

# COANTEC ME+ Series Borescope

## Operation Manual



Warning: please read the instructions before using the machine

### 2.Product brief introduction

Parameters	
Compatibility	Replaceable consumable tungsten braided insertion tube
Length of insertion tube	1 meter
Probe Control	Mechanical 360°all-way articulation
The maximum bending angle of the insertion tube in a straight state	210°
Illumination Type	Front-LED light (LED light life ≥30,000 hours)
Illuminance	Maximum 20,000lx
Digital zoom	Supports 4x zoom in real time, 8x zoom when playback
Brightness Level	Manual 7-level adjustment
White balance	Automatic white balance
Display	3.5 inch TFT daylight display, visible under sunlight
Image resolution	960*720
Photographing and recording function	YES
Document format	Image: JPEG/BMP Video: MP4
Image preview	List preview mode, full-screen view optional/ delete/ time watermarking.
Memory	Standard 8G capacity TF card, maximum support 32G
Protection device	Buffer protection device for connecting main engine and wear-resistant pipe
Insertion tube	Oil resistant and anti-corrosion
Optional	Cleaning and cooling equipment
Menu language	Simplified Chinese, Traditional Chinese, English, Japanese, Korean, French, German, Portuguese, Spanish, Russian

Camera	
Probe diameter	Φ6±0.1mm
Probe material	Titanium alloy protective shell
Pixels	690,000 pixels
Depth of field	25-100mm
Field of view	85°
View direction	Front

Operation environment	
System operating temp	-10-50°C
Tip operating temp	-20-60°C
Storage temperature	-20-60°C
Relative humidity	-20-60°C

Technical parameters of power supply	
Power	18650 rechargeable lithium battery, real-time online charging
Working voltage	DC4.2V
System operating time	≥3 hours for single battery

Host	
Host Weight	≤0.55kg (with batteries)
Waterproof	Host IP55, Probe IP67
Output port	HDMI

ME+ is a all way articulation multi-function HD Automotive Videoscope that has been fully upgraded by Contact based on the original ME series. This product adopts 3.5-inch TFT daylight display, 0.69MP ultra-clear camera, the probe can bend at a maximum angle of 210° in one direction, the waterproof level of the insertion tube is IP67, oil and corrosion resistance, and the standard model can withstand a maximum temperature of 60°C. Optional high-temperature cooling device can withstand high temperatures of 200°C, can be used in harsher environments. The whole unit adopts integrated design, which is lighter and more portable, and is an indispensable testing tool for the automotive aftermarket.

### Copyright Declaration

This specification applies to ME+ 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. ME+ Series Borescope For the manual amendment, we have no responsibility and obligation to inform any company or individual.

### 3.Operations

3.1 Take out the instrument: loosen the lock of the instrument outer box, take out the instrument host at once. 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.



### 1.Users Instruction

#### 1.1 Uses and scope of application

This product has the characteristics of real-time image display, suitable for automotive detection, repair and maintenance and other related fields, can observe the auto parts in real time without disassembling, and can observe other confined, curve, dark and space which human eyes couldn't see directly.

#### 1.2 Repair and refit

This product has no spare parts for the user to maintain, do not try to disassemble, refit and repair. So if the damage and loss to the users caused by that, Shenzhen Coantec Automation Technology Co., Ltd. will not bear any responsibility. The maintenance service of this product is only provided by Shenzhen Coantec Automation Technology Co., Ltd. and authorized dealers.

#### 1.3 Safety precautions

- 1) Prohibit use this instrument to observe human body or animal body;
- 2) Prohibit work under charged condition in order to avoid electric shock;
- 3) Do not contact the end of the lens directly in the process of use, especially pay attention to the use of endoscope in the high temperature environment, at this time the touch end may cause burns
- 4) Do not look closely at the strong light source emitted from the endoscope lens at the end, avoiding the influence of strong light on eyesight;
- 5) Do not force excessive bending, stretching, twisting and rolling the pipeline, otherwise it may cause damage to pipelines or equipment;
- 6) Long term use of this product will cause the lens to stain, resulting in blurred picture and affecting data collection. Please wipe the lens with alcohol before use;
- 7) Keep the insertion tube away from any liquid other than water, brine, oil and light oil;
- 8) When the instrument is used up, 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, stop the observation immediately. After adjusting the joystick to the middle position, carefully remove the insertion tube from the device under test and shut it down. Please contact the manufacturer or dealer in time.

### 4.Working modes

ME+ system mainly has 3 working modes, they are: "real time detection mode", "playback mode", and "system settings mode". When turning on, it enters to the "real time detection mode". Details of the various modes and the key functions, please refer to the "Figure 1. Button function list".

(Key function details list)

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

**Real-time detection mode:**

Press and hold the power button for 3 seconds, and the device will enter the real-time detection mode by default. Under this mode, the user can observe the image detected by the camera through the host screen; control the probe movement and speed by joystick.

1.Press button to adjust the brightness of LED lights, 7-level adjustable, the icon in the upper right corner of the screen shows the current brightness.

2.Press the button on the back of the main unit to take a photo. The icon is displayed by default in the upper left corner of the screen, indicating that the camera is currently in the camera mode. The icon indicates that the recording mode is currently in progress. The button on the main unit panel can switch between the photo/ video recording mode.

**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:(FIG1)

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.

2.The watermark information function could be selected to turn off/on.

3.Image format could be stored in JPEG / BMP.

4.Time and date setting.

5.Language: Simplified Chinese, Traditional Chinese, English, Japanese, Korean, French, German, Portuguese, Spanish, Russian, available in ten languages.

6.Format the memory card, please use it with caution

7.Restoring the default settings will restore all device settings to factory state

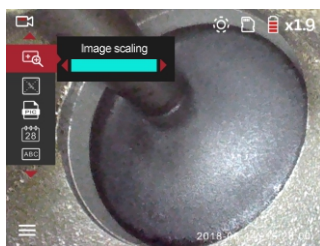
8.Select the current version information of the system and perform system upgrade settings.

**Playback mode :**

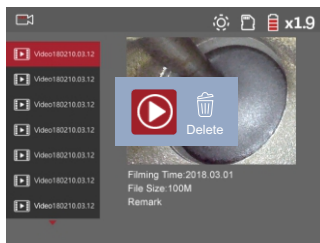
In the real-time detection mode, please press the return / preview button to enter the playback mode. Images and videos are stored separately and previewed in a list. The current file information will be displayed at the same time as the preview. After the file is selected, the icons and appear on the interface, and the current file can be viewed or deleted in full screen. (FIG2)

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.(FIG3)

2.First select the file you want to remove. When "✓" and "x" appear on the interface, "x" means cancel the deletion operation, file will be deleted directly when you select "✓".



( FIG1 ) System setting mode



( FIG2 ) Playback mode



( FIG3 ) Full-screen viewing mode

**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 offoperation.

**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 interface of the host.

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



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



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

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



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

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

**Standard Configuration:**

ME+ Videoscope X1,Instrument case X1,Card reader X18G TF card X1,Rechargeable lithium battery X1, Charger X1,Lanyard X1

**Optional:**

Side reflective mirror, Cooling system for insertion tube, Magnetic base, 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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