



X5-HMA4 Pipeline CCTV Inspection Robot

Advanced Pipeline Assessment with HD Video and Intelligent Control



Why Choose X5-HMA4?



The X5-HMA4 is a high-definition CCTV pipeline inspection robot system utilizing tablet-based wireless control. It performs real-time HD video transmission and recording without cable constraints, enabling efficient defect identification and instant report generation. The system consists of a crawler, camera, cable reel, and control unit, supporting various lens configurations for comprehensive pipeline assessment.

Performance

- **Wireless HD Transmission:** Real-time 1080p video streaming with 100m range
- **Precision Mobility:** Four-wheel drive with differential steering and 30m/min speed adjustment
- **Multi-Lens Compatibility:** Supports rotary, rotary-straight, and straight-view lenses
- **Instant Reporting:** Automated standard report generation post-inspection

Intelligence

- **Tablet Control Interface:** Intuitive touchscreen operation with real-time status monitoring
- **Defect Tagging:** On-screen annotation during inspection with GPS synchronization
- **Data Management:** Integrated video storage and image capture functionality
- **Adaptive Lighting:** Automatically adjustable LED illumination for optimal visibility

Reliability

- **Robust Construction:** IP68 waterproof rating and 15kg load capacity
- **Obstacle Negotiation:** Capable of traversing obstacles up to 25% of pipe diameter
- **Extended Operation:** 120m standard cable range with custom extensions available
- **Environmental Adaptability:** Operates in -10°C to 50°C temperature range

Key Features & Components



Control System

- **Hardware Platform:** Industrial-grade tablet with wireless connectivity (100m range)
- **Control Functions:** Comprehensive crawler movement control, camera positioning, and lighting adjustment
- **Data Display:** Real-time HD video display with overlaid crawler status and sensor readings
- **Recording Capability:** Simultaneous video recording and image capture with metadata tagging
- **Software Features:** Advanced distance measurement, defect marking, and automated report generation



Crawler

- **Drive System:** 4-wheel independent drive with differential steering capability
- **Speed Range:** 0-30 meters/minute, continuously adjustable with precision control
- **Gradeability:** 25% maximum slope negotiation capability
- **Load Capacity:** 15kg rated traction load for stable operation
- **Protection Rating:** IP68 waterproof standard for submerged operation
- **Compatible Pipes:** 150-2000mm diameter range coverage



Camera

- **Sensor:** 1/2.8" CMOS HD sensor with advanced image processing
- **Resolution:** 1920×1080 pixels at 30fps smooth transmission
- **Lens Options:** Rotary lens (360° horizontal rotation, ±90° tilt), Rotary-straight lens (dual-mode), Straight-view lens (fixed)
- **Lighting:** 6 high-intensity LEDs with automatic intensity control
- **Focus:** Auto-focus system with 10cm minimum focusing distance



Cable Reel

- **Cable Length:** Standard 120m (custom lengths up to 200m available)
- **Operation:** Electric automatic winding system with tension control
- **Encoder:** ±0.1m accuracy distance measurement with cumulative counting
- **Protection:** IP67 waterproof enclosure with dust protection

SEE THE UNSEEN, CAPTURE THE DETAILS WITH WIRELESS FREEDOM AND PRECISION



Main Configuration Including:

- Crawler
- Camera
- Cable Reel
- Control System