



**Waygate
Technologies**

a Baker Hughes business

Mentor USB Probes Operating Manual



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1 Overview

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Should you have any questions concerning clarification of problems in connection with application, use, operation, specification of your Remote Visual Inspection equipment, please contact the following:

Technical Support Contact Information

Global Phone: 1-866-243-2638

Email: RemoteService@BakerHughes.com

Note: Contact information is subject to change. Please visit the Waygate Technologies website for the latest information.

2.2 mm and 3.0 Probe: 4-Way Articulation



1. Articulation Control - Used for 4-way articulation control.

2. Light Source Power - This button turns the light source on/off.

3. Illumination Button - This button is used to adjust the intensity of the LED light source.

4. Image Brightness - This button is used to adjust image brightness.

5. Probe Base - This base acts as the probe holder.

2 Safety Information

To ensure operators safety, be sure to read and understand this manual before using any of this equipment!

The borescope and its accessories are not explosion-proof, pressurized, or intrinsically-safe. Do not use in hazardous environments. This product was not rated for use in explosive atmospheres.

Accessories: The accessory listed in this manual is the only accessory that the manufacturer considers being suitable for use with this product.

Environmental

 Do **NOT** allow the conductive insertion tube, system or its working tools to come in direct contact with any voltage or current source. Prevent all contact with live electrical conductors or terminals. Damage to the equipment and/or electrical shock to the operator may result.

 **USE PROPERLY.** Using any piece of this equipment in a manner not specified by the manufacturer may impair the product's ability to protect the user from harm.

3 Getting Started

Unpacking the System

Caution: Small diameter (sub $<4.0\text{mm}$) probes need to be handled carefully to avoid accidental damage.

The probe's insertion tube is stored inside the case's foam. To remove, lift the probe's handset and slowly withdraw the insertion tube from the storage tube, inside the case foam.



Packing the Equipment

Caution: Be sure the insertion tube is not articulated and straight without any loops or twists prior to feeding it into the "Insertion Tube Storage" tube.

Connecting the Probe

The probe connects to the Waygate VideoProbe handset using the attached USB cable. The probe is also powered over USB. When plugged in to the instrument, video from the probe is automatically selected as the active video source. To resume video from a standard Mentor, simply unplug the probe.

Note: The probe can be plugged into the Waygate VideoProbe handset prior to start up or during operation. The probe operates with or without the standard Mentor iQ probe attached to the Mentor iQ handset.

Note: If standard Mentor probe's video does not resume automatically, simply unlatch then re-latch the standard Mentor probe.

Probe Adjustments

The probe's tip position can be adjusted using the manual controls on the probe. No power is required to adjust the tip's position.

Illumination for the probe is provided by an integrated LED light source. LED brightness level can be adjusted using the manual dial knob or buttons on the probe (see [Overview](#)). The LED light source is powered by the videoprobe via USB Type A.

When using the probe, standard Mentor operations are available as documented in the Mentor Operator Manual, including image save/recall, video record/playback, annotation, file management, InspectionWorks, and other features. Comparison measurement is available. 2.2 mm Images are saved at the native 400x400 resolution of the probe's imager. 3.0 mm images are saved at the native 1280 x 720 resolution of the probe's imager.

When recording, live-streaming, or saving video using either the USB probe or the standard Mentor probe, please allow the operation in progress to complete before changing probes. If using the StarTech external video adapter accessory on Mentor USB, note that the StarTech adapter is given priority while connected to the Mentor; to use the USB probe, first unplug the StarTech adapter.

Note: The USB probe can be used when connected to a Windows PC using the Microsoft camera app.

4 Specifications

Probe Diameter	2.2 mm: 4-way	3.0 mm
Interface	USB	USB
Still Image Resolution	MViQ Flame 400x400 MViQ Gray 400x400 MViQ+ 400x400	MViQ Flame 1280x800 MViQ Gray 640x480 MViQ+ 1280x800
Video Resolution	MViQ Flame 400x400 MViQ Gray 400x400 MViQ+ 400x400	MViQ Flame 1024x768 MViQ Gray 1024x768 MViQ+ 1024x768
Probe Braiding	High Density Tungsten Steel	High Density Tungsten Steel
Light Source	High powered LED with high transmission fiberoptics	High powered LED with high transmission fiberoptics
Articulation	4-way	4-way
Probe Length	1.0, 1.5, 2.0 meter	1.0, 1.5, 2.0 meter
Depth of Field	3-50mm	7-80mm
Field of View (FOV)	70 degrees	80 degrees
IP Rating	Designed to Meet IP67 (Head only)	Designed to Meet IP67 (Head only)
Power Source	USB Type A	USB Type A

5 Maintenance and Troubleshooting

Inspecting and Cleaning the System

Inspect and clean the system before and after each use. If using the system in a dirty environment, clean the components more frequently as needed.

If images are distorted or blurred within normal range, the most likely problem is a dirty camera window. For best image quality, clean the camera frequently.

If you discover conditions that require evaluation or repair, return the system to Waygate Technologies.



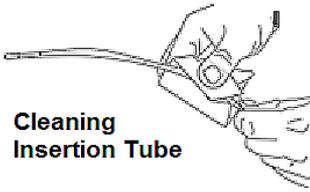
Caution: Do not immerse or soak the handset or the USB connector.

Inspecting and Cleaning the Camera Window

1 – Check for damage or contamination.



2 – Clean all external parts of the camera head. Use glass cleaner or 70% alcohol-to-water solution and a pointed cotton swab.



**Cleaning
Insertion Tube**

Inspecting and Cleaning a Probe

- 1** – Check the probe for damage or contamination. Look for excessive wear in the bending neck, loose strands of the braided weave, or separation of the bonding joints.
- 2** – Clean the probe's camera, including the lens on the camera head. Use glass cleaner or 70% alcohol-to-water solution and a pointed cotton swab.
- 3** – Clean the rest of the probe, including insertion tube. Use a soft cloth dampened with glass cleaner or 70% alcohol-to-water solution.

Inspecting and Cleaning the Handset

- 1** – Disconnect the power cord from the power source.
- 2** – Use a soft cloth dampened with glass cleaner or 70% alcohol-to-water solution to clean all parts of the handset, except the electrical connector. Compressed air may be used to dry or remove debris from electrical connectors.

6 Environmental Compliance



The equipment purchased has required the extraction and use of natural resources for its production. It may contain hazardous substances that could impact health and the environment.

In order to avoid the dissemination of those substances in the environment and to diminish the pressure on the natural resources, we encourage the use of appropriate take-back systems. Those systems will reuse or recycle most of the materials of end-life equipment in a sound way.

The cross-out wheeled bin symbol encourages the use of those systems.

If more information is needed on the collection, reuse, and recycling systems, please contact the appropriate local or regional waste administration.

The **CE** mark on this product indicates it has been tested to and conforms with the provisions noted within the 2014/30/EU Electromagnetic Compatibility Directive.

This probe is in conformance with the requirements on European Law on the Restrictions of Hazardous Substance (RoHS) directive.

Customer Support Centers

USA

Waygate Technologies, LP
721 Visions Drive
Skaneateles, NY 13152
Tel: +1 832-325-4368
E-mail: waygate.usa@bakerhughes.com

Europe

Baker Hughes Digital Solutions GmbH
Robert Bosch Str. 3
50354 Huerth
Germany
Tel: +49 2233 601 111 Ext. 1
E-mail: waygate.service.rvi@bakerhughes.com

Asia/Pacific

Baker Hughes Solutions Pte. Ltd.
10 Lok Yang Way
Singapore 628631
Tel: +65 62135500
E-mail: Asia.Servicervi@bakerhughes.com

China

Baker Hughes Sensing & Inspection Co., Ltd.
No. 8 Xi hu Road, Wu jin high-tech zone
Changzhou, Jiang Su 213164
China
Tel: + 86 400 818 1099
E-mail: China_inhouse_service@bakerhughes.com

Japan

Baker Hughes Japan Co., Ltd.
4-16-13 Tsukishima
Tel: +81 3 6864-1737
E-mail: service.itsv_jp@bakerhughes.com

UAE

Baker Hughes EHO LTD
Waygate Technologies
Mussafah Industrial Area,
Sector : MW-4, Plot: 13A1-A, Str 16th,
Abu Dhabi - United Arab Emirates
PO Box 47513
Tel: +971 24079331
E-mail: rvi.adservice@bakerhughes.com

Brazil

Bently do Brasil LTda
Rod. Jorn. Francisco Aguirre (SP 101-Km 3,8)
Campinas - SP - Brasil
CEP 13064-654
Tel: +55 19 2104 6983
E-mail: mcs.services@bakerhughes.com

India

GE Oil & Gas India Pvt. Ltd,
Building No 430 A, Plot No 11 & 25
Badhalwadi, MAWAL, Pune,
Maharashtra, 410507
Tel: +91 (0)2114662277
E-mail: India.Service@bakerhughes.com

waygate-tech.com



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