

## A COMPREHENSIVE REVIEW ON PIPE INSPECTION ROBOTS

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### ABSTRACT

*Pipe inspection is of great importance for assessing the integrity of the pipe in various pipeline industries. Pipe inspection eliminates human intervention from hazardous environments and accidents. There are multiple pipe inspection methods like X-ray, Magnetic acoustic testing, eddy current testing, and visual inspection, but pipe inspection using a robotic system is a promising one. A pipe inspection robot is usually fitted with a camera and other sensors that carry out a check. Due to geometrical changes of pipe-like joints, couplings, T sections, reducers, valves, while designing pipe inspection robots, various factors such as restricted manoeuvrability, complex designing, steering designing, adhesive forces during vertical motion have to be considered. This makes it necessary for proper designing and selection of mechanisms. Therefore, this paper provides a systematic review of various models that are available for pipe inspection. This paper will classify pipe inspection robots briefly into outer pipe inspection and inner pipe inspection robots.*

**KEYWORDS:** Pipe Assessment, Pipe Inspection Robot, In-Pipe Inspection, Outer Pipe Inspection, Camera

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