COANTEC C40 Series Videoscope

User Manual

Warning: please read the instructions before using the Instrument

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C40 series is an industrial videoscope which independently developed and produced by Coantec, with 360°articulating probe. This product uses 3.5-inch HD display screen and HD industrial camera for clearer images. Protection level for the insert tube is up to IP67,we can specially customize oil resistant tube for customers, which is suitable for more severe environment. One host can be matched with insertion tubes of different specifications(2-6mm), which can realize multi-purpose of one instrument and save cost effectively for users. The whole instrument is small in size, light in weight, more portable, it is a commonly used visual inspection instrument.

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Warning

As our company is committed to continuously improving product functions and improving service quality, any product and software program and content described in the text are subject to change without prior notice. We have carried out strict collation and repeated checks on this Manual, but errors and omissions are inevitable. This Manual is only used as a guide to help you use the product correctly. It does not represent any description of the software and hardware configuration. If you have any questions, please contact us by 0086- 755-89728626.

1. Users Notice

1.1 Purpose and Scope of Application

This product has the feature of real-time image display, users can observe the internal condition of object in real time without disassembling of components.It can also observe other areas which are small, curved, dark and human eyes hard to reach,and It can take photos and videos,suitable for inspection job in industrial fields such as aerospace, energy and electric power, mechanical casting, automobile manufacturing, special inspection industry.

1.2 Repair and Modification

This product does not have any spare parts that can be maintained by users independently. Please do not attempt to disassemble, modify or repair it. Our company does not assume any responsibility for the injury and loss caused to the user by the above-mentioned behaviors. The maintenance service of the product is only provided by our company and authorized dealers.

1.3 Safety Precautions

① Do not use this instrument to observe the body of humans or animals.

②Do not work on the object under test while it is electrified in order to avoid electric shock.

③ Do not directly touch the end of the lens during use; especially note that touching the end of the videoscope after use in a high temperature environment may cause burns.

④Do not look directly at the strong light source emitted by the LED at the front of the probe at close range to avoid injury to the eyesight.

⑤Do not excessively bend, stretch, twist, or roll the insertion tube to avoid damage to the insertion tube or equipment.

⑥ Long-term use of this product will cause stains on the lens, resulting in blurred images and affecting data collection; please wipe the lens with alcohol before use.

⑦Keep the insertion tube away from any liquid except water, salt water, engine oil and light oil.

⑧ After using the instrument, please clean the front end of the insertion tube in time to prevent corrosion.

⑨ During the operation, please move the joystick slowly; if the equipment is abnormal, please stop observing immediately, adjust the joystick to the middle position, retract the insertion tube carefully and shut down the equipment, and contact the manufacturer or distributor in time.

2.Product Introduction

2.1 System Specifications

Host System	
Display Dimension	3.5-inch HD display
Display Resolution	640*480
Digital Zoom	Support real-time 4x zoom ,8x partial zoom when playback
LED Brightness Level	0-7 level adjustment
Auxiliary Measurement Function	Cross cursor guide
Photo/Video	With photo and video functions, can be captured during recording
Document Format	Image :JPEG/BMP; Video:MP4
Image Rotation	0°/90°/180°/270°
Image Preview	List preview mode,full-screen viewing optional/delete/time watermarking etc.
Screen Backlight brightness	3 -level adjustment
Output Port	Micro HDMI
Menu Language	Simplified Chinese、 Traditional Chinese、 English、 Japanese, Korean, French, German, Portuguese,Spanish, Russian, Italian, Dutch etc.
Host Dimension	240mm*102mm*126mm
Package Dimension	411mm*321mm*165mm
Host Weight	0.65kg(include base,battery)

Insertion tube					
Probe Diameter (±0.1mm)	Φ2	Φ2.8	Φ3.9	Φ4.8	Φ6
Camera Pixels	160,000	160,000	1,000,000	1,000,000	1,000,000
View Direction	Forward	Forward/Side	Forward/Side	Forward/Side	Forward/Side
Depth of Field	5-50mm	5-50mm	5-100mm	8-80mm	8-80mm
Field of View	120°	120°/70°	120°/70°	120°/70°	120°/70°
Tube Length	1-1.5m	1-3m	1-3m	1-3m	1-7m
Lighting Mode	Rear-mounted LED,optical fiber light guiding				
Joystick Control	360° all-way articulation				
Probe Unidirectional	Bending Angle Tube length≤3m:150°、 Tube length 3-5m:120°、 Tube length≥7m: 90°				
Tube Material	Tungsten alloy wire wear-resistant braided tube				
Probe Material	Hard alloy protective shell				
Joystick Control	Mechanical control				
Compatibility	Replaceable Tube				
Protective Device	Buffer protection device for connecting host and wear-resistant tube				
Probe Waterproof Level	IP67				

Technical parameters of power supply	
Power Supply	Rechargeable lithium battery (with battery reverse protection)
Battery	3.7V,3200mAh
System Operating Time	≥4H

Operation environment	
Machine Operating Temperature	-10°C-50°C
Probe Operating Temperature	-20°C-60°C
Storage Temperature	-20°C-60°C
Relative Humidity	15%-90%

Note: Configuration parameters may change in the event of a product update, please refer to the actual data.

2.2 Product appearance

Micro HDMI
Micro USB interface
TF Card slot
On/Off
Upward
Return/Playback
Photo/video

Rocker
Menu/Ok
Downward/ Switch for photo and video
LED brightness control

(Key and function interface diagram)

3.Operation Process

1.Take out the instrument: Open the instrument case and take out C40 videoscope. Hold the probe well during removal to avoid collision.

2.Startup preparation: Check whether all parts of the device are in good condition, confirm that the TF card has been installed, and press and hold the power button to turn on.

3.Inspection operation:Insert the tube into the machine/object under test and control the direction of the front-end probe by operating the joystick.

4.Brightness adjustment: Adjust the brightness of the light source to get the appropriate illumination to make the picture achieve the best effect.

5.Shoot/Record:Press the photo/Video button to take photos or videos of the observation results.

6.Insertion tube retraction: Move the joystick to middle position to make sure the tube is roughly straight and then slowly draw it out.

7)Instrument storage: Turn off the power switch, put the instrument into the carrying case,ensure that no part will be squeezed by the cover and close the upper cover.

4.Operation Guide

C40 series industrial videoscope 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
	rocker	control the direction of the probe: up/down/left/right				
	LED brightness control	Adjust brightness				
	Downward/ Switch for photo and video	switch for photo and video	downward	—	downward	downward
	Menu/Ok	enter into menu	—	—	ok	ok
	Return/Playback	photo/ video playback	return	exit	return	exit
	Upward	—	Upward	—	Upward	Upward
	On/Off	Real time detection mode / Image freezing	Play back mode	Video play	System setting	Time setting

● 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 freeze the current screen, press again to release the freeze.Press the upward button ▲ to rotate the image clockwise by 90° each time.

1.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.

3.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:

1.Image zoom : Zoom in/out of the real-time detection image. The number in the upper right corner of the screen indicates the current magnification, up to 4 times.

2.Image display: Color, black and white and negative images can be selected.

3.Reference line: could be selected to turn off/on.

4.Watermarking :could be selected to turn off/on.

5:Image format:could be stored in JPEG / BMP.

6.Image Rotation: The real-time detection image can be rotated by 0°, 90°, 180°and 270°.

7:Image size: could be selected from 960*720/ 1280*720. After re-selecting, the system will restart.

8:Backlight brightness: Adjustable backlight brightness of display screen.

9.WIFI function: Turn on/off WIFI wireless transmission function. This function is optional.

10:Time and date setting.Set the system date and time.

11.Language: Language Settings, including simplified Chinese, traditional Chinese, English, Japanese, Korean, French, German, Portuguese, Spanish, Russian, Italian, Dutch and more than 10 languages.

12.Memory card formatting:Please use it with caution.

13:Restore Default:Restoring the default settings will restore all device settings to factory state.

14:Version information: Select the current version of the system information and 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.

1.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, Up / Down keys are only available under the enlarged images and view the images.

2.After opening the video file, the video will be played at the normal speed. Press ▲ fast forward to play, press back to play, press ◄ok pause, and then press ◄ok again to continue playing.

When you choose to delete a file, "√" and "×" appear on the screen, "×" means cancel the deletion operation, file will be deleted directly when you select "√".

5.Reading Photos and Videos Files

Please take out 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" .
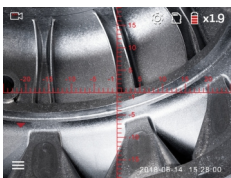
Note: Please do not remove the TF card when reading data, otherwise abnormal errors may occur.
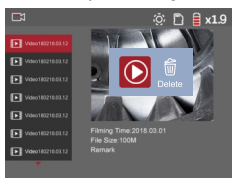
6.HDMI External Output

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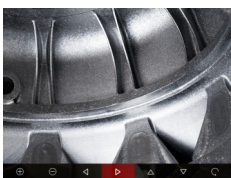

（FIG1）System setting mode

（FIG2）Reference line

（FIG3）Playback mode

（FIG4）Full-screen viewing mode

7.WiFi Operation Process (Optional) :

Notes:

1. Before using WiFi, set the parameters required for the use of the instrument (eg: LED brightness). After WiFi connected, the function keys cannot be set.

2. It is recommended to close the "current connection" of the Android terminal before operation to avoid conflicts.

Operation Procedure:

1. Select WiFi on menu, and the 🛜 sign can be seen on the top of the monitor, indicating that WiFi has been connected.

2. Open WiFi at the wireless receiver, search for WiFi named "CDR_****", click connection, enter the default password "12345678", and enter the next step after successful connection.

3. Open XDV general software (you need to download the software to the wireless receiver in advance and install it), and wait for 2-3 seconds after the image is successfully connected, users can take photos and record videos through XDV software.

8.Charging

🔋 In the upper right corner of the screen shows the current power. When the power is low, please charge the device through the Micro USB interface of the host. Note: This interface has no data transfer capability.

9.Probe Interchange

Part 1:Remove the insert tube (Schematic Diagram)

Step 1:
Loosen the nut by rotating it.

Step 2:
Hold the nut and bolt in hand and push it up to remove the tube from the host.

Step 3:
Remove the nut and draw the tube from the upper end of the host.

Noted: Avoid holding the insertion tube directly with your hand and pushing it up. Do not push it too hard, or it may cause damage to the optical fiber.

Part 2: Install the insert tube(Schematic Diagram)

Step 1:
Insert the tube from the opening at the top of the host, and make sure the triangular arrow on the top cover is pointed directly above the opening.

Step 2:
Lock the host with nut to fix the insertion tube ,then the installation is completed.

10.Shutdown

Long press the power on key in the power-on state, then the screen will display the shutdown screen. At this time, the instrument needs to save the system parameters and files, and generally needs to wait for a period of time. The instrument will shut down after saving.

11.Standard Configuration and Customized Services

The Standard Configuration
Videoscope host X1;Detachable magnetic base X1;Instrument case X1;Card reader X1;8G TF card X1;Rechargeable lithium battery X1;Charger X1;Lanyard X1.

Customized Services
1. Tube lengths, diameters and lighting modes can be customized according to customers' requirements

2. The tube can be added with scale

3. Software function can be customized

4. Forward/ side view interchangeable lens

5. Foreign body retrieval set

6. WiFi module and sound recording module can be customized

12.Instrument Storage

●Please keep the instrument horizontally in the instrument case and store it at room temperature for clean, dry and stable place.

●It is strictly forbidden to store the instrument in a high temperature, high humidity, strong light, strong earthquake, high dust and strong radiation, pollution or corrosive environment.

●Avoid collision between the instrument and other objects to avoid damage.

●When the product is not used for a long time, please take out the battery and check the function of the instrument regularly.

13.FAQ guide

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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