Robot Camera

Instruction Manual

Dear users:

Thank you for choosing this product. For your safety and for your correct use of the robot to give full play to its various functions and performance, please read this manual carefully before using the product, and operate in accordance with the relevant installation, maintenance and precautions in this manual. Make sure this product can provide valuable service for your work.

Precautions

1. Please read the instruction carefully before use.

2. Don't drop or press.

3. Do not turn on power supply during installation, cleaning and repair.

4. If product has abnormal sound or smell during use, cut off power supply immediately.

5. Power supply box is not waterproof, keep it dry.

6. Be sure to keep hands and plug dry when plug in or plug off.

7. If the user disassembles the machine or there is loss, no warranty.

8. The operation of the product should be standardized, otherwise it will lead to bad camera and cable damage.

9. If the product is upgraded, the instruction may be different from the product without prior notice.

Features

1. All-metal anti-oxidation and corrosion resistant body, IP68 waterproof.
2. With front and rear 2 megapixel, high-definition, low illumination cameras.
3.The front camera is mounted on a Pan-Tilt, which can be adjusted horizontally to 360 degrees and vertically to ±90 degrees. The height of the camera is adjustable.
4. Four motor driven wheels, all-time stand by and powerful. The driving speed of the machine can be adjusted in high, medium and low three levels.
5. Special shaped non-skid tire, designed according to the force in the pipeline, suitable for all kinds of wet and slippery scenes.
6. Eight high-power lights (six in front and two in rear), headlight is adjustable. Good lighting effect.
7. All metal winch with automatic wire winding function. With automatic meter count function, vehicle driving distance can be displayed synchronously and can appear in the screenshot.
8. Special tensile, scratch and corrosion resistant cable.
9. Power input: 110V-220V, emergency inverter power supply can also be used.
10. Real-time display when machine is moving forward, backward and turning left or right.
11. With tablet, installed operating software, simple operation and easy to use.
12. With photo and video functions.

Specifications

Part	Item	Specifications
Robot	Material	High Strength Alloy Material
	Motoring Mode	Four-wheel Motoring
	Moving Mode	Four-wheel Crawling
	Speed	2-25 meters/min 3 levels speed, Adjustable
	Motor Power	100W
	Camera Pixel	2 Megapixel
	Lens Rotation Angle	360 Degrees Constant Speed Infinite Rotation
	Lens Flip Angle	190 Degrees
	The Lens Material	Alloy Steel
	Light Power	40W
	Front Lens light Source	4 Main Headlights, 2 Auxiliary Lens Lights
	Rear Lens Light Source	2
	Lightness	Adjustable
	Waterproof Grade	IP68
	Size	522.5mm*212mm*198.5mm
	Weight	9.8KG

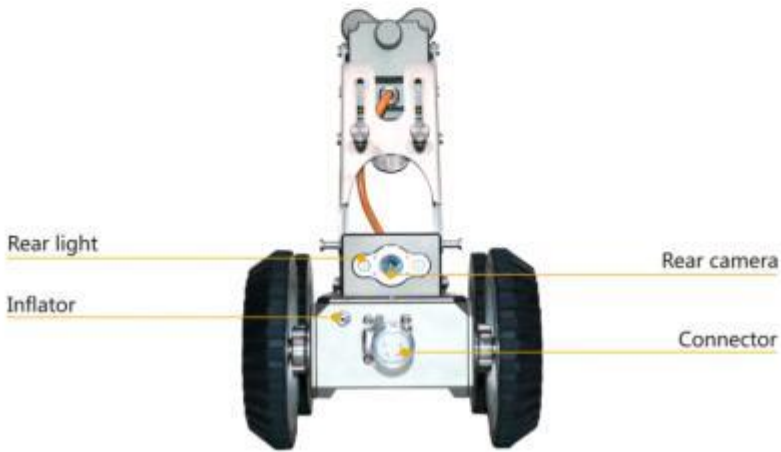|		
	Wire Frame Material	All Metal
	Cable Length	60m (standard)
	Cable Material	Tensile, Scratch and Corrosion Resistant Cable
Wire Frame	Wire Winding Mode	Automatic Wire Winding
	Meter Count Mode	Electronic Counter
	Power Supply	110V-220V
	Wire Frame Size	400mm*444.7mm*300mm (standard)
	Wire Frame Weight	15.8KG (standard)

Operating Environment and Conditions

Pipe diameter: ＞300MM

Temperature: -10 ° C - +50 ° C

Relative humidity: 0%-95%, no condensation.
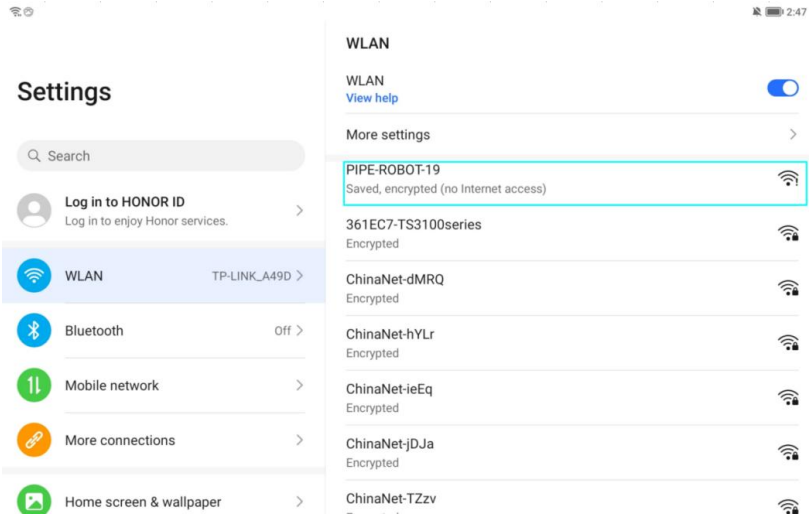
Atmospheric pressure: 70-106Kpa.

Parts Introduction

Rotating head

Front light

Front auxiliary light

Front camera

Handle

Body

Lifting bracket

Wheel

Rear light

Rear camera

Inflator

Connector

Winch frame

Power box

Cable

Cable connector

Power switch

Retract cable handle

Emergency brake switch

Power plug
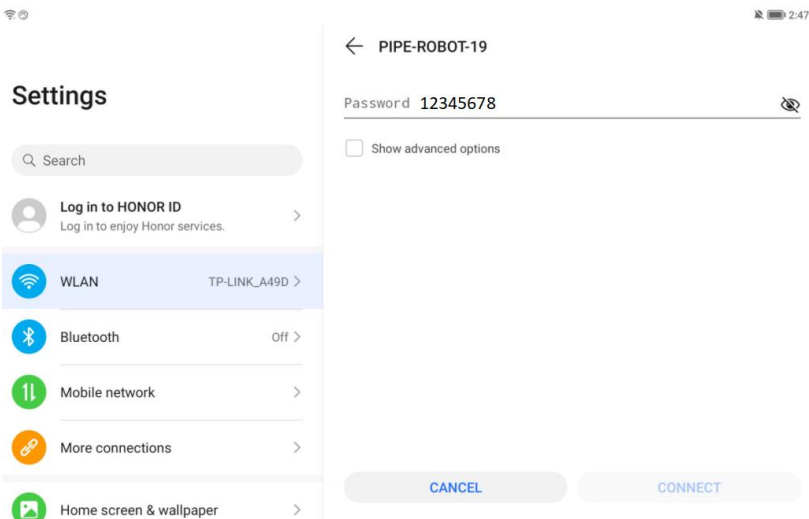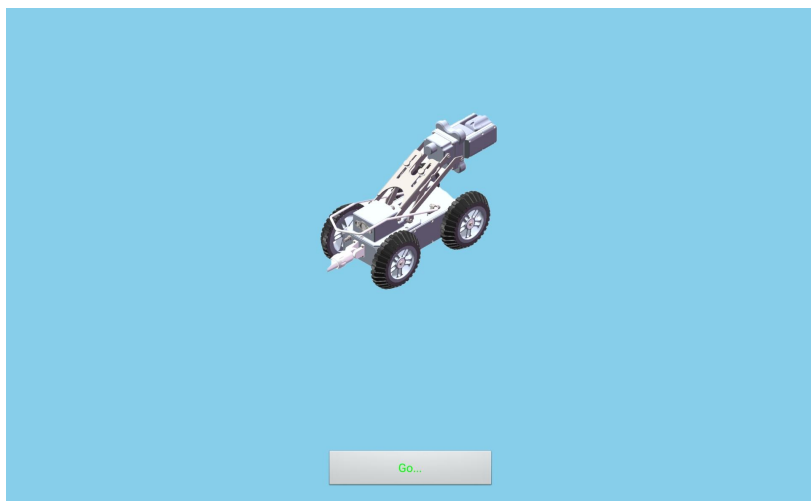
Retract cable brake

Release cable handle

Tablet WIFI Connection and Control

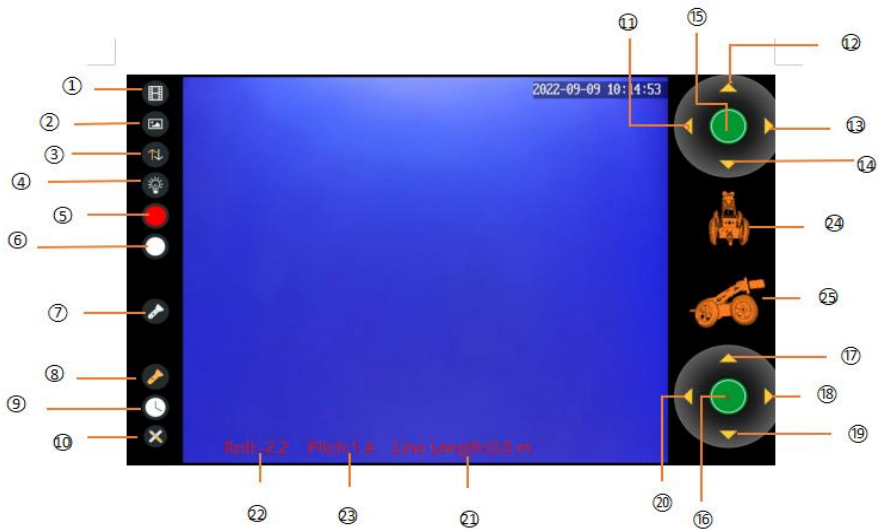1.Tablet WIFI Connection: Open WIFI, search for PIPE-Robot-19.

2. Enter the original password: 12345678, connect to WIFI.

3. Enter the interface: open the icon of the installed robot program and click GO to enter the control interface.
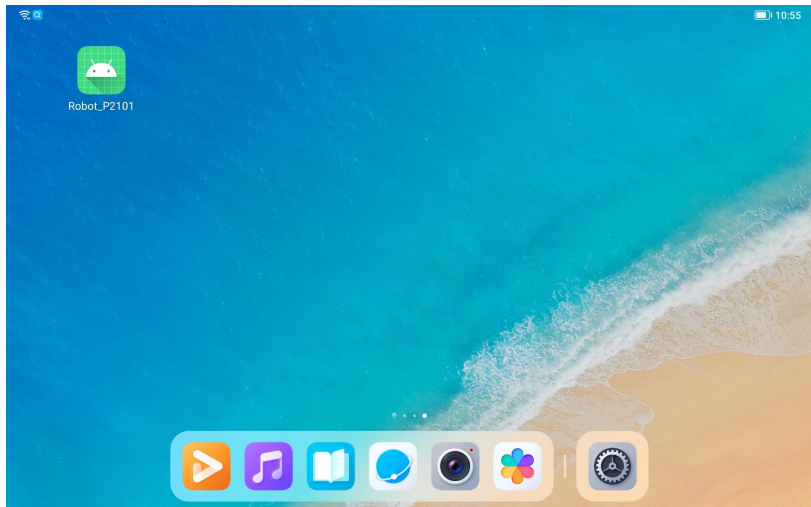
4. Key Functions:

Recording Function：①Video Play ②Album ⑤Video Recording

⑥Photography

Light Control: ④Rear Light Switch ⑦Front Light Brightness Adjusting Switch

⑧Front Auxiliary Camera Light Brightness Adjusting Switch

180° Rotation Function of Camera: ③Front/Rear Camera ⑪Front Camera

Left Rotation ⑫ Front Camera Upward Rotation ⑬Front

Camera Right Rotation ⑭Front Camera Downward Rotation

⑮Front Camera Reset

Moving Function: ⑰Forward ⑲Backword ⑳Turning Left ⑱

Turning Right ⑯ High/Medium/Low Level Switch

Distance Count Function: ⑩Meter Counter Reset ㉑Cable Meter Display

Time Synchronization: ⑨ Time Synchronization Button

Wheel Tilt Angle Display Function: ㉒Roll Angel ㉓ Pitch Angel ㉔

Roll Angle Three-dimensional Display   ㉕ Pitch Angle Three-dimensional Animation Display

Operation and Use

1.Preparation and Inspection Before Use:

① Connect the robot machine with the winch and lock it tightly. ②Make sure that the front camera horizontal, axial automatic reset function and zoom function is normal. ③Make sure to switch between front and rear cameras is normal. ④ Make main light and auxiliary light are adjusted properly. ⑤ Make robot machine can flexibly go forward, backward, turn left and right. ⑥ Make cable to release and retract properly. ⑦ Make sure to press the emergency stop button to shut down the robot system.

2.Operating procedures, methods, precautions and prevention measures for errors during startup and use:

① Hanging the robot machine to the sling, the body should be kept horizontally and slowly downward, and avoid shaking and friction to damage device. Let the car body horizontally and slowly landing, head up, tail down. When the body is landed, remove the sling.

② Start the control system, control the vehicle slowly forward, move the cable to the pipe entrance and fix it.

③ Turn on the main light and auxiliary light, and adjust to meet the image requirements.

④ After the cable transmission is normal, the vehicle speed can be adjusted according to the detective requirements.

⑤ During the process, pay close attention to the state of various parameters, especially the information of vehicle tilt state, to prevent the vehicle from overturning.

⑥ When the vehicle is retreating, turn on rear-view camera, and the cable winding machine speed should be match with the reverse key to slow down the speed and retract cable.

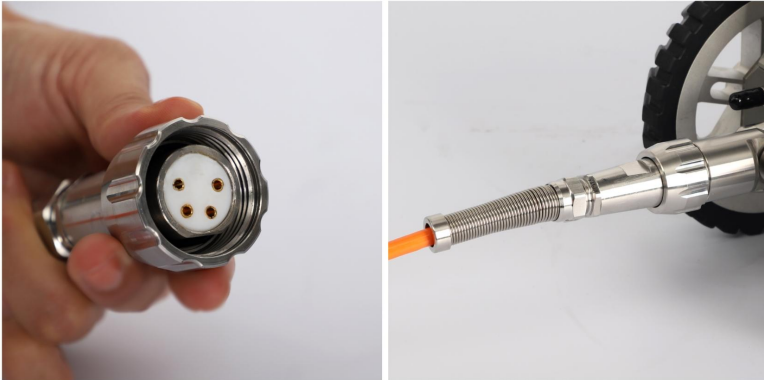⑦ When turning in the pipe, drive slowly to prevent rollover.

⑧ After the inspection, stop the robot machine in an appropriate position, hang the sling hanger on the robot, and slowly lift it.

System Connection

Connect cable and body connector

Note:
1、Align pinhole position
2、Check integrity of waterproof ring
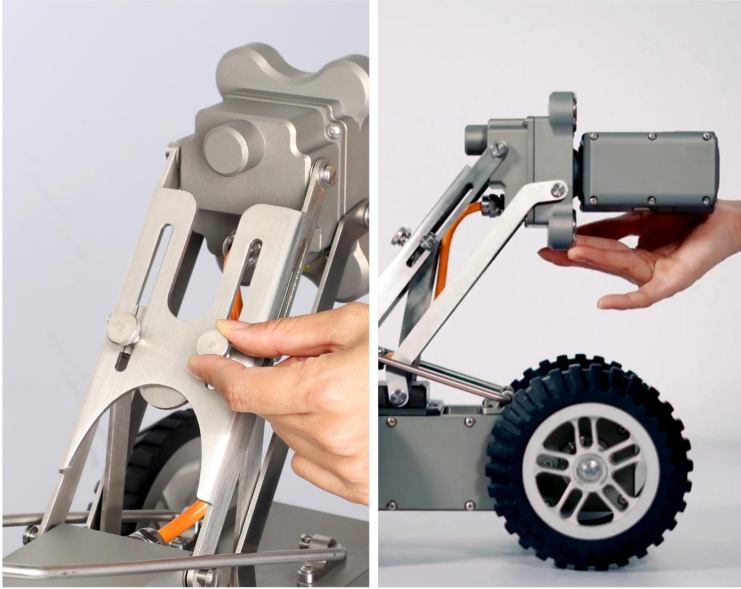3、be sure the connector is clean

Connect the power supply

Figure 1: 110-220V

Figure 2: Inverter (Inverter is not included)

Front camera lifting:

loosen the screw firstly, then adjusting the height of the camera,
get a suitable position, and then tighten the screw

Put the device body into the demand position:

lift the handle when pulling the device body,
do not lift the cable

Turn on the power switch 2
(the indicator light is on)

Open the cable reel brake

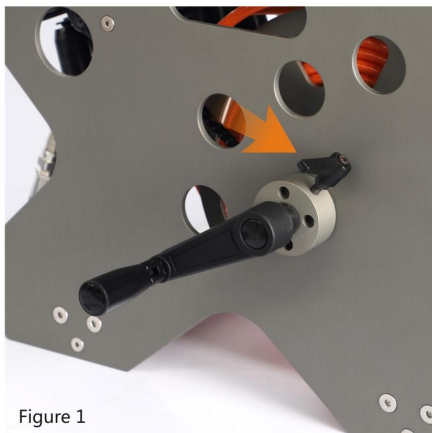The power plug turns the brake lever 90 degrees from Figure 1 to figure 2

Figure 1

Figure 2

Release the cable:

Pull the cable out automatically when the device moves forward

Pull out the cable by hand as shown

Can not shake the handle counterclockwise to release the cable as shown

It will cause the consequences of loose wires as shown

Retract cable:

While turning the handle clockwise,
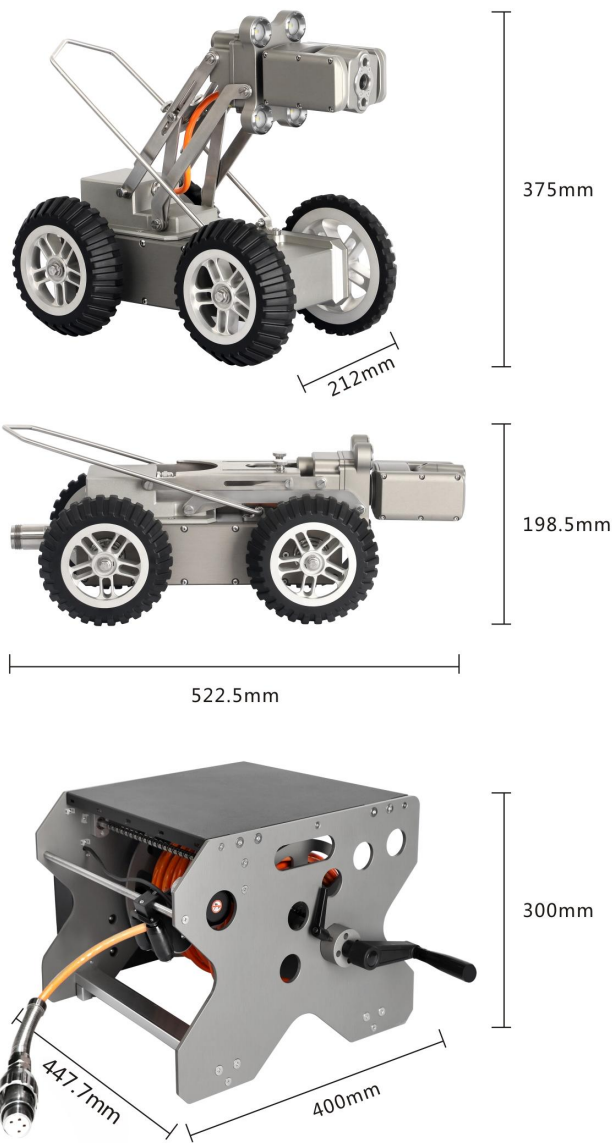slowly pull the cable out by hand to ensure that the cable is closely

Maintenance after used:

1. Clean the body (do notpull the cable when cleaning)
2. Wipe it with a dry cloth

Product Size

Product Size

375mm

212mm

198.5mm

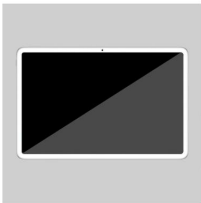522.5mm

300mm

447.7mm

400mm

Package List

Metal body with camera

Metal frame with cable

Display screen

Power cable

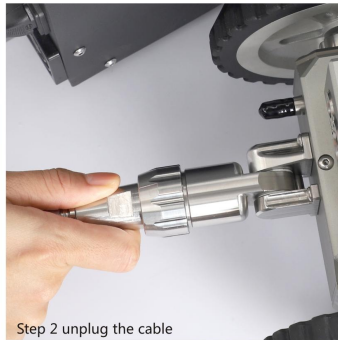# Attention

Protect PTZ camera:

1. Do not hit the front camera ⊗

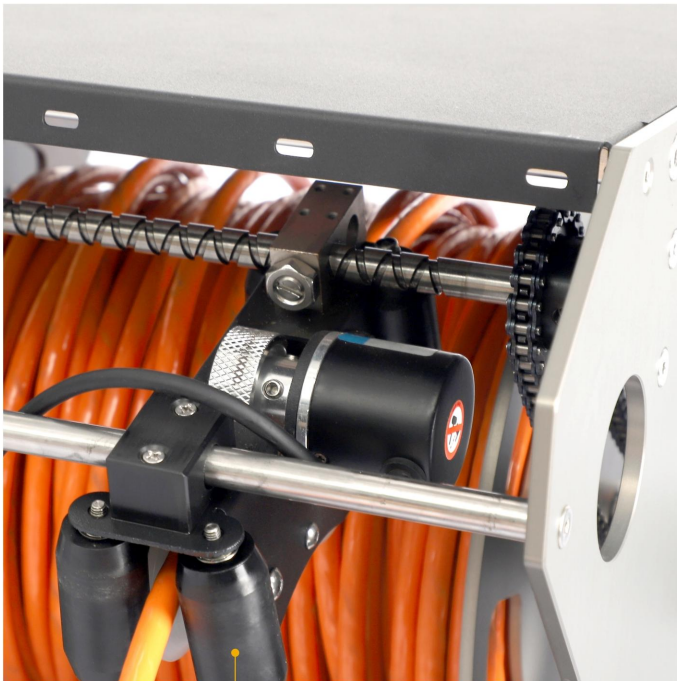2. Do not rotate the camera horizontally manually ⊗

3. Do not rotate the camera vertically manually ⊗

Unplug the cable connector until power off

Step 1 turn off the power

Step 2 unplug the cable

Clean up cable rolling bearing timly to
keep it clean and smooth

cable rolling

Fault Analysis and Troubleshooting

Fault Analysis	Cause of the Fault and Precautions
No Power	1.Check whether power is correctly connected. 2. Check whether the main switch indicator is steady on or whether the plug is in good contact. 3. Whether the emergency stop button is locked.
The robot can walk, no image.	1. Check whether the interface is locked. 2. Switch cameras and check whether they have images.
No Meter Measurement Number Display or big measurement Error	1. Check whether the meter counter wheel and cable are in good contact, and whether there is dirt blocking the meter counter wheel. 2. 2. Restart device and tablet.
Remote Control Failure	1. Check whether the computer WIFI connection is well. 2. Restart the computer and reconnect the WIFI.
The Tail Joint of the robot Cannot be Inserted	1. Check whether the joint vacancy is one to one aligned. 2. Check whether the plug at the end of the vehicle is deformed.
Note	If the fault cannot be solved, do not disassemble by yourself. Please contact after-sales maintenance personnel.

Care and Maintenance

1. Daily maintenance and care: The machine must be kept clean and tidy, and shall not be placed in places with volatile or corrosive substances. Personnel shall be appointed for daily maintenance and cleaning after each use. The storage place must be kept dry. Desiccant can be used if necessary.

2. Maintenance cycle: quality and measurement inspection(maintenance) once a year, measurement qualified should be unified stored.

Care and Maintenance

Name	Phone Number		
Address Product Name	Type		
Purchase Date	Year	Month	Day
Dealer	Phone Number	Contact Person	
Fault Description			