



What is PureRobotics™?

PureRobotics uses powerful modular robotic pipeline inspection systems that can be configured to inspect virtually any pipe application 12-inches (30.5 centimeters) and larger. Capable of performing multi-sensor inspections in dry pipe or while submerged, the PureRobotics pipeline inspection system has a range of up to 3 miles (5 kilometers) from a single access point.

How it Works

PureRobotics pipeline inspection systems are remotely-operated tracked vehicles tethered by a fiber optic cable. The inspection system consists of a modular, long-range, multi-sensor vehicle that is capable of providing a wide variety of high quality data, including:

- *High definition digital pan-tilt-zoom closed circuit television (CCTV)*
- *High speed profiling SONAR designed specifically for pipeline inspection*
- *Laser profiling with 3D reporting capabilities*
- *P-Wave® electromagnetic sensors for assessing the structural integrity of prestressed concrete cylinder pipe (PCCP)*
- *Additional sensors or technologies can be integrated based on customer requirements*



Why Use PureRobotics Pipeline Inspection System?

- *Capable of performing short and long-range inspections under various operating conditions*
- *Ideal for water and wastewater applications*
- *Applicable to a variety of pipeline environments*
- *No need for manned entry and no requirements to de-water*
- *Maximum speeds of nearly 40 feet/minute allow for advanced inspection in an efficient manner*
- *Capable of performing high definition CCTV and SONAR inspections using a tracked robotic crawler or a floatation system*

PureRobotics is capable of performing multi-sensor inspections in dry pipe or while submerged.

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PureRobotics Pipeline Inspection System Specifications

Specifications	Description
Pipeline Diameter	18" to 72"
Pipeline Preparations	Depressurized Out of service De-watered access points
Sediment, Silt, Debris	Pipeline should be free of large obstacles
Manned Entry	If required, only at equipment insertion locations
Access Diameter	14" x 16"
Access Spacing	Crawler <8,000ft; Floating <16,000ft
Elbows ¹	Total number of bends in a deployment should add to <360°
Reducers & Valves	Gate valves are generally passable; butterfly valves are not
Maximum Pressure Rating	44 psi (100ft depth)
Maximum Speed	40 feet/minute
Set-up Time ²	30-60 minutes
Daily Rate ³	1-2 miles
PTZ Camera	360° continuous pan, 300° tilt, 10x optical zoom, focus man/auto iris man/auto, built-in LED lighting
Video Format	1080i or 720p, delivered as (.mp4) file
Sonar Type	High-speed profiling sonar 2.25MHz, performs a 360 degree scan in 1.3 seconds, 400 points per scan
Sonar Range Resolution	1/250 of full scale range (e.g. 0.1" to 25")
Lighting	180W high power LED lighting

¹ The unit is capable of traversing horizontal 90-degree bends within the limitations specified above.

² PureRobotics requires lifting device to lower tool and additional on-site time for preparation and dismantling.

³ Rates represent averages for 8 hour shifts. Assumes entry port manhole is completely dewatered and access spacing is sufficient. Distance inspected cannot be guaranteed due to the nature of a robotic inspection. Tool velocity decreases as cable length increases due to the cable weight. Cleaning or dewatering pipe as well as sufficient access spacing helps maximize inspection distance. A detailed project review is required for every pipeline.

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