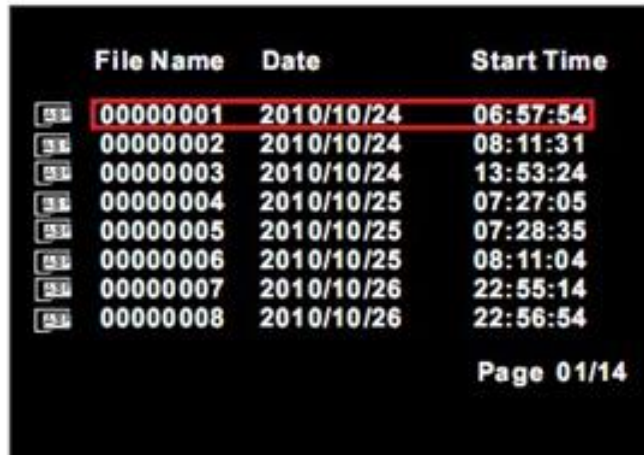
Video Control

- 1) Recording: press the "Start" button to record, press the "Stop" button to stop recording.
- 2) Play and delete video files.

Press "Menu" to enter the main menu



Select "Play" with the "Up" and "Down" keys and press "Start" to enter the file list.



	File Name	Date	Start Time
[Play]	00000001	2010/10/24	06:57:54
[Play]	00000002	2010/10/24	08:11:31
[Play]	00000003	2010/10/24	13:53:24
[Play]	00000004	2010/10/25	07:27:05
[Play]	00000005	2010/10/25	07:28:35
[Play]	00000006	2010/10/25	08:11:04
[Play]	00000007	2010/10/26	22:55:14
[Play]	00000008	2010/10/26	22:56:54

Page 01/14

Delete:

- Press the up and down keys to select the file to be deleted;
- Press the "Play" key to delete.

Play:

- Press the up and down keys to select and press "Start" to confirm the file to be played.
- Press the "Play" button to start playing.

Pause:

When the video is playing, press the "Play" button to pause the playback, and press it again to resume playback.

Stop:

When the video is playing, press the "Stop" button to stop the video playing.

Exit Play Mode:

Press the "Exit" key to return to the playlist mode.

3. Basic Operation

1) Equipment connection: Connect the telescopic pole and probe position according to the Unit 8, 2 Apollo Street Warriewood NSW 2102 - Website: www.endetek.com.au

required length and connect the camera and controller according to the manual.

2) Equipment start check the connection to confirm that there is no error, press the lower left corner of the control box "power switch" button, the equipment began to run.

3) Check the operation: keep the telescopic pole and the ground basically vertical, pay attention to the nearby high-voltage cable to avoid the danger of telescopic pole lift, confirm the safety of the equipment slowly cast to the well, maintain a distance of not less than 150mm from the water surface, the camera as far as possible to maintain in the center of the pipe; stable placement will be placed to the best position to check the light.

4) After the inspection, carefully clean up the equipment on the water, dirt, keep the equipment clean and dry, the periscope front protective cover to avoid damage to the internal precision parts. Then put the host into the designated packing box.

4. Maintenance and Care

1) After the field detection work, use a slightly damp soft cloth to clean the controller and periscope body, and then dry it with a dry towel, and then put it into the designated packing box, do not let the periscope and controller by extrusion, collision or impact, causing unnecessary damage.

2) In the case of not using the product, please turn off the power, the product will be stored in the designated box, safe protection, to extend the service life of the product.

3) During the charging process, when the charger indicator light is green, charging is finished; when the battery is not used for a long time, it is recommended to charge and discharge the battery once every 1-3 months.

5. Quality Assurance Measures

1. The limited warranty period for this product and all accessories (except batteries) is twelve months from the date of purchase.

2. During the limited warranty period, the purchaser will be charged for parts and labor to repair or replace the product; all replaced parts, circuit boards or equipment will become the property of the manufacturer. Cases and removable parts that are free from defects at the time of shipment are not covered by the limited warranty.

3. For repaired products, the limited warranty period of the following two methods shall prevail,

(1) The remaining warranty period of the product,

(2) Ninety days from the date of repair.

4. Shipping and handling charges for shipping the product to an authorized service center are the purchaser's responsibility.

5. In any of the following cases, the purchaser will not be guaranteed the protection stipulated in the guarantee clause:

(1) Subject to abnormal use, improper storage, unauthorized modification of connection, maintenance, misuse, abuse, accident, alteration, incorrect installation, force majeure, etc.

(2) The purchaser fails to notify the manufacturer of defects and malfunctions in the product during the limited warranty period.

6. Unexpected downtime, damage, etc. due to improper use.

6. Product Show

