

RVI-DT 7 /12 Series

User Manual



The RVI-DT series is a separated/desktop type industrial videoscope, easy-to-use and is available with a 7 inch or 12 inch TFT HD Display. Its waterproof, dustproof and high definition image sensor technology meet IP67 requirements and can take video and still images. Designed for consumable replacement Probes.

Available in Direct View or 90° (Side View).



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Product Instruction

RVI-DT series separated/desktop type industrial videoscope is independently researched and developed. This product adopts imported TFT HD 7-inch / 12-inch display, high definition camera, the image is high definition, making the detection image clearer, the color more vivid.

The user can replace the insertion tubes of different specifications autonomously, such as the alloy spring tube, alloy hard tube, and the tungsten wear-resistant braided tube, which can effectively save the cost.

The probe is oil resistant, corrosion resistant, waterproof meeting the requirements of IP67. Suitable for use in the harsh environment. The device is lightweight and portable, it is an indispensable inspection tool for non-destructive testing, more suitable for batch testing.

Copyright Declaration

This specification applies to RVI-DT Series products. Copyright and all rights reserved. Without agreement user is not allowed to copy or reproduce this copyright. The offender will be investigated with 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. This manual is only for user's reference and does not provide any form of guarantee. RVI-DT Series Borescope for the manual amendment, we have no responsibility and obligation to inform any company or individual.



1. Users Instruction

Use and application

1.1 This product is only applied in the real-time detection and analysis for production, Maintenance and Inspections.

1.2 Maintenance and modification

This product does not have spare parts which can be repaired 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

- 1) Prohibit use of this instrument to observe human body or animal body, our company does not bear any relevant risk;
- 2) Prohibit work under charged condition in order to avoid electric shock;
- 3) Do not touch 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 contact 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 of the Probe otherwise it may cause damage to Probe 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 Probe away from any liquid other than water, brine, oil and light oil;
- 8) When finished with the equipment, please clean the front end of the insertion tube in time to prevent corrosion.
- 9) Move the joystick slowly during the operation. If the equipment is not functioning properly stop the observation immediately and adjust the joystick to the middle position. Carefully remove the Probe from the inspected device and shut down the videoscope. Contact the manufacturer or Supplier.

2. Industrial Videoscope Product Instruction

Parameter Configuration

System

Display Screen Size	7-Inch	12-Inch	
Display Resolution	800 x 400	1024 x 768	
Probe Diameter	2.0mm	2.8mm /3.8mm	4.3mm /5.5mm/6mm/8mm(±0.1mm)
Camera Pixel	160,000 pixels	300,000 pixels	1000,000 pixels
Depth of Field	2-50mm/3-30mm/5-50mm/8-80mm		
Field of View (Direct View)	120°/ 85°		
Illumination Type	Front LED light/ Rear-mounted fiber light		
Illuminance	1,600LX/ 16,000LX/ 20,000LX/60,000LX		
Probe Unidirectional Bending Angle Articulation	No steering / 120°/ 150°		
Probe Orientation	None articulation/ Two-way/ Four-way/ 360° all-way articulation		
View Direction	Direct / Side		
Tube Type	Tungsten wear-resistant braided tube/ alloy hard tube/ alloy spring tube		
Compatibility	Replaceable design for consumable Insertion Tube		
Protection Device	Buffer protection device for connecting main host and wear-resistant pipe		
Memory	Standard 8G capacity TF card, support 32G at maximum		
Brightness Level	Manual 7-level adjustment		
Image Rotation Angle	Rotate clockwise 90°/ 180°/ 270°		
Digital Zoom	Support real-time 4 x zoom		
Language	English, French, German, Portuguese, Spanish, Chinese, Japanese, Korean, and Russian (9 languages optional)		
Water Proof	Probe IP67, host IP55		
Display Angle	Adjustable		

Host

7- Inch host dimension	225mm(L) x 180mm(W) x 82mm(H)
12- Inch host dimension	300mm(L) x 345mm(W) x 125mm(H)
Out carton dimension	510mm(L) x 400mm(W) x 190mm(H)
Host color	Black
7- Inch host weight	1.35KG
12-Inch host weight	2.65KG

Power Supply Parameters

Power Supply	Rechargeable lithium battery, real-time online charging
Working Voltage	DC4.2V
Working Time	≥ 3H

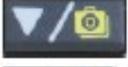
Operation Environment

Host System Working Temperature	-10°C / - 50°C
Camera Working Temperature	-20°C / - 60°C
Working Constant Humidity and Heat	Temperature 40°C Humidity 93%

Configuration

Standard Configuration	Host x1, Battery x 1, Instrument Case x 1, Charger x 1, 8G SD Card x 1, Card Reader x 1, User Manual x 1, Warranty Card x 1, Certificate x 1
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[Key function details list]

Button Shape	Button Name	Real-Time Inspection	Playback	Video Play	System Setting	Time Setting
	Power switch/ Playback/ Preview button	Enter into real-time detection/Playback & preview mode			Return to the previous menu	
	Move up/ Brightness Adjustment	LED light brightness adjustment			Previous option	
	Move down/ Photo video swift	Photo video swift			Next option	
	Menu/Confirm/ Picture freeze	Enter menu	Confirm	Tentative	Confirm	Confirm & proceed to the next setting
	Photo/ Video button	Photo/video			—	
	Joystick	Control the direction of the probe movement (Hard videoscope & some non-steering probes without a joystick)				

3. Operations

3.1 Take the instrument out of the case: Hold the probe in the process to avoid any damage.

3.2 Ready to start: Check that the equipment is in good condition, confirm that the TF card is loaded, press and hold the power button to turn it on.

3.3 Detection operation: Insert the Probe into the inspection work piece, and control the direction of the front end of probe 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 best effect.

3.5 Photo recording: Press the photo/video button to record video or take still images.

3.6 Insertion tube recovery: Operate the joystick to the middle position and verify that the Probe is relatively flat and straight, then slowly pull it out.

3.7 Storage of the instrument: Turn off the power switch, put the videoscope into the case close the top cover, lock the case.

4. Working Modes

RVI-DT series industrial videoscope system mainly has 3 working modes, which are real-time detection mode, playback mode, and system setup mode. Please refer to Figure 1 button function list for details of button functions under different modes and sub modes.



• Real-time detection mode

Press and hold the power button  for 3 seconds to turn on the host, display the boot interface, enter the real-time detection mode by default. In this mode, the user can observe the image detected by the camera through the host display.

The joystick can control the direction and speed of the camera, lock the current position of the camera by stopping the joystick.

1. LED brightness adjustment button  can adjust the brightness of the LED light in 7-level. The  icon in the upper right corner of the screen shows the current brightness level. Brightness adjustment can only be performed in real-time detection mode

2. The icon  on the top left corner of the screen displayed, indicating that the current is in photo mode. Press the side button  of the operation handle to take photos.

The button  on the top allows you to switch between the photo/video mode. Icon  indicates it is the recording mode.

Press the button  once to start recording, and the screen displays the recording length of time. Press again to end the recording and save it automatically.

3. In real-time detection mode, press and hold the Menu/Enter Screen freeze key  for 3 seconds, can freeze the current screen.

• System Setting Mode

Press the setup menu button in the real-time detection mode to enter the system setup mode. The mode can be set for the following system parameters: (Figure 1)

1. Image zoom: To enlarge image press the up button and to reduce image pressed the down button. The number in the upper right corner of the screen indicates the current zoom factor. For example, the icon indicates  that the zoom is 1.9 times. Up to 4 times larger.

2. Image display: You can choose the color/white and black/negative image display mode.

3. Coordinate reference line: can be selected to be on/off.

4. Time watermark information: can be selected to be on/off.

5. Image format : selectable JPEG/BMP.

6. Image rotation: can select to rotate the real-time detection image clockwise by 0°, 90°, 180°, 270°.

7. Time and Date: can set the system time and date.

8. Language: English, French, German, Portuguese, Spanish, Chinese, Japanese, Korean and Russian, total 9 languages optional.

9. Format memory card: please use it with caution before you format the memory card

10. Restore Default: restores the device to the factory default settings.

11. Version information: select the current version of the system and make system upgrade settings.

• Playback Preview Mode

Press the button  in the real-time detection mode, to enter the playback preview 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.

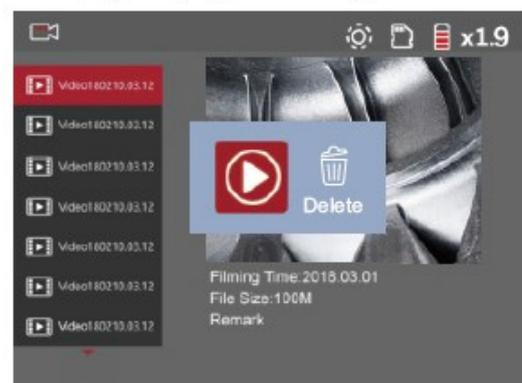
After selecting the file, the icon  and icon  appear on the interface, and the current file can be viewed and deleted in full screen (Figure 2).

1. In the full screen view model, at the bottom of the screen there are "+, -, left, right, up, down, and return "7 icons, which can zoom in and out, respectively to move the image to the left, right, up, and down, and return to the previous menu. The left, right, up, and down buttons are only available under the enlarged image and are used to view the image. (Figure 3)

2. When selecting a delete operation for a file, "√" and "×" appear on the interface. "×" means to cancel the deletion, "√" means the file will be deleted directly.



(Figure 1) System Settings mode



(Figure 2) Playback preview mode



(Figure 3) full screen view mode

5. Read the File

Remove the TF card from the host card slot, insert the card reader, and directly read the data in the card through the computer. The file is stored in the “My Computer/Removable Disk/DCIM” path. Note: Please do not pull out the TF card when reading data, otherwise abnormal errors may occur.

6. Shutdown

After the operation is finished, press and hold the power button to shutdown, the shutdown screen will be displayed. The device needs to save the system parameters and files, it needs to wait for a while, then the device will shut down after the save.

7. Remove the Battery

After the power is turned off, push the slide switch on both sides of the battery cover on the back of the host to remove the back cover and the battery case. The user can replace the battery case as needed. Note: The battery case is a one-piece design. Do not disassemble it to avoid damage.

8. Charging

Use the configured charging cable to power the device through the charging port on the right side of the host. The current battery level is displayed in the upper right corner of the screen. When the battery is low, please charge.

9. Replacement for the Insertion Tube

Step 1: Take out the tube



Method: Push out the locking ring at the connection of the tube plug, then pull out the tube from the host. Directly separate it from the host.

Step 2: Installation



Method: Align the red dot on the tube with the red mark on the host, gently push the plug in. When you hear a “click”, the tube has been installed successfully.

10. Configuration

Host x1, Battery x1, Instrument Case x1, Charger x1, 8G SD Card x1, Card reader x1, User Manual x1, Warranty Card x1, Certificate x1

11. Instrument Storage Method

- Store the instrument in a clean environment and keep it at room temperature.
- DO NOT store the instrument in high temperature, high humidity, strong light, high dust, pollution or corrosive environment;
- When the product is not used for a long time, please take out the battery and check the function of the instrument regularly.

12. 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 reinstall and restart or charge
The image can't be recorded or found	The capacity of TF card is not enough	Replace TF card or delete useless files