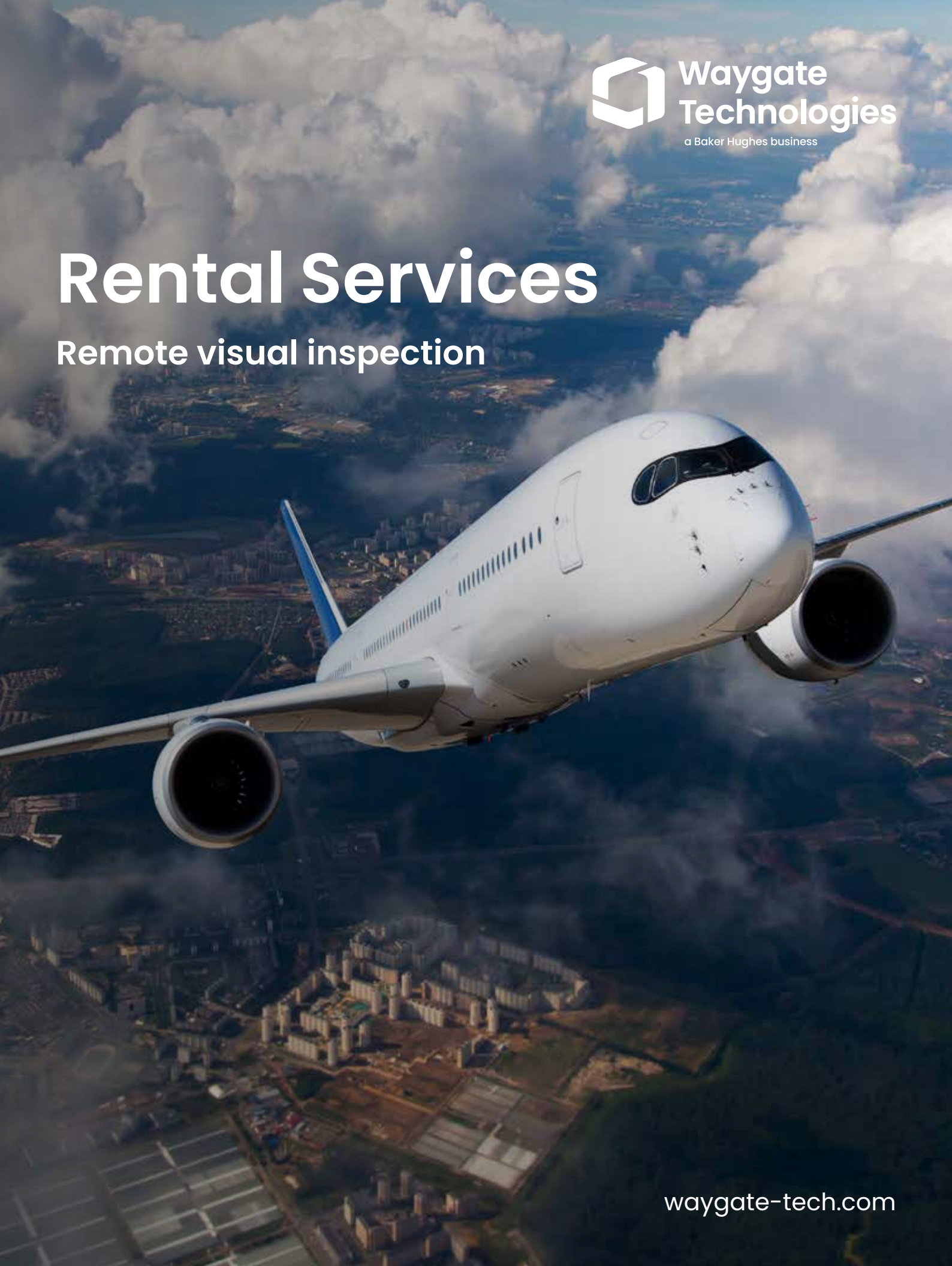

Waygate Technologies
a Baker Hughes business
Rental Services
Remote visual inspection
waygate-tech.com

Pushing the boundaries of digital inspection.

Remote Visual Inspection (RVI) is more crucial than ever to reduce the risk of serious equipment failures and improve uptime. The more you know about your assets, the better your chances of detecting potential issues before they impact productivity.

As a longtime pioneer within the RVI industry, Waygate Technologies provides solutions with superior accuracy and the highest Probability of Detection (POD) to help you solve your greatest inspection challenges—no matter the application. We provide top-notch technologies and solutions to help you make the most of your inspections. With our Rental Services Program you will have greater access to advanced RVI equipment, and expert support to back you up.

Aviation | Power | Processing | Automotive | Wind | Petrochemical

The equipment you need, when you need it.

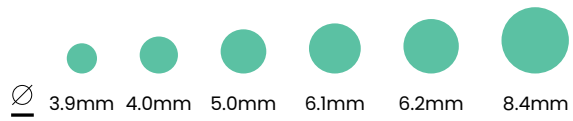
With a comprehensive Rental Services Program, we offer tailor-made RVI solutions right off the shelf. Waygate Technologies Rental Services Program is designed to provide the equipment you need, when you need it, and for as long as you need it.

- Same-day or next-day delivery
- No investment or depreciation
- No maintenance costs
- Special rates for long-term rentals
- Rental Services available 24/7
- Our rental coordinators have real world expertise and knowledge of your applications
- Product usage tips
- Reduced rental rates during the repair period of your video borescope with a valid RMA number
- Reduced rental rates for weekly and monthly rentals

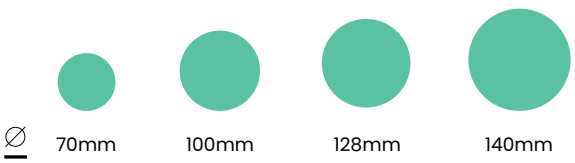
Try before you buy.

Rental Services gives you the unique opportunity to test a range of video probes before making a purchase. You can see how they work, and determine what works best for you. Plus, if you decide to buy a device you rented, you can receive a percentage of your rental fee credited toward your purchase.

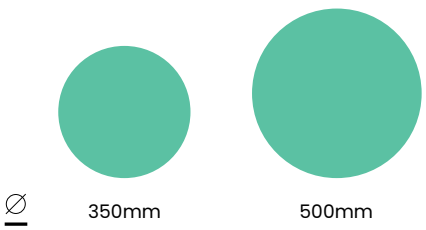
Video Borescopes XL Flex+, Mentor Flex, and MViQ



Pan Tilt Zoom Cameras Ca-Zoom PTZ and PTZ-HD30



Robotics BIKE and FAST RVI



XL FLex and XL Flex+ VideoProbe

Combining portability, durability, and quality

The XL Flex and XL Flex+ VideoProbes provide unmatched image quality and powerful light output to boost probability of detection (POD) and speed up inspections. Now featuring 16GB of memory and an upgraded 5" LCD screen on the XL Flex+.

Get accurate results, fast.

- Complete, efficient and precise inspections with unmatched image quality.

Believe it when you see it.

- Reduce eyestrain with powerful light output and a 3x brighter display in the XL Flex+.

Evaluate defects in depth.

- Stereo measurement provides accurate analysis as you work.

Stay flexible.

- At just 4.3 lbs., the device is lightweight and portable, with a wheeled carry-on case for easy transport.

Learn quickly.

- The intuitive interface includes Menu Directed Inspection (MDI) 2.0, an application to guide users through inspections and organize results for simpler reporting.

Experience true peace of mind.

- Receive readily available assistance from Waygate Technologies experts, wherever you are.

Now with a 5" LCD screen for clear-cut inspections.

- The XL Flex+ display is 85% larger and 3x brighter, with crystal clear image quality unmatched in the industry. Paired with advanced optics and powerful light output, this means sharper images right on your device. When you can see clearly, you improve POD, speed up inspection, and deliver accurate results with confidence.

Feature	Technical Specifications
Operating Temperature - Tip	-25°C to 100°C (-13°F to 212°F). Reduced articulation below 0°C (32°F)
Operating Temperature - System	-20°C to 46°C (-4°F to 115°F) LCD requires warm-up period below 0°C (32°F)
Waterproof	Insertion tube and tip to 14.7 psi (1 bar, 10.2 m of H_2O, 33.5 ft of H_2O)
Pixel Count	4.0 mm (0.157 in) diameter probes: 290,000 pixels 6.1 mm (0.242 in) and 8.4 mm (0.331 in) diameter probes: 440,000 pixels
Tip Articulation - Insertion Tube Length: 2 m - 4.5 m	Up/down – 160° min, Left/right – 160° min
Tip Articulation - Insertion Tube Length: 6 m	Up/down – 140° min, Left/right – 140° min
Tip Articulation - Insertion Tube Length: 10 m	Up/down – 120° min, Left/right – 120° min

**Note: Typical articulation exceeds minimum specifications.*

Everest Mentor Flex

Streamlined to simplify the complex

With military grade durability the Everest Mentor Flex provides quicker inspections at a lower cost without compromising the accuracy of the results.

Visible confidence

- Delivers cutting-edge TrueSight™ image clarity on a 5.8" Wide XGA (WXGA) LCD display for more accurate assessments and increased probability of detection (POD)
- Combined with dark boost, color saturation, and distortion correction, you can expect high-quality, detailed images

Intuitive innovation

- Virtual keyboard for faster annotation
- Multi-point touchscreen allows pinch-to-zoom and swipe-and-pan-gesture functionality
- Menu directed inspection (MDI) software improves efficiency with auto-tagging and automatic report generation
- Upgraded articulation design with high-power steering motors to navigate inspections thoroughly, and accurately, at a fraction of the time and cost
- 3-hour battery run time

Maximized measurement

- **Stereo measurement** provides accurate analysis as you work
- **Comparison measurement** checks the approximate size of defects quickly

Rugged mobility

- At 5.5 pounds, the Everest Mentor Flex is lightweight and portable
- Constructed with ultra-durable, military-grade magnesium and polycarbonate housings
- Third party tested, drop tested on steel surface MIL-STD-810H

Feature	Technical Specifications
Operating Temperature - Tip	-25°C to 100°C (-13°F to 212°F). Reduced articulation below 0°C (32°F)
Operating Temperature - System	-25° to 46°C (-13°F to 115°F). LCD may require warm-up period below 0°C (32°F)
Waterproof	Insertion tube and tip to 14.7 psi (1 bar, 10.2 m of H_2O, 33.5 ft of H_2O)
Pixel Count	"SD 3.9, 4.0, 6.1, 6.2, 8.4 mm - 440k pixels HD 6.1, 8.4 mm - 1200k pixels"
Tip Articulation - Insertion Tube Length: 2 m - 4.5 m	Up/Down 160° min, Left/Right 160° min
Tip Articulation - Insertion Tube Length: 6 m - 10 m	Up/Down 140° min, Left/Right 140° min

**Note: Typical articulation exceeds minimum specifications.*

Mentor Visual iQ VideoProbe™

The first HD, 3D measurement-enabled video borescope

Mentor Visual iQ is portable, connected, and more precise than ever. This rugged and user-friendly video borescope sets the standard for measurement in a variety of industries and applications.

Accurate

- TrueSight Imaging™ for unbeatable clarity
- Blends high resolution image and precision optics with a powerful suite of proprietary image transformation functions
- Crystal clear live video and still images in high definition (HD)
- Unlocks the power of digital zoom on device with new 1.2 mega pixel image sensor

Reliable

- Advanced 3D capabilities for precise measurement from increased distances
- 3D Phase and Stereo Measurement with fully surfaced Point Cloud
- Real time cursor adjustment in the fully surfaced Point Cloud
- Comparative measurement

Efficient

- At 6.7 lbs, the Mentor Visual iQ is lightweight and portable
- Variety of probe lengths and diameters
- MDI image management and reporting
- QuickChange™ probes with optical tip adaptors
- InspectionWorks Connect

Intuitive

- Touch screen interface
- WiFi and Bluetooth connectivity
- 32 GB internal memory
- On-screen keyboard

Feature	Technical Specifications
Operating Temperature - Tip	-25°C to 100°C (-13°F to 212°F). Reduced articulation below 0°C (32°F)
Operating Temperature - System	-25° to 46°C (-13°F to 115°F). LCD may require warm-up period below 0°C (32°F)
Waterproof	Insertion tube and tip to 14.7 psi (1 bar, 10.2 m of H_2O, 33.5 ft of H_2O)
Pixel Count	SD 3.9, 4.0, 6.1, 6.2, 8.4 mm - 440k pixels HD 6.1, 8.4 mm - 1200k pixels
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Tip Articulation - Insertion Tube Length: 6 m - 10 m	Up/Down 140° min, Left/Right 140° min

**Note: Typical articulation exceeds minimum specifications.*

Pan Tilt Zoom Cameras

Compact, robust, and portable

Rugged and robust, our portfolio of PTZ cameras puts large diameter inspections in the palm of your hands. The ultra-portable Ca-Zoom series of cameras combines interchangeable camera heads, advanced software, integrated image capture, and full motion video recording in a compact unit that can be used both in the air or underwater with efficiency and ease. The PTZ-HD30 provides an integrated touchscreen workstation, high definition images, 30x optical zoom and powerful lighting to see every detail. All PTZ models provide remote viewing capabilities so that you can inspect for cleanliness, indications of defects, and many other features of asset integrity. The collection of digital images allows for historical comparisons to identify and track changes to tanks or vessel profiles.

Both Ca-Zoom and PTZ-HD30 are compatible with Waygate Technologies Robotics FAST-RVI inspection robot. PTZ-HD30 is also 3DLOC enabled so images can be geotagged to a digital twin.

Feature	Ca-Zoom	PTZ-HD30
Resolution	Standard definition	Full HD / 2.38 megapixels
Minimum diameter deployment	140mm (5.5″), 100mm (3.94″) and 76mm (3″)	128mm (5.04″)
Control unit weight	5.9 kg (12.9 lbs)	21 kg (46 lbs)
Operating temperature	-18°C to 50°C (0°F to 122°F), Short-term up to 70°C (158°F)	0°C to 60°C (32°F to 140°F)
Waterproof	To 45m or 4.5 bar	To 50m or 5.0 bar
Control unit	Camera control unit + handheld controller	ICS II control station

Push camera

Compact, robust, and portable

Push camera systems are one of the fastest and easiest ways to perform visual inspections. With a push camera, inspections of pipelines can be carried out in the shortest possible time, and unnecessary disassembly is no longer needed. Interchangeable camera heads can be used for different applications.

An opening as small as 29mm can be used to obtain large and wide views of components or pipelines. Comprehensive inspections can be achieved with just one push camera system.

For example, weld seams can be inspected 360 degrees with a pan-tilt camera head and examined for a wide variety of defects. It is possible to inspect pipes with different diameters and lengths (up to 70m) for debris, blockages, and asset condition.

Accessories:

- LCD-monitor 5,6”
- Video and pictures captured on SD memory card

Technical Specifications	
Cable length	50m and 70m
Diameter	29mm or 40mm
Display	Meter/footage counter display
Video out	Video input/BNC output
Articulation	Rotation and an/tilt display
Brake force	Arresting brake
Housing	Stainless steel reel
Control	Manual remote control

Remote Visual Inspection of confined spaces with distance to target > 3m / 10ft

FAST RVI HD

This robotic platform allows users to perform a full HD remote visual inspection while drastically reducing risk for the operator. The inspection camera is carried by a robot and deployed through a manway. The duration and quality of these inspections are greatly increased. Only one operator is required for deployment and performing the actual inspection. The operator navigates the robot to the area of interest and starts the inspection using the powerful HD pan-tilt-zoom camera. With the integrated 3D LOC system all pictures and videos taken by the operator are geo-tagged and saved with their exact coordinates in a digital twin database.

With this system human entry in confined spaces becomes obsolete. Users save the time consuming process of preparation, risk assessments or watchmen. This leads to tremendous cost savings for the asset owner and the inspection service provider.

The FAST RVI HD is deployed through an accessible entryway and the operator is controlling the system from a safe remote location. The advanced kinematics of the platform has several degrees of freedom. This allows the user to freely navigate inside tanks and vessels on curved or double curved surfaces. An overview camera and the 3D LOC system assist the operator in maneuvering the robot to the location of interest. Once the platform has arrived, the inspection camera is used to collect the required data per the inspection plan. Using the Full HD resolution and high zoom capabilities (up to 30x optical zoom) most data will be collected from the opposite wall, which allows a very clear view of the inspected features. At all times the operator stays out of the confined space area.

3D LOC - digital twin

The technology provides full 3D spatial awareness of the robot inside the inspected asset. This combined with 3D interactive robot control supports the user during the inspection. The 3D mission viewer is the software platform to replay the inspection and to review all inspection data (capture). Every single capture is geo-tagged in the 3D asset. Additional information such as recommendations (text), historic data (pictures), or procedures (files) can be attached to the captures and will be stored in a single database - the digital twin for your inspection.

ICS 2 - Integrated Control Station
Specs
Industrial rugged computer with 21.5" touchscreen (Full HD, 1200cd/sqm Ultra High Brightness, glove friendly) Intel i7-6600U
8GB RAM
128GB mSATA
2xUSB 2, 2xUSB 3.0, Ethernet, Encoder out, rugged joystick, 100 ... 230 VAC, Windows 10

PTZ HD30 - Inspection camera
Specs
Full HD / 2.38 Megapixels, 30x optical
12x digital, Infinite pan
220° tilt Watertight up to 50m
Diameter 128mm / 5.04"

Remote Ultrasonic and Visual close-up Inspection in confined spaces

BIKE

The BIKE platform is a magnetic wheeled robot capable of inspecting power plant facilities and multiple applications in the petrochemical industry, such as vessel or pipe inspections. The BIKE platform is the only magnetic inspection robot with the ability to overcome obstacles and maneuver in complex environments. The four-wheeled robot can pass 90 degree inner and outer corners. In industrial environments this means transitions from horizontal to vertical pipes and movement upside-down is also possible. Practical examples are interconnected pipes like T-joints or flanged connections. Furthermore, this technology enables the user to drive directly into confined spaces from an accessible manway.

For **Remote Visual Inspection (RVI)** the robot carries an HD pan-tilt-zoom inspection camera with powerful LED lights. Lasers can be used for remote measurements of findings. For close-up inspections and accurate depth measurements like pitting and corrosion, a borescope can be attached.

To perform **Ultrasonic Inspections (UT)** the BIKE carries a remote actuated twin crystal UT probe. This is used to measure the remaining wall thickness of an asset.

The BIKE is fully remote controlled using the ICS 2 - Integrated Control Station. 3D LOC provides full 3D spatial awareness of the robot inside the inspected asset. The position and all movements are shown and recorded in real time. Inspection results (RVI and UT) are stored with their exact coordinates within the 3D digital twin.

Internal Inspection

To safely deploy the BIKE into the asset the minimum opening should be 400mm / 15.7".

Full maneuverability is possible from 600mm / 22.6".

External Inspection

For external inspection of pipes the minimum pipe outer diameter for straight line driving is 400mm / 15.7".

Full maneuverability on pipe outside diameter from 600mm / 22.6".

RVI TZ1 HD - Inspection camera
Specs
Full HD 1920x1080, 10x optical zoom, infinite pan
Tilt range: +123° to -104°, 2x spot LEDs (390lm each)
2x Flood LEDs (187 lm each), total 1154lm, integrated parallel laser for sizing and measurements

UT - Ultrasonic Inspection
Specs
5 MHz / 10 MHz zero degree dual elements probe, 10mm diameter, LEMO 00 connector for thicknesses measurements of >3mm

Are you ready to improve your inspections?

Our Rental Services program is the best out there—providing you with access to the highest quality equipment with expert care. The process is seamless, with support in many different languages, including English, German, Chinese, Japanese, and Portuguese. Get in touch with our team to find the right RVI solution for you.

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