

VesselCam™

Across the oilfield and industrial sectors, large storage tanks or plenums are often utilized for the storage of various substances - such as hydrocarbons, chemicals, or other liquids and gases. These large confined spaces are often susceptible to corrosion or other internal damage over time. Ensuring the integrity of these spaces on a regular basis is vital, as any breach could have catastrophic consequences for worksite personnel, corporate reputation and/or the environment.

The inspection of such confined spaces can be extremely difficult, often leading to replacement of assets at pre-determined intervals rather than as required. This can have a significant cost impact due to premature replacement. The alternative is potentially even more costly - should there be a rupture due to erroneous asset lifetime estimates.

SOLUTION

Through the application of high definition video, combined with variable intensity auxiliary lighting, EV's VesselCam™ solution enables the visual inspection of the interior of confined spaces. The VesselCam™ comes equipped with two water jets, the first to clean the lens of the camera during deployment to ensure high-quality video is captured, and a second to enable efficient clearing of surfaces within the confined space. This helps identify and separate loose particles accumulated on the surface and pinpoints corrosion on the tank bed. The VesselCam™ also has an electromagnet located near the lens to allow either the removal of any loose metallic debris from the inspection surface or to retrieve the debris back to surface for further analysis.

By providing detailed visual information in combination with the recovery of metallic debris to surface, it is now possible to inspect previously "uninspectable" or high-risk spaces. This solution thereby minimizes risk to both personnel and the environment, provides vital information of the condition of the assets, and ensures that unnecessary costs are not incurred.

As part of the service, VesselCam™ operations are supported by an experienced EV Engineer. If requested, a customer representative is able to view the video in real-time with the EV Engineer. Deliverables will include the inspection videos, a detailed report with still images and all metallic samples retrieved to surface during the operation. EV's bespoke in-house engineering team also have the ability to adapt and develop the system to match specific project requirements.



APPLICATIONS

Applications include:

- Hydrocarbon plenum inspections
- Inspections of storage tanks or other confined spaces (chemicals, water, gases, etc)
- Valve, thread and seal inspections
- Evaluation of Flange connections
- Retrieval of metallic debris to surface for further analysis

TECHNICAL FEATURES

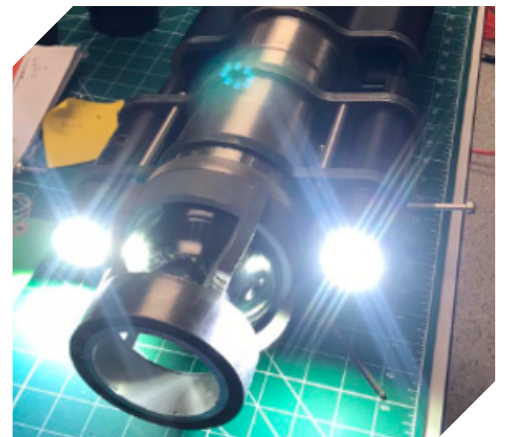
VesselCam™ solutions are supported by EV's Optis® technology. It includes twin cameras to allow for close range and longer distance inspections. The system is surface controlled, variable speed and fully rotatable which enables full 360° inspection. The high-frame rate colour footage is transmitted to surface via an umbilical. Variable LED lighting also allows enhanced imaging capability in low visibility spaces and or fluids. The EV Engineer always retains full control of the camera including 3-axis movement, auxiliary camera switching and lighting control.

The dual water jets are fed from a water source at surface and are operated selectively by the EV Engineer. The ability to clean the lens at any time is essential in fluid filled storage tanks where hydrocarbons or grease may have otherwise affected the quality of the video. The downward facing water jet can blast the interior surface of the tank to remove any debris and allow for the surface of the asset to be visually inspected. Any metallic debris can also be collected by the onboard electromagnet fully operated from surface.

The VesselCam™ system is deployed through a custom frame and hand-winch system. Thanks to EV's in-house engineering capability it is possible to design and build bespoke frames, if required, for particularly challenging deployments. At standard size, the maximum diameter of the system is 258mm, however, bespoke systems can be also be developed and manufactured by EV's internal design team.

All EV products are supported by ISO 9001 certified design and manufacturing processes and are constructed from high-strength, corrosion resistant materials throughout.

Typical Maximum Diameter	10.15 in	258.0 mm
Typical Length	28.03 in	712.0 mm
Maximum Depth	Variable	
Magnet Type	Electromagnet	
Video Output	High Definition Real-Time	
Compatible Cameras (Real-Time) †	Optis® DrillCam	



† See separate datasheet for camera specifications

Example Toolstring

