

ARORA

Arora Technologies (P) Limited

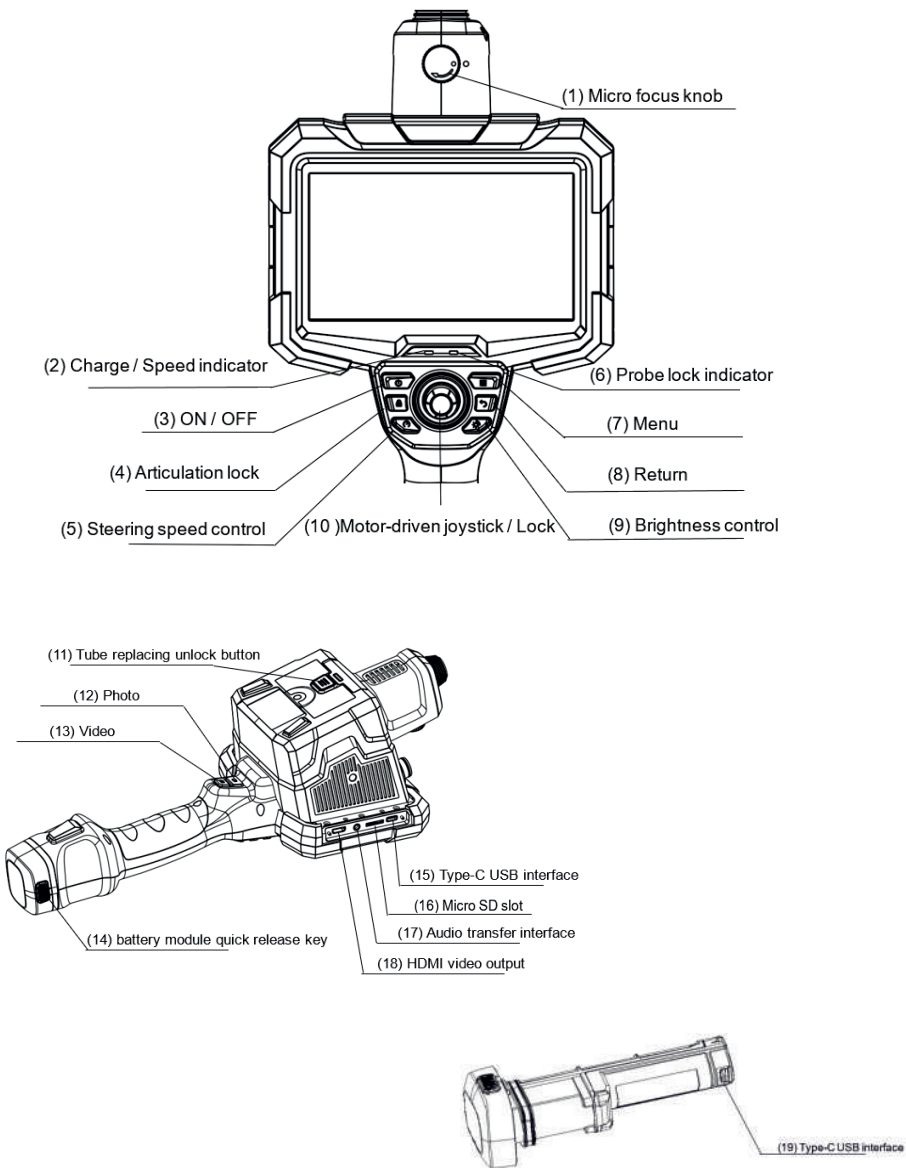


Operation Manual

ATVISION^{PRO} Multifunctional
Videoscope

Instruction before use

Button and Port



Button Function Description:

1. **Micro focus knob:** Twist to adjust the focal length and depth of field of the lens (optional).
2. **Charge / Speed indicator:** White light is on for fast mode; white light is off for slow mode.
3. **ON / OFF:** Long press this button for 3 seconds to boot; long press it for 3 seconds to shut down; short press to put the screen to sleep mode.
4. **Articulation lock:** Lock the bending angle of the joystick.
5. **Steering speed control:** Control the speed adjustment of the joystick for the probe articulation, with two switching modes: Fast and slow.
6. **Probe lock indicator:** A) **Lamp on** for lock step trim mode
B) **Lamp off** for follow mode
C) Default is follow mode.
7. **Menu:** Menu hide / show switch.
8. **Return:** Return to previous level in various states; live preview state for photo or video playback.
9. **Brightness control:** Probe brightness is cyclically adjustable from 0 to 5 levels. When UV and white light are configured, long press this button to switch the fill light source.
10. **Motor-driven joystick:** Compatible probe steering adjustment and press to lock the steering fine adjustment; up, down, left, right to adjust the steering angle; short press to confirm the operation.
11. **Tube replacing unlock button:** For disassembly and unlocking during line replacement.
12. **Photo:** Short press for taking photo.
13. **Video:** Long press for taking video.
14. **Battery module quick release key:** For removal and replacement of battery modules.
15. **Type-C USB interface:** For future developer upgrades & data transfer. This port can also power host computer during online operation.
16. **Micro SD Card slot:** The maximum support for 128GB memory.
17. **Audio transfer interface:** Used for audio input of video recording operation and audio output of video playback.
18. **HDMI video output:** Connect the monitor with display by HDMI cable, the image on the monitor will be displayed synchronously on the display.
19. **Type-C USB interface:** For charging battery packs individually.

Warning

- Do not use the product to inspect equipment in action.
- 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.
- Do not look at the LED light source at the end of the lens avoiding the effect of strong light on the visual acuity.
- Keep the insert tube away from any liquid, except water, salty water or oil.
- Avoid strong bending, folding and stretching of the tube to avoid damage to the equipment.
- After Usage, please clean the front section of the instrument in time, to prevent corrosion.

Brief Introduction

ATVISION^{PRO} Series of multifunctional videoscope offers impeccable video quality for inaccessible areas in tubes, pipes, bores, engines, castings, etc. It has a flexible probe with high-definition 360° articulating camera at tip with ceramic based light source for necessary illumination.

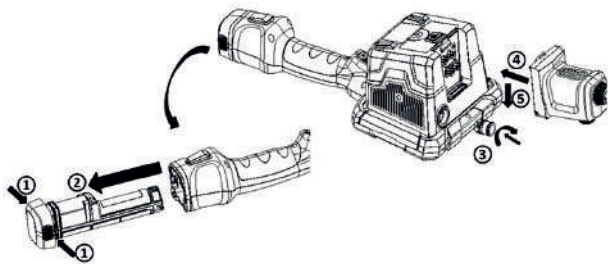
ATVISION^{PRO} ensures detection of surface discontinuities like cracks, deposits, corrosion, wear & tear, etc. It plays vital role in detection of inner surface discontinuities and monitoring the assets.

Parameters

Probe Diameter (mm)	Φ8/ Φ6/Φ4.2/ Φ3.8/ Φ2.8/ Φ2.2/ Φ1.8/ Φ1.0
Camera Pixels	Depends on Camera diameter (Please refer brochure)
DOF	Depends on Camera diameter (Please refer brochure)
FOV	120° (90° for Φ3.8/Φ4.2 camera)
Viewing Direction	0° front view/ 90° side view
Illuminance	White light ≥50000Lx+, UV>8000uw/cm (10mm distance)
Tube Material	tungsten-braided
Tube Length	Depends on Camera diameter (Please refer brochure)
Protection Device	Buffer protection device between the probe and the handle
Articulation	360° all way
Bending Angle	Max 190°
Display	5.7-inch, full-colour, full-viewing angle IPS LCD touchscreen display
Display Resolution	1920*1080
Image / Video Format	JPG, PNG (option) / MP4

Image Resolution	1920*1080/ 1280*720/ 640*480/ 400*400
Video Resolution	1920*1080/ 1280*720/ 640*480/ 400*400
Zoom Function	Image 8X
Outer Case Material	Anti-fall engineering alloy material
Memory	External 16GB Micro SD Card (Expandable upto 128GB)
Data Port	HDMI video output port, Micro SD Card, Type-C port
Working Time	≥ 4 hours
Battery Capacity	(11.1V, 3200mAh) *2
Power Consumption	7W
Weight	≈ 1.6 kg (battery included)
Compatibility	The videoscope is compatible with variety of functional accessories
Store Temperature	-23°C~63°C
Relative Humidity	Max: 92%, non-condensing
Host Working Temperature	-15°C~50°C, when 0°C below, the display needs preheating
Camera Working Temperature	-25°C~80°C, when 0°C below, please reduce probe articulation

Product Assembly Diagrams



Operation Step

Take Out The Instrument

Open the product case, first take out camera and then tube slowly, kindly pay attention to avoid bumping the probe and then take out the handle parts. Ensure the probe does not fall or get damaged during process.

Boot Preparation

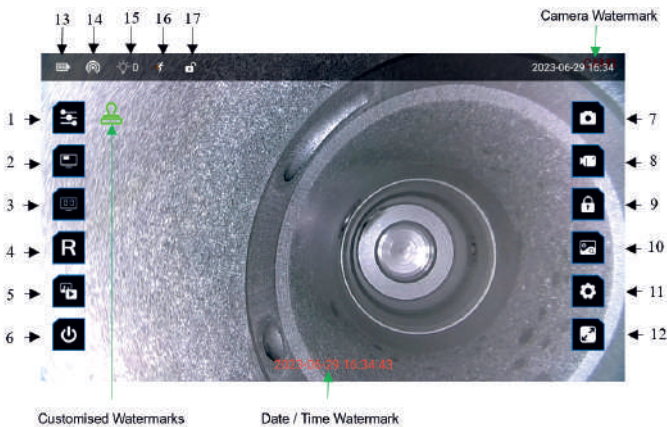
Visually check whether the appearance of the videoscope is intact, connect the handle to the host, straighten the insertion tube, and adjust the direction of the probe to 0°.

Operation

Before using the device for the first time, the system has identified the camera resolution as standard setting. If the tube is replaced the resolution must be configured: select the maximum resolution, and then click the default value to confirm. After setting, you can use the device to use.



It supports for 5 levels of brightness adjustment. Press the light control button to suitable brightness. Slowly insert the tube to the inspected object. The operation interface is as follows



Below explains the functions of the floating window ICONS from top to bottom & from left to right:

1. **Camera settings:** Set image parameters, proportions, special effects, resolution, etc.
2. **Picture-in-picture:** Switch small window display function.
3. **Dual camera preview:** Switch dual camera split screen display (front and side view use only).
4. **Image rotation:** The preview image is rotated 90° clockwise each time in the interface.
5. **Photo/video preview:** View photos or videos, and access to system files.
6. **Power off button:** Quick power off with one button.
7. **Snapshot:** Take pictures / screenshot.
8. **Video recording:** Record video.
9. **Image freezing:** Freeze the image to edit in the preview interface.
10. **Image call:** Select photos that need to be static and displayed with the current preview.

11. **Settings:** Settings accordingly, such as storage path settings, image call, language settings, date / time settings, watermark settings, etc.
12. **Full screen:** Switch full screen display.
13. **Power:** Real-time display of power status.
14. **WiFi:** Displays WiFi connection status.
15. **Brightness:** Support 0~5 level brightness cycle adjustment.
16. **Steering speed:** Fast and slow mode, running posture represents fast mode, and walking posture is slow mode.
17. **Steering angle lock switch:** When the lock is closed, the current probe angle is locked, but the electric joystick can also be used to perform step fine adjustment. When loosening the electric joystick, it will not return automatically. When the lock is opened, the probe angle can be freely adjusted and will not be locked, that is the angle of the probe will automatically return after the joystick is released.

Probe Articulation Control

Slowly manoeuvre the joystick to bend according to the actual internal environment of the equipment to be inspected, and stop the bending manoeuvre immediately if it encounters large resistance during the manoeuvre. After zeroing the probe, slowly move the position of the insertion tube, and then try to manipulate the bending of the probe for inspection, otherwise the probe should be straightened and removed directly.

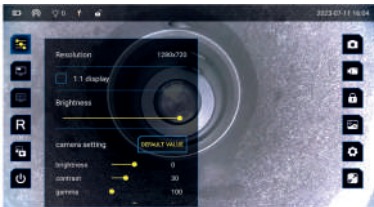
After Use

Make sure the endoscope probe is zeroed and switched off, then slowly remove the insertion tube. Put the device into the instrument case, slowly coil the insertion tube into the instrument case until it is completely inside the instrument case cable slot, and finally put the instrument case in place.

Function Operational Specification

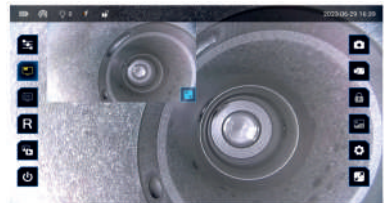
Camera Setting

Click ICON 1 "Camera Settings" to set various parameters of the camera. You can view resolution, select the image scale & turn on the negative effects.



Picture-in-picture

Click ICON 2 "Picture in picture", and the current live preview static picture will appear in the upper left corner. You can click this static image to switch with the real-time image. You can also select historical pictures for static comparison. You need to "call pictures", see 10. After selecting pictures, you can use the function "picture-in-picture".



Dual Camera Preview (Only for dual lens models)

Click ICON 3 "Dual Camera Preview". Dual cameras can be displayed on the same screen.

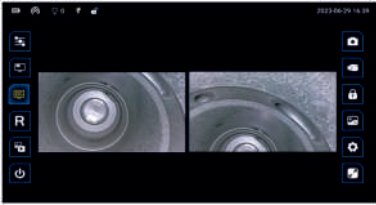


Image Rotation

Click ICON 4 "Image Rotation". Rotate clockwise 90° each time & with mirror image display function.

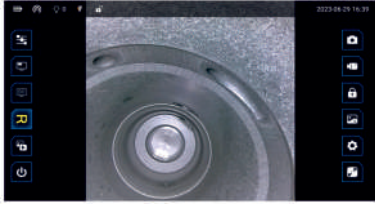


Photo \ Video preview

In the preview interface, click ICON 5 "Photo \ Video Preview" to jump to the file preview. You can switch files left & right & delete files. You can also do the following:

- ① Photos can be doodled, rotated and zoomed with one click.
- ② Videos can be Played and paused.
- ③ Click the folder icon to enter the system file interface.
- ④ Click on the ruler icon to take a comparative measurement of the area to be measured.
- ⑤ Click the export icon on the far right to export the current file to an external storage TF card with one click.



Comparative Measurement

You can measure the relative unknown parameters according to the known parameter, as shown below:

- ① Place the benchmark length according to the equipment prompt (select the distance between two known points)



- ② After selecting the corresponding benchmark point, click the right to confirm key for the length setting



- ③ Select points that need to be measured, you can measure the unknown length based on the known length.



Snapshot

Short press ICON 7 "Snapshot" to save "date \ time watermark", "Distance watermark", "Camera watermark", "Custom watermark" and "Custom file name prefix".

The saved file is named in the form as follows:

XXXX-202002151453-0001.PNG/JPG
Prefix- YMD- HMS

Video Record

Short press ICON 8 "Video" to record video, and second short press to exit. During recording, you can also short press to take photos. You can save "Date \ Time watermark", "Camera watermark", "Distance watermark", "Custom watermark" and "Custom file name prefix".
The saved file is named in the form as follows:

XXXX-202002151453-0001.MP4
Prefix- YMD- HMS

Image Call

Click ICON 10 "Image Call" to select the image to be displayed in "Picture-in-picture" mode, see 2.



File Storage Path

Click "file storage path" to enter the storage path settings and enter the file management interface

Select the location to be set as the default storage path, and click on the HOME flag in the upper right corner to "Set as Storage Path". Pop up a dialog box and confirm if you want to change the default storage path.



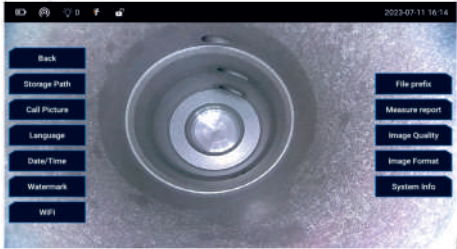
Image Freezing

Click ICON 9 "Freeze", the image is frozen, and can be doodled and saved.



Settings

Click ICON 11 "Setting" to pop up the setting menu.



Storage Path Settings: Set the storage path for photos and videos.

Image Call: Set the image to be called in picture-in-picture.

Language Settings: Set system language, there are 8 languages optional.

Date \ Time Setting: Set system date and time.

Watermark Settings: Set the "date \ time watermark", "Camera watermark", "Ruler watermark" and "Custom watermark" switch on the preview screen, and draw a stamp style.

Wireless Transmission: After enabling WiFi, the system can quickly update. After setting up the WiFi hotspot and installing the corresponding APK, connecting to this hotspot can achieve wireless WiFi on the same screen.

File Name Prefix: Custom file name prefix.

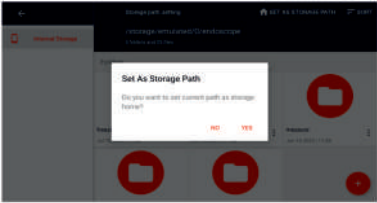
Test Report: Select images and automatically generate reports in DOC format.

Image Quality: Set the resolution of the photo file.

Image Format: Set the photo saving format.

System Information: View the system version.

Note: After setting the memory card as the default storage path, unplug the memory card, the device automatically restores the in-body storage as the default storage path, unplug the memory card again, if you need to set the memory card as the default storage path, you need to set the storage path again. Tap the plus sign in the lower right corner to create a new folder and name it.



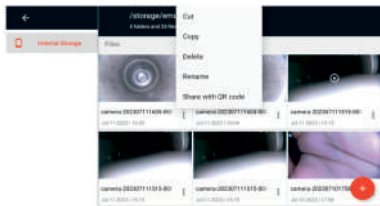
Full Screen

Click ICON 12 "Full Screen" in the lower right corner to hide the left and right side of the application floating bar, full-screen preview of the live image.



Document QR Code Sharing

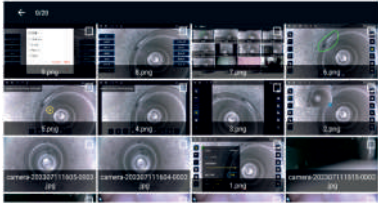
Extend the function in the lower right corner of the folder or file to share the QR code of the file, the sharing must be connected to WiFi, and the receiving end and the device must be in the same WLAN.



3. Search for a connection to the hotspot named in step 2 on the mobile terminal, then enter the downloaded APP will show the device, click to enter to view the device screen in real-time.

Test Report

Click "Test Report" to select the picture, and automatically generate a DOC format report.



After choosing, a small hook appears in the upper right corner, click the small hook, select the picture to complete, the following interface appears. You can doodle and edit each image, or you can put edit text under each image, and you can set the title of the file on the right. After completing the overall editor and the title settings, click on the lower right corner to create a test report.

XXXXXX Test Report

Company	XXXX	Model	XXXX
Location	XXXX	Aircraft Number	XXXX
Inspector	XXXX	Engine Number	XXXX

Selection situation:

	Situation description:		Situation description:
Part Name: XXXX		Part Name: XXXX	

CREATE REPORT



You can directly scan the displayed QR code to download the file, or enter the path prompted below the QR code to download.

Portable Hotspot Setting

1. Scan the QR code and download the APP software (for Android only).
2. Switch on the device, go to Temperature \ WiFi function under Settings app, turn on the Portable Hotspot, set the hotspot name as well as the password for this device.



Troubleshooting

Problem	Reason	Solution
Boot without reaction	Dead battery	Charging the machine
Auto shutdown	Battery power shortage	Charge & change Battery
Boot screen freezing	System boot failure or battery power shortage	Remove the battery to re install or charge, or forced shutdown by triggered the restart button
The image cannot be recorded or found	The capacity of SD card is not enough	Remove unwanted files
Image stuck and failed to turn off	System stuck	Forced shutdown by triggered the restart button

Warranty Information

Above mentioned Model/Sr. No. when used in accordance with the manufacturer's written instructions and under normal operating conditions is warranted to be free from defects in material and workmanship for a period of 12 Months from the date of sale. We, Arora Technologies (P) Limited undertakes repair free of labor and material charges any unit that proves to be defective within this warranty period.

All repair work will be done at our authorized service center, provided that the defective unit is returned to us in a properly packed manner with all transportation charges prepaid. Any part or equipment replacement to be done will be at sole discretion of Arora Technologies (P) Limited.

This warranty shall not apply to equipment subjected to misuse or abuse, improper installation, alteration, neglect or accident. Excluded from this warranty are expendable items such as wear and tear, which are used in or along with the equipment.

Thank you for your business!

WE trust, we have catered as per your expectations...



Arora Technologies (P) Limited

Plot No. D-183/8, MIDC, TTC Nerul, Navi Mumbai,

Maharashtra 400706, India

T: +91 22 6138 0600 | **E:** info@arorandt.com | **W:** www.arorandt.com

ATVISION[®] is Trademark of Arora Technologies (P) Limited.