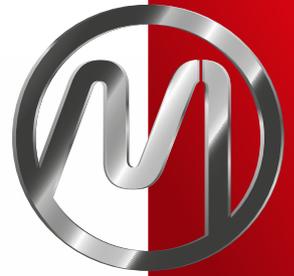


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# C40 Series Industrial Videoscope

## OPERATION MANUAL



**Warning: please read the instructions before using the machine**

C40 Series Borescope is developed by years of careful study and absorption of advanced technology at home and abroad, independent innovation, research and development. It is portable and ease use, 360° arbitrarily oriented, integrated design, lightweight and portable. 3.5 inch TFT LCD screen, high definition image sensor technology, HD image, with the function of taking video and photographs, probe and protective device corrosion, wear resistance, waterproof and dustproof meets IP67 requirements.

### **COPYRIGHT DECLARATION**

This specification applies to C40 Series products. Copyright owns to our company, and all rights reserved. Without agree, anyone is not allowed to copy, reproduce or translate this specification. The offender will be investigated legal liability.

### **WARNING**

Due to the continuous updating of product technology, rapid market changes, the editing time is limited. We do not guarantee that there is no error in this manual, so this manual is only for user's reference, does not provide any form of guarantee. C40 Series Borescope For the manual amendment, we have no responsibility and obligation to inform any company or individual.

## 1. Users Instruction

### 1.1 Use and application

This product is only applied in the real-time detection and analysis for industrial equipment and automobile production and maintenance.

### 1.2 Maintenance and modification

This product has not any spare parts which can be repair by users. Any disassemble or maintenance is not allowed. If damages and losses caused by this,our company does not assume any responsibility.The product maintenance is only afforded by our company and the authorized dealers and distributors.

### 1.3 Attentions

When using this product, please observe the following:

- Prohibit the use of this instrument to observe the body or the animal's body;
- Do not use or store the product on explosive, strong electromagnetic field or with combustible gas, otherwise it may cause fire or explosion;
- Do not use the product to check objects with current carrying, so as to avoid the occurrence of electric shock;
- During the use process, please do not touch the end of the lens, in particular, pay special attention to the use in the high temperature environment, the end of the lens may cause burns;
- Do not watch the LED light source at the end of the lens straightly, avoiding the effect of strong light on the visual acuity;
- Never excessive bending, stretching, twisting, rolling cable, otherwise it may cause cable disconnect, a fire or electric shock accident;
- Long term use of this product will cause the lens to produce stains, resulting in blurred images and the impact of data collection, please use alcohol or acetone to clean the objective lens;
- If there is abnormal in the angle adjustment operation, stop the current operation, and turn off. Then contact the supplier;
- Keep the insert tube away from all liquids, except fresh water, salt water and oil.
- When finish using, please clean the front section of the instrument in time, to prevent corrosion.



## 2. Product brief introduction

### PARAMETERS:

Probe diameter	φ2mm	φ2.8mm	φ3.8mm	φ4.2mm	φ4.8mm	φ6mm
Tube length	1-2m	1-2m	1-3m	1-2m/1-5m	1-2m/1-5m	1-5m/1-7m
Depth of field	5-50mm	5-50mm	8-80mm	8-80mm	8-80mm	8-80mm
Pixels	160,000pixels	160,000pixels	1 megapixels	1megapixels	1megapixels	1megapixels
View direction	Direct	Direct	Direct/Side	Direct	Direct	Direct/Side
Bending angle	0°	≥150°±10°	≥150°±10°	≥150°±10°	≥150°±10°	≥150°±10°
Field of view	120°	120°	85°	85°	85°	85°
Illumination Type	Rear-mounted Fiber		Rear-mounted Fiber/Front LED light			
System operating time	≥3H	≥3H/≥4H	≥3H/≥4H	≥3H/≥4H	≥3H/≥4H	≥3H/≥4H
Image resolution	640*480	640*480	1280*720	1280*720	1280*720	1280*720
Illuminance	8000LX	16000LX/ 2000LX	16000LX/ 2000LX	16000LX/ 2000LX	16000LX/ 2000LX	60000LX/ 16000LX
Probe control	Mechanical damping control					
Probe material	Titanium alloy protective shell					
Probe articulation	360° all-way					
Digital zoom	Support real-time 4x zoom, 8x partial zoom when playback					
Brightness Level	Manual 7-level adjustment					
Negative function	Can be opened					
Cross cursor function	Can be opened					
Display	3.5 inch TFT daylight display, visible under sunlight					
Photo/ Video	Pictures can be captured during recording					
Document format	Image: BMP/JPEG		Video: MP4			
Image flip	180°					
Image preview	List preview mode, full-screen view optional/ delete/ time watermarking					
Memory	Standard 8G capacity TF card, maximum support 32G					
Equipment durability protection device	buffer protection device for connecting main engine and wear-resistant pipe					
Insertion tube	Oil resistant and anti-corrosion					
Compatibility	Replaceable consumable tungsten braided insertion tube					

**Note: Field of view may vary due to the length of tube, please kindly confirm with sales.**

### BATTERY:

Power	18650 rechargeable lithium battery,real-time online charging
DC	4.2V

### OPERATION ENVIRONMENT:

System operating temp	-10~50°C	Storage temperature	-20~60°C
Tip operating temp	-20~60°C	Relative humidity	15 ~ 90%

### HOST:

Host Dimension	240mm*102mm*126mm	Water proof	host IP55, probe IP67
Instrument Case	411mm*321mm*165mm	Input port	HDMI
Weight	≤0.55kg(Host + Base + battery)		

### 3. Operations

- 3.1 Take out the instrument: loosen the lock of the case and take out the videoscope out. Please discs out and cling to the probe, avoiding collision probe and scraping probe lens.
- 3.2 Start-up preparation: check whether all parts of the equipment are in good condition, then install battery and TF card. Press and hold the power button for 3 seconds.
- 3.3 Insert the tube: insert the insertion tube into the equipment gently, the direction of the front probe is controlled by operating the Joystick.
- 3.4 Adjust the brightness: adjust the brightness of the light source to get the appropriate illumination to make the picture achieve the most obvious effect.
- 3.5 Detection operation: during observation, the direction of the probe is controlled through the operation of the joystick, and the images and videos are taken at the same time.
- 3.6 Insertion tube recovery: move the joystick to the middle position, make sure the inserted tube is in straight state, then pull it out slowly.
- 3.7 Receiving instrument: after use, turn off the power switch, remove the battery, put the instrument in the portable box, insert the tube plate well, ensure that no part will be squeezed to the lid and close the case.

### 4. Working modes

C40 series industrial videoscopes have three working modes: real-time detection mode, playback preview mode and system setup mode. Details of the various modes and the key functions, please refer to the "Table 1. Button function list".

(Key function details list)

BUTTON	NAME	REAL TIME DETECTION MODE	PLAY BACK MODE	VIDEO PLAY	SYSTEM SETTING	TIME SETTING
	On/Off	Real time detection /Image freezing	-	-	-	-
	Upward	-	Upward	-	Upward	Upward
	Return/Playback	Photo/video playback	Return	Exit	Return	Exit
	Menu/Ok	Enter into menu	-	-	Ok	Ok
	Downward/Switch for photo and video	Switch for photo and video	Downward	-	Downward	Downward
	LED brightness control	Adjust brightness				
	Rocker	Control the direction of the probe: up/down/left/right				

#### Real-time detection mode:

Press and hold the power button for 3 seconds, the blue light in the upper left of the device will lights when the system starts up. The real-time detection mode will be entered by default. In this mode, the user can observe the image detected by the camera through the host display.

The joystick can control the movement direction and speed of the front camera. Stop the joystick to lock the current position of the camera. Short press the power button to view the current screen. Freeze, press again to release the freeze.

- The panel button can adjust the brightness of the LED illumination, the brightness is adjustable at 7 levels, and the icon in the upper right corner of the screen displays the current brightness level. Brightness adjustment can only be performed in real-time detection mode.
- The icon is displayed by default in the upper left corner of the screen, indicating that the camera is currently in the camera mode. Press the button on the back of the main unit to take a photo. The button on the main unit panel can switch between the photo/ video recording mode. The icon indicates that the recording mode is currently in progress. Press once to start recording. The screen shows the recording duration, and then press the recording again to end the recording.

#### System setting mode:

In the real-time detection mode, press the setup menu to enter the system setting mode, in which the following system parameters can be set:(FIG 1)

- Image zoom: The up button presses the real-time image to zoom in, the down button image zooms out, and the number in the upper right corner of the screen indicates the current zoom factor, which can be magnified up to 4 times.
- The image display is divided into 3 different effects: color, black/ white, and negative.
- The reference line could be switched on or off.(FIG 2)
- The data watermark information could be switched on or off.
- Image format could be stored in JPEG / BMP.
- Image Rotation could be chosen to turn off/on. After turning on, the image will rotate 180°.
- Image size could be selected from 960\*720/ 1280\*720. After re-selecting, the system will restart.
- Time and date setting.
- Language: Simplified Chinese, Traditional Chinese, English, Japanese, Korean, French, German, Portuguese, Spanish, Russian, available in ten languages.
- Format the memory card, please use it with caution.
- Restoring the default settings will restore all device settings to factory state.
- Select the current version information of the system and perform system upgrade settings.

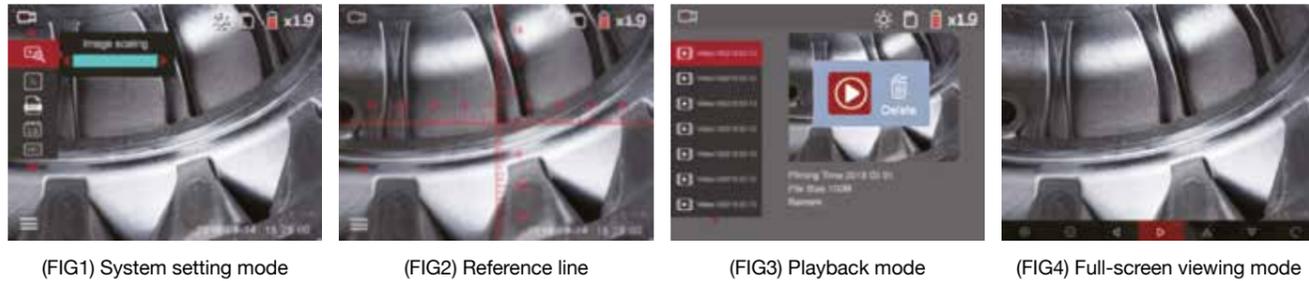
#### Playback mode:

In the real-time detection mode, please press the return / preview button to enter the playback mode. Images and videos are stored separately and previewed in a list. The current file information will be displayed at the same time as the preview. After the file is selected, the icons and appear on the interface, and the current file can be viewed or deleted in full screen.(FIG 3)

- In full-screen viewing mode, there are 7 icons at the bottom of the screen: "+ / -, Left / Right, Up / Down, Return", which can zoom in / out, move to the Left / Right, Up / Down, and return to the previous menu. The Left/Right and Up/Down keys are only available for enlarged images and in full-screen mode. (FIG 4)
- First select the file you want to remove. When "" and "" appear on the interface, "" means cancel the deletion operation, file will be deleted directly when you select "".

## 5. Reading photos and videos files

Please remove the TF card from the host card slot, insert it into the card reader. The data could be read directly through the computer. Storage path: "My Computer\ Removable Disk\DCIM".



Note: Please do not pull out the TF card when reading data, otherwise abnormal errors may occur.

## 6. HDMI external output

The device host can be connected to the display through the mini HDMI cable, and the display will directly show the image detected by the camera.

## 7. Power off

During normal operation, keep pressing On/Off button for 1 to 2 seconds, it will shut off. It needs to store some system parameters and the image data, which will take a few seconds to finish the power off operation.

## 8. Charging

The  in the upper right corner of the screen displays the current battery level. When the battery is running out, please charge the device online through the Micro USB

Note: This interface does not have a data transfer function.

## 9. Replace the insert tube

### Part 1: Insert tube replacement (inserting)



**STEP 1:**  
Please insert the tube from the opening at the top of the main unit so that the triangular arrow on the top cover is aligned directly above the opening.



**STEP 2:**  
Lock the main unit and the tube with a nut to complete the installation.

### Part 2: Insert tube replacement (extracting)



**STEP 1:**  
Loosen the nut to release it from the tube.



**STEP 2:**  
Hold the nuts and tube by one hand, push them to separate the pipe line from the main unit.



**STEP 3:**  
Removed the nut, pull out the tube from the main unit.

**NOTED:**  
Avoid grabbing the tube to push directly. Also should not push too hard, it may damage the optical fiber.

### STANDARD CONFIGURATION:

C40 series borescope, Detachable magnetic base, Instrument case, Shoulder belt, Card reader, 8G SD card, Charger, Manual.

### OPTIONAL:

HDMI cable

## 10. Instrument storage

- Please keep the instrument at regular room temperature, keep it clean, dry and stable;
- It is prohibited to store the instrument in high temperature, high humidity, strong light, strong shock, high dust, pollution or corrosive environment;
- Do not collide the instrument with other objects during storage.
- When the product is not in use for a long time, please take out the battery and regularly check the operation of the instrument.

## 11. Solutions to common problems

PROBLEM	REASON	SOLUTION
Boot without reaction	No battery or power shortage	Charge or install battery
Auto shutdown	Battery power shortage	Charge or change battery
Boot screen freezing	System boot failure or battery power shortage	Remove the battery to re install and restart or charge
The image cannot be recorded or found	The capacity of TF card is not enough	Replace TF card or delete useless files



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