

Catalogue

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Controller Part

Name	Specification	Remark
Controller	360*310*170MM(L*W*H)	
Weight	6KG	
Screen size	10.1 inch	
Resolution	1920*1080	Inspection wire<150m, industrial pixel: 2000000, Inspection wire
Screen material	IPS HD the full view screen	>150m industrial pixel:1000000
Language	English, Spanish, Russian, French	
Keyboard	English	
Display character	Camera lens pressure(UKpa):Resolution 0.1kpa	
	Robot pressure (DKpa):Resolution0.1kpa	
	Meter counter accuracy : 0.35m	
	Slope: up (U)0-90°,down(D)0-90°,Resolution1°	
Storage	U disk	
Storage capacity	below 1TB	
Video output interface 1	HDMI	wireless connect to computer and phone
Special function	Lens reset function, meter clear zero, protection remove function	
Engineering parameters	Instution:	
	Project:	
	Addres:	
	Principal:	

System Parameter

Crawler Body Part

Name	Specification	Remark
Crawler size	486*142*120mm/486*115*99mm (L*W*H)	110mm /73mm wheel
Crawlerbody/camera material	Copper/stainless steel	
Height from camera to ground	78mm/54mm	110mm /73mm wheel
Wheels diameter	110mm/73mm	
Ground distance	34mm/5mm	110mm /73mm wheel
Zoom	10 times zoom in and out	
Front camera Field of view	(horizontal) H: 57.6° (W)~ 5.8° (T) (vertical) V:36.4° (W) ~ 4.3° (T)	
Brightness	2 level adjustable (20*10000LUX)	
Led Qty	4PCS	
Front camera indsutrial pixel	20000000 (1920*1080)	While Cable is less than 150m,the pixel is 2 Megapixel While Cable is more than 150m,the pixel is 1 megapixel
Rear camera indsutrial pixel	20000000 (1920*1080)	
Rear camera Brightness	5 level adjustable (6*10000LUX)	
Rearcamera view angle	90°	
Ambient light Brightness	18*10000LUX	
Robot body pressure	120Kpa-180Kpa	
Camera lens pressure	120Kpa-180Kpa	
MotorPower	27.3W*2	
Robot Voltage	(DC) DC36V	
Protection device	Crawling with anti-blocking rotation function	
Pipe Range	≥ 180mm/≥ 150mm	110mm /73mm wheel
Crawling speed	Fast : 18m/minutes, Slow : 13.6m/minutes, Fast : 10.8m/minutes,slow : 8.16m/minutes	110mm /73mm wheel

Electrical wire reel

Name	Specification	Remark
Weight	39.5KG	120m inspection wire
Wire reel size	653*360*385mm (L*W*H)	
Operating mode	Manual/automatic	
Inspection length	150m	

Declaration

Due to the continuous upgrading of products, the use process such as manual and physical equipment. Please understand the difference. This manual is a product series manual, because for the different configuration, the product function is also different, the specific function configuration please purchase. The technical requirements shall prevail.

Precautions

- 1.Please read the manual carefully before using.
- 2.When installing the equipment, use proper force to avoid affecting the normal operation.
- 3.Ensure that the screws are tightened when connecting signal cables and connecting cables.
- 4.This device is a precision instrument. Please handle it with care when handling.
- 5.If the equipment is not used for a long time, please charge the product in time, once every three months, each time The time is 3 hours.

Warranty coverage

- 1.Warranty :12 months(From the delivery time).
- 2.Repair and replacement is free for any unartificial damage in the warranty period.
- 3.No warranty is provided for artificial damage byimproper operation.
- 4.No warranty is provided for equipment damage caused by dismounting without permission by manufacture.

1.Precautions for Crawler

- 1.Non-professionals do not disassemble any parts above the crawler.
- 2.The 6 wheels on the crawler cannot be mechanically rotated at will.
- 3.It is strictly prohibited to rotate or twist the camera head. After using the camera, reset it (look straight ahead).During device installation, concave and convex grooves should be correctly installed to avoid device damage.



- 4.During use, if the crawler needs to turn around, step back some distance one after another to facilitate the crawler to generate line resistance when turning around and avoid slipping.
- 5.This product has IP68 waterproof function.
- 6.The pressure value of the crawler should be in the range of 120-180kPA, less than 120kPA need to be filled in time, Gas, higher than 180kPA, please vent air from the filling hole.
- 7.Meter function description: according to the size of the wheel diameter of the crawler meter, the wheel rotates once, meter two Time, 73MM wheels, accurate to 0.1 meters. 110MM wheels, accurate to 0.19 meters.
- 8.Anti-blocking protection function: when the spider crawls in the pipeline, it encounters obstacles or other anomalies. When the wheel is blocked, the electric length is in an overload state for a long time, which damages the motor, This adds the motor anti-blocking function.
9. After the crawler completes the work, be sure to plug in the clutch to take up the line when taking up the line. When the line is almost closed, stop taking up

Common Fault Treatment Measurement

Fault 1: Crash

Solution: Turn off the device first, and then check whether the SD card can work properly.

Note: It is recommended to use a high-quality SD card for this device.

Fault 2: Blue Screen (No Picture)

Solution: Check the car body connection.

Fault 3: Unable to Start

Solution: Check the power connection.

Note: If the device is not used for an extended period, it should be powered on regularly every 1-2 months.

Fault 4: No screen during startup

Solution: Check that the signal cable is connected correctly.

Note: When connecting the signal cable, be sure to pay attention to the correct position to avoid damage to the device due to incorrect connection, resulting in unusable device.

Fault 5: Other faults

Solution: Send the photo or video ,please contact to manufacture.

Note: Do not disassemble or assemble this equipment without authorization, otherwise the warranty will not be possible.

Record the description of module function keys

1. If you need to record during use, press the button Video recording. Press the button to start recording, this time control A time marker will appear in the lower left corner of the screen.
2. Press the "Cruise" button, and then push the "Forward" button. No manual operation is required during the forward process. Press the "Cruise" button when you need to stop.
3. press the "character" key, the character is hidden on the screen, then press the "character" key, the character can be displayed Show.
4. The "ambient light" and "Dimming" keys can adjust the light intensity of the lens and the car body.
5. "Focus +" and "Focus -" can fine-tune the focal length to make the display image clearer.
6. swing the lever to "rotation +", the lens can be rotated forward; Swing lever to "rotation -", mirror The head changes the direction of rotation;
7. "Far" and "near" can quickly switch between far and near images to achieve the best display effect.
8. Press the "Reset" button, and the lens can return to the original position from different positions.
9. "emergency stop" key: emergency situation, ensure safety.
10. After the tractor completes its work, it is determined to plug in the clutch to collect the line. Adjust the speed governor to adjust the speed of the winding line to the appropriate speed to avoid a mismatch of the winding speed. For unnecessary damage caused, for example, by dragging the tractor too fast. When the line is almost closed, it should be first. Stop reel, close the reel button, and then stop the spider, to avoid the spider stop first caused by line alignment. The dragging of crawlers.

Note: If the tractor needs to turn around during use, retreat some distance successively to facilitate the tractor to turn around. Generate line resistance to avoid skid.

the line, close the take-up button, and then stop the crawler to avoid stopping the crawler first and causing the line to crawl.

10. Regularly conduct safety inspections on the crawler to ensure that no uncontrollable damage occurs during use.

2. Precautions for Pay-off car

1. Electric pay-off car can achieve electric take-up mainly, manual take-up as a supplement, Rewinding function, pay-off car mainly rely on crawler to drag the cable reel to achieve pay-off function;
2. Switch on the power supply when paying off and adjust the brake pads (to ensure that there is a certain friction resistance when paying off (force), the clutch pin is in a separate state, climbing and dragging the wire reel can achieve wire pay-off;
3. When the take up line, adjust the brake pad, the clutch pin is in the combined state, connect the controller and climb the car, Turn on the external power supply, check the normal function of the device, adjust the speed control knob, slowly accelerate, Reach the required speed (recommended speed does not exceed 50 RPM) to achieve line work, when the winding is about to end, the winding speed slows down until the winding is completed, and the knob is turned to the lowest. Speed is zero, complete take-up;
4. Manual take-up, clutch pin in a separate state, through the manual handle can be realized take-up;
5. Electric take-up in case of emergency, you can turn the speed control knob as soon as possible to the lowest or quickly press, Press the emergency stop button;
6. When the equipment is used, it cannot be tilted or put down, and it cannot be made when the equipment is exposed in rain and snow.
7. In the daily use of the cable of the pay-off car, avoid broken skin, scratches and wear. Regularly clean it to prolong its service life.
8. Ensure that the screws are tightened when connecting signal cables and connecting cables.
9. Pay-off car gear and lead screw can be regularly lubricated with butter.

Standard Configuration



Box controller



Electrical Robot Camera



Wire Cable



Take-up handle



Power Line



Signal line

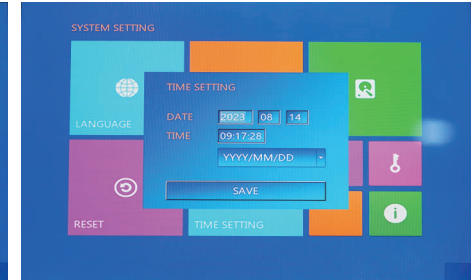
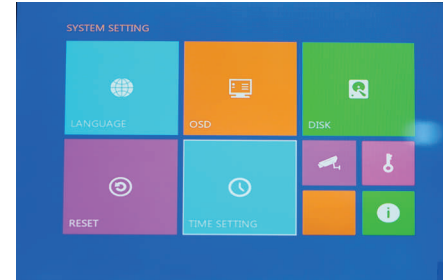


32G USB flash drive

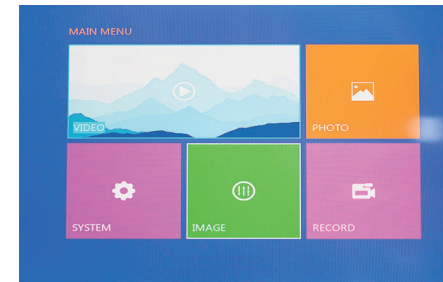


Downhole rope

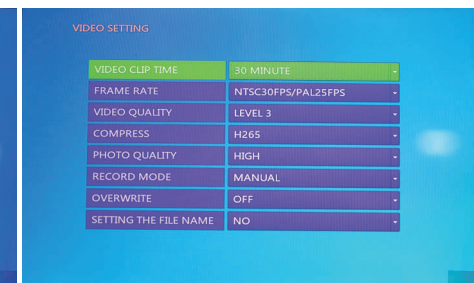
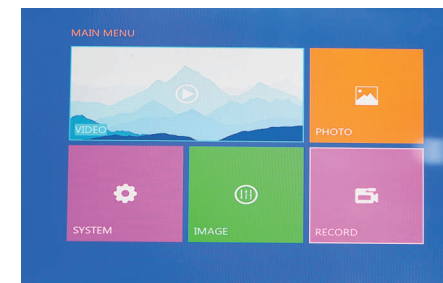
5. Time settings: press the "OK" key to time Settings, press the "up/down/left/right" key to selection the time /date, press the "OK" to surem then press the "menu" to return.



6. Picture setting: Click the "Menu" key to enter the menu interface, press the "up/down/left/right" key to select, click the "OK" key to set and edit, save the Settings, click the "menu" to return.



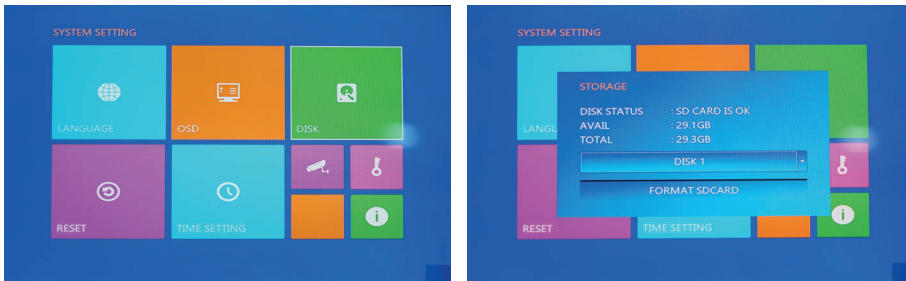
7. Video setting: Select the video setting by the "up/down/Left/right" key, Press the "OK" key to edit the setting, save the setting, click the "menu key" to return.



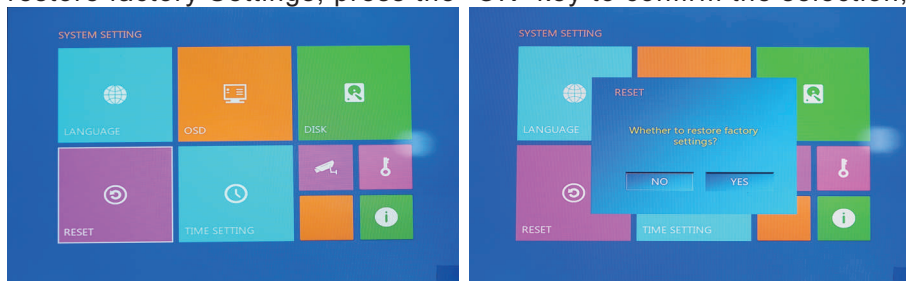
2.OSD Setting:press "up/down/left/right" select the " OSD" system , press "OK" key, then edit the information and storage , press the " menu" to return.



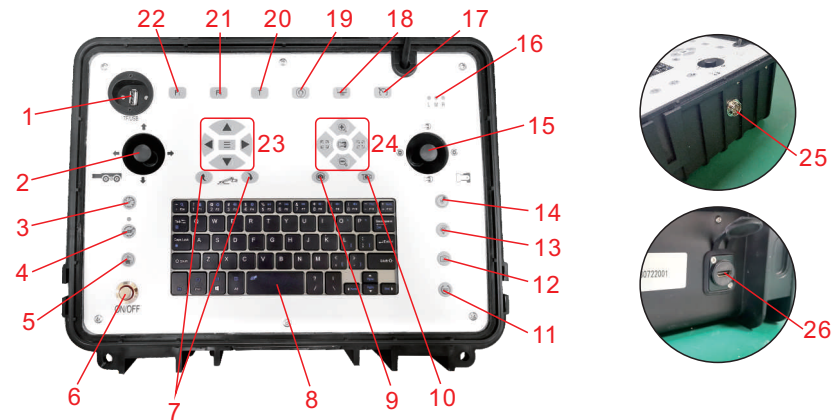
3.Storage Setting: press " up/down/left/right" key to change the format,press the "OK" to sure,Press " Menu" to return.



4.Restore factory Settings: press the "up/down/left/right" key to restore factory Settings, press the "OK" key to confirm the selection,

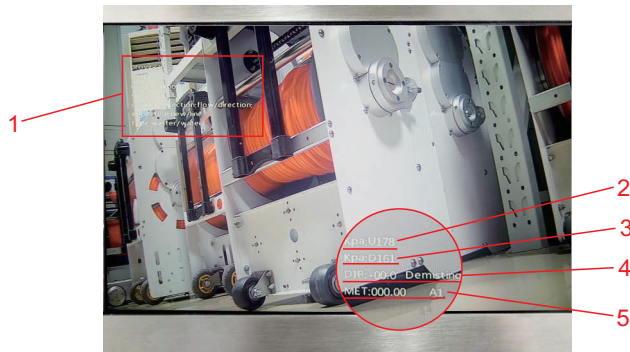


Control Panel Introduction



- ◎1—USB
- ◎2— Forward/Backward/Left/Right
Control the robot direction
- ◎3— Speed adjustment (reserved key)
- ◎4— Manual/electric switch (reserve key)
- ◎5— Remove Protection
When there is a block turn that the spider is in operation,Please click to remove the protection state
- ◎6— ON/OFF
- ◎7— Lift/Fall
Controls lift and fall of lens
- ◎8— Keyboard
- ◎9— Photo
Click to take a photo
- ◎10— Video
Click on start/stop recording.
(To pause recording, click ▶ right button to pause/resume recording.)
- ◎11 — Reset
Press the button,the front lens reset,and the image erect
- ◎12 — Camera Switch
For switch front and rear camera
- ◎13 — Dimming
Adjustable front light brightness
- ◎14 — Rotation Lock
- ◎15 — Rotate/Flip
Control the front camera lens rotation and reversal
- ◎16 — Position Indicator
The left and right sides are the flip indicator light, and the indicator light will be on when the spider lens is flipped to the limit Angle. The middle is the reset indicator light, and the indicator light is on after the reptile lens is repositioned
- ◎17— Cruising
- ◎18 — Meter Counter
Turn on the meter counting function and display the data in the lower right corner of the screen
- ◎19 — Ambient light
Turn on/off the front light
- ◎20 — Character
Click this key in the detection process of bearing indication, detection time and other characters disappear, click the character display again
- ◎21— F2
(Long time press to release the pressure alarm)
- ◎22 — F1
It is for switch the large crawler camera and small crawler camera . (meanwhile, there's a data show on the screen ,A1,A2,A3 ,to match the larger and smaller crawler)
- ◎23 — (Menu)Up/down/left/right
Inter the menu up/down/left/right (these two button is spare button)
- ◎24 — Focus/Far/Near
Used to realize lens focusing and zoom function
- ◎25 — Signal connector
- ◎26 — HDMI

Display Character Introduction



1. The upper left corner of the screen is the engineering editing section.
2. Bottom right, first row : "Kpa" is the pressure display of the front lens of the crawler.
3. Bottom right, second row : "Kpa" is the pressure value of the crawler body.
4. Bottom right, third row: "DIP" indicates the tilting Angle of the crawler, and "Demisting" indicates that the front-end defogging function of the crawler is enabled and disappears into the closed state.
5. Bottom right, fourth row : "MET" is the meter meter display of the detection line outlet, and "A1" is the crawler body conversion display in the crawler N+1 mode.

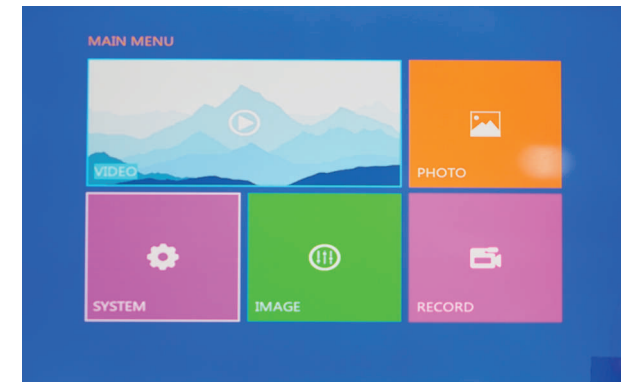
Note:

1. Defogging: When the device is powered on, the defogging function is automatically started, and "Demisting" is displayed on the controller. After 20 minutes, the defogging stops, and long press "F1" to continue to turn on the defogging.
2. Low pressure alarm: Automatic alarm when the pressure of the camera or crawler is lower than 120KPa.
Disalarm method:
 - a. Make the air pressure of camera and crawler higher than 120KPa at the same time.
 - b. Hold down F2.

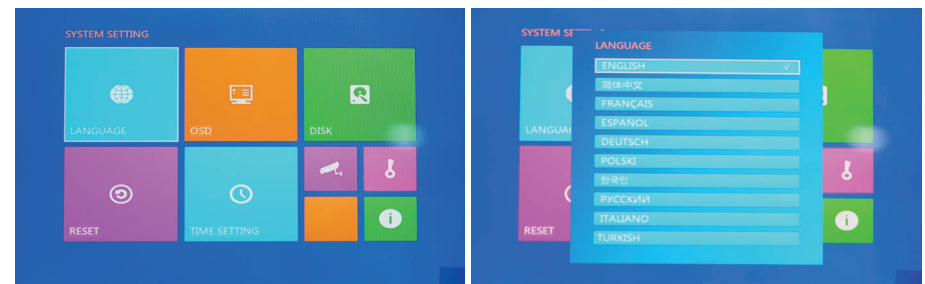
Only for large crawler camera (electric lifting camera).

System Settings

Get into the menu page, press the "up, down, left, and right" keys to select System Settings and press "ok "to open the secondary screen.



1. Language: select the language with the up/down/left/right" key, click the "OK" key to confirm the selection, and click the "menu" to return.



Photos Playback

- 1.Select Photo Replay through the Up/Down/Left/Right key and click “OK” to open it.
- 2.Select the image file,click “Ok” to open and view and click “Menu” to return.

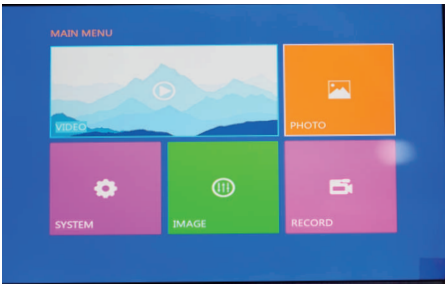


Figure1

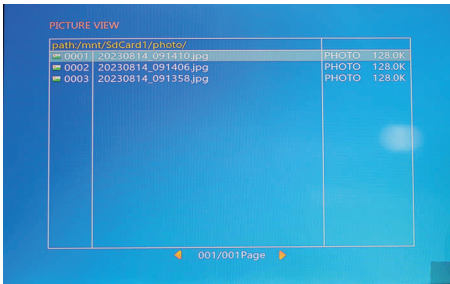


Figure2

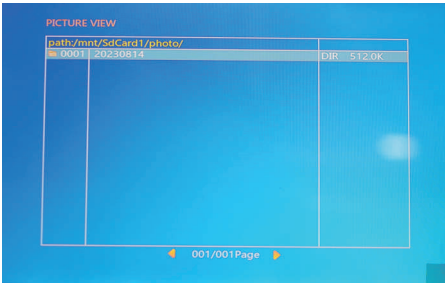


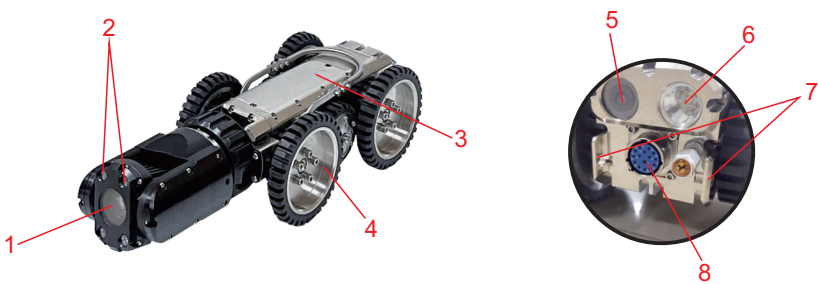
Figure3



Figure4

Note:Delete the picture/video,pls select the "Video" key, and the delete interface will appear to delete the picture/video.

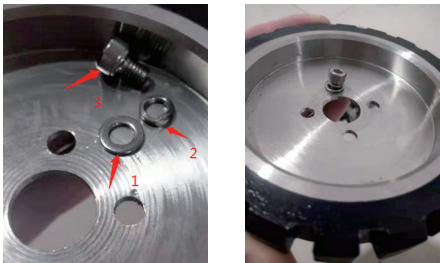
Robot Camera Introduce



- ◎1—Forward-looking lens
- ◎2—Front light source
- ◎3—Crawler body
- ◎4—Wheel
- ◎5—Back-looking lens
- ◎6—The rear light source
- ◎7—Crawler lock ring
- ◎8—Interface of the pay-off car signal

Large wheel install method

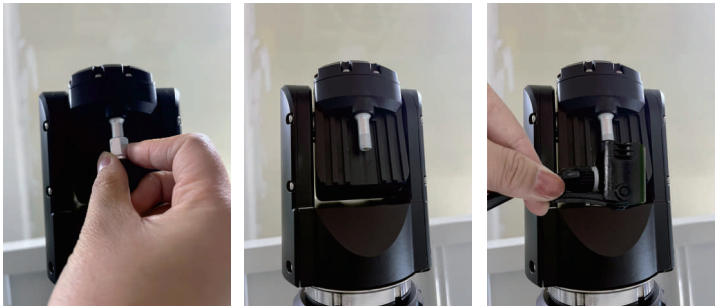
The crawler can be equipped with 110mm large wheels according to the working condition. Pay attention to the installation sequence of screw . The steps are shown as below:



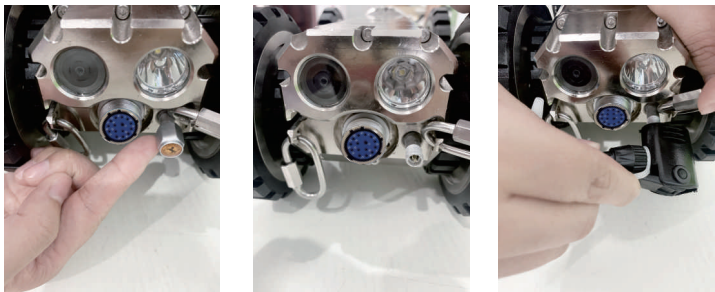
Robot inflating instructions

The normal working pressure range is between **120-180kPa**, When the pressure lower than 120kPa, please inflate it in time.

1. The following is the camera lens inflation operation method :



2. The following is the crawler body inflation operation method:



Menu-Video Playback

Press “Menu” enter into Menu page.

- 1.Select “Video Playback” through the “Up/Down/Left/Right” key and click “OK” to open it.
- 2.Select the video file,click “OK” to open and play the video,and click “Menu” to return.

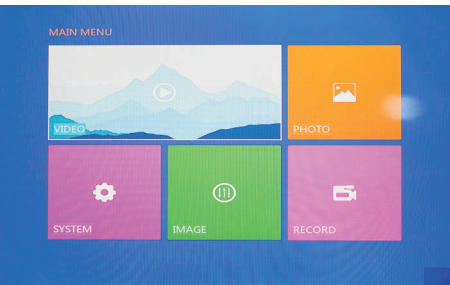


Figure1

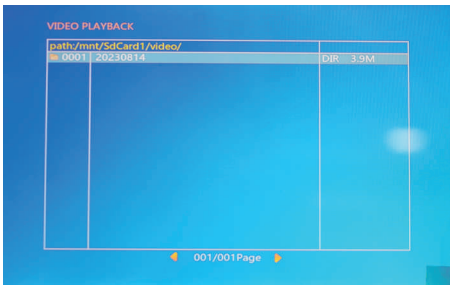


Figure2



Figure3

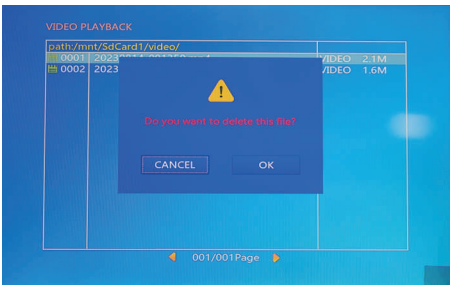


Figure4

Note:Delete the picture/video,pls select the "Video" key, and the delete interface will appear to delete the picture/video.

Electric wire barrow's take-up and pay-off instruction

When the clutch pin is not pulled out, the electric wire reel is in electric take-up mode(as shown in Figure 1).

When the clutch pin is pulled outward and rotated to the vertical state, the electric wire reel switches to the manual take-up mode (as shown in Figure 2),and then inserts the take-up handle for manual take-up(as shown in Figure 3-4).

Note: The clutch pin should also be pulled out when pay-off the wire.



Figure1



Figure2

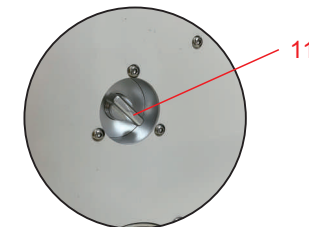
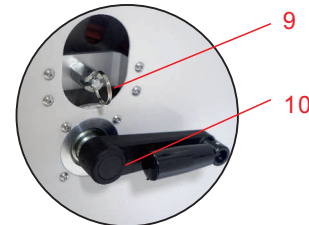
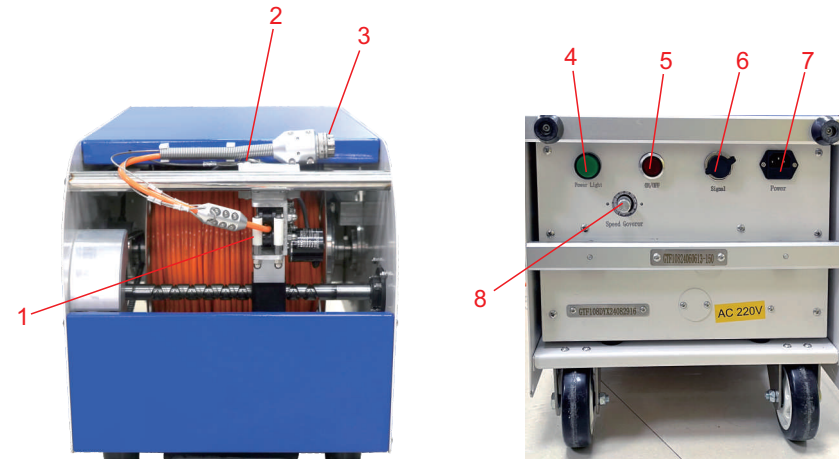


Figure3



Figure4

Wire Cable Introduce

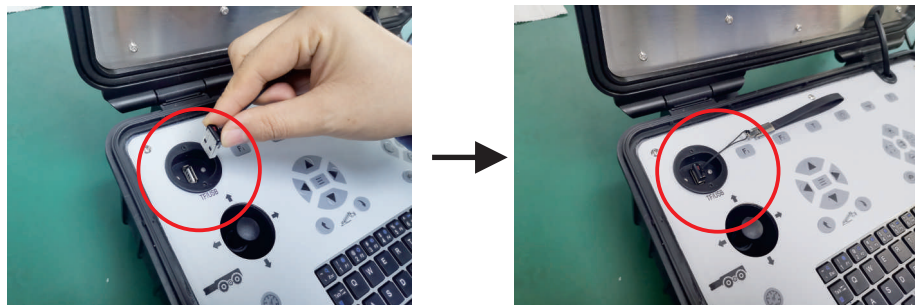


- ◎1—Inspection cable outlet
- ◎2—Pay-off car lock
- ◎3—Interface of crawler
- ◎4—Power light
- ◎5—Main power switch
- ◎6—Signal Line
- ◎7—Power Interface
- ◎8—Winding Speed Control (Developable Function)
- ◎9—Clutch pin
- ◎10—Take-up handle
- ◎11—Damping switch

Note: The damping switch of the reel cable car should be screwed to the suitable tightness position. If it is too tight, it will cause difficulties for the cable pay-off . If it is too loose, the internal cable reel will change position , causing confusion in the detection line take-up.

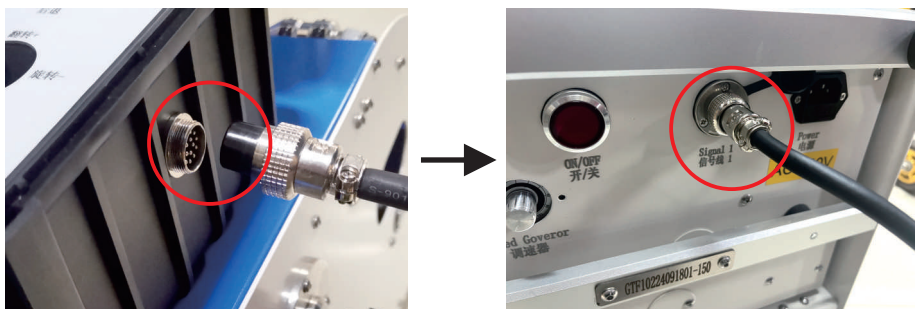
System Connect

1.Install the USB disk



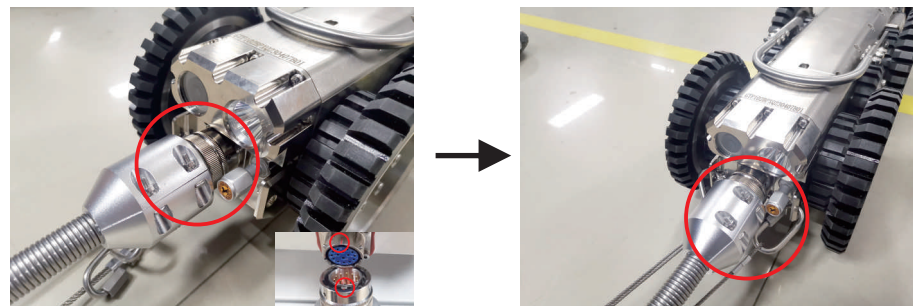
Note: When connecting, connect the USB to the USB interface in the upper left corner of the control panel. Tap the plug, make it fit tightly.

2. Connection description of signal line



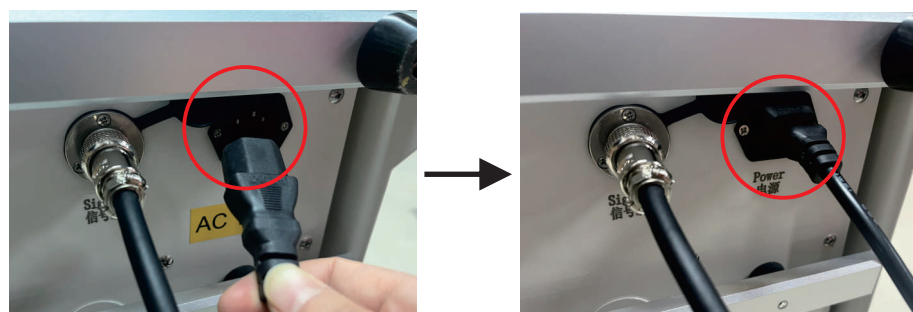
Note: Connect signal line connect to the left of controller's interface, the other end of signal line connect to the interface of signal line on the back of electric wire barrow .After confirming that both ends are connected, gently twist the connection lock to make it fit tightly.

3. Connect to Crawler robot camera and electric wire barrow



Note: When connecting, install the red spot at the signal interface of the detection line and the red part of the robot signal interface, push it inward and rotate it clockwise to lock it. If you hear a "click" sound, the connection is complete. (After use, turn counterclockwise and pull the interface outward to complete the disengagement).

4.Description of the connection of the power of the cable cart



Attention: in this step, the charging port is at the lower left of the back of the pay-off cart, providing sufficient power for the whole equipment (ac power should be ensured during the test).