ICS 29.260
CCS L 66

NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB/T 46366-2025

General specification for self-driven in-line inspection robot

自驱式管道内检测机器人通用技术规范

Issued on: October 5, 2025 **Implemented on: October 5, 2025**

Issued by: State Administration for Market Regulation;
Standardization Administration of the PRC

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Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part

1.Structure and Drafting Rules of Standardization Documents". Drafting. Please note that some content in this document may involve patents. The issuing organization of this document assumes no responsibility for identifying patents. This document was proposed by the China Industrial Machinery Federation. This document is under the jurisdiction of the National Robotics Standardization Technical Committee (SAC/TC591). This document was drafted by: China Special Equipment Inspection and Research Institute and the Science and Technology Research Institute of China Oil & Gas Pipeline Network Corporation. Branch offices, Fujian Provincial Special Equipment Inspection and Research Institute, Beijing University of Posts and Telecommunications, China Machinery Productivity Promotion Center Co., Ltd., Shenyang Siasun Robot & Automation Co., Ltd. Automation Co., Ltd., Chongqing Special Equipment Inspection and Research Institute, Shanghai Special Equipment Supervision and Inspection Technology Research Institute, Nanjing Special Equipment... Safety Supervision and Inspection Institute, Shenzhen Artificial Intelligence and Robotics Research Institute, China Jiliang University, China Special Equipment Safety and Energy Conservation Promotion Association The association, Jiangsu Provincial Special Equipment Safety Supervision and Inspection Institute, Southeast University, Shaanxi Provincial Special Equipment Inspection and Testing Institute, and Pipeline Network Group (Xuzhou) Pipeline Inspection and Testing Co., Ltd., China University of Petroleum (Beijing), Harbin Engineering University, Peking University, China National Petroleum Corporation Southwest Oil and Gas Field Branch Safety, Environmental Protection and Technical Supervision Research Institute, Ordos Branch of Inner Mongolia Autonomous Region Special Equipment Inspection and Research Institute, Beijing Jingu Vision Technology Co., Ltd., Zhejiang Hengsheng Technology Co., Ltd., Qiteng Robotics Co., Ltd., Shenyang University of Technology, China Special Inspection and Testing Center (Hong Kong and China) Technology (Shenzhen) Co., Ltd. The main drafters of this document are. Chen Jinzhong, Li Rui, Kang Dugang, Lu Runkun, Zhao Shangxin, He Renyang, Song Aiguo, Yang Zhiwei, Chen Yongyang, and Wu Shanqiang. Zhang Yanheng, Zhang Ping, Zhang Feng, Zhao Fan, Lu Dong, Wang Binrui, Sun Liangyan, Liu Jialu, Chen Xiao, Mei Lin, Qin Hongde, Zeng Qinda, Jing Deqiang, Liu Juefei Ding Ning, Zheng Gengfeng, Fu Kuan, Lü Xumiao, Zhu Zhongben, Zheng Wenpei, Chen Gang, Wang Jifeng, Feng Yuegui, Qin Guoping, Huang Tianyun, Bai Fan, Bai Kun, Ma Yilai Zhu Dong, Zhang Qingbao, Shi Guannan, Qi Changchao, Xiao Yao, Geng Hao, Zeng Weiguo, Hu Sufeng.

General Technical Specifications for Self-Propelled Pipeline Inspection Robots

1 Scope

GB/T 46366-2025 is the Chinese national standard covering the robot that drives itself through a pipeline instead of being pushed by the product - the traction and the obstacle negotiation at bends and valves, the inspection sensors it carries, the power and endurance, and the recovery when it stops moving. It matters because unpiggable lines are exactly the ones nobody can inspect. First edition, already in force. Issued on 5 October 2025, it has been in force since 5 October 2025.

This document specifies the classification, model codes, technical requirements, and inspection procedures for self-propelled pipeline inspection robots (hereinafter referred to as "robots"). The rules, markings, instructions for use, packaging, transportation and storage, and the corresponding test methods are described. This document applies to robots used for internal inspection of long-distance pipelines, public pipelines, industrial pipelines, and municipal water supply and drainage pipelines.

2 Normative references

The contents of the following documents, through normative references within the text, constitute essential provisions of this document. Dated citations are not included. For references to documents, only the version corresponding to that date applies to this document; for undated references, the latest version (including all amendments) applies. This document.

GB/T 191 Pictorial Symbols for Packaging and Storage

GB/T 2423.1 Environmental testing of electrical and electronic products - Part

3 Terms and Definitions

The following terms and definitions apply to this document.

3.1 Self-driven in-line inspection robot A robot with mobility that can perform inspection tasks inside pipelines.