

Industrial Remote Control Hydraulic Excavator Kits

Technical Specification & Integration Manual

1. Product Overview

The **Nomi Industrial Remote Control Hydraulic Excavator Kit** is a premium-grade, high-reliability heavy machinery conversion system designed to transform traditional pilot-operated or mechanically controlled hydraulic excavators into advanced, safe, and highly precise wireless remote-controlled operations.

Engineered specifically for hazardous environments—such as mining, tunneling, demolition, and toxic material handling—this kit bridges the gap between operator safety and peak mechanical efficiency. Powered by proprietary multi-frequency hopping technology and industrial-grade hydraulic proportional valves, it delivers zero-latency control and unparalleled ruggedness.

Product Description



2. Core Technical Parameters

Component / Specification	Technical Details & Ratings
System Brand	Nomi
Application Suitability	5-Ton to 50-Ton Hydraulic Excavators
Operating Frequency Range	433MHz / 868MHz / 2.4GHz (Customizable)
Max Wireless Range	Up to 100 meters (328 feet) unobstructed
Response Latency	Less than 20ms (Real-time synchronous control)
Enclosure Protection Rating	IP66 / IP67 (Dust-tight & Waterproof)
Operating Temperature	-25°C to +70°C (-13°F to 158°F)
Battery Life (Transmitter)	Up to 20 hours continuous operation (Rechargeable Li-ion)
Hydraulic Control Type	Electro-Hydraulic Proportional / PWM Control

3. Key Features & Advantages

Industrial-Grade Safety Architecture: Equipped with a dual-CPU hardware redundancy structure and an instantaneous Emergency Stop (E-Stop) system compliant with global EN ISO 13849-1 Category 3 PL d safety standards.

Precision Proportional Joysticks: Dual heavy-duty, multi-axis joysticks provide smooth, proportional oil-flow scaling, allowing operators to perform complex compound movements (Boom, Arm, Bucket, and Swing simultaneously) just like sitting in the cabin.

Anti-Interference Frequency Hopping: Automatically scans and locks onto the cleanest RF channel using advanced FHSS (Frequency Hopping Spread Spectrum) technology, preventing signal drops in high-interference industrial zones.

Ruggedized & Weatherproof Design: The transmitter housing is molded from high-impact glass-fiber reinforced nylon, resisting shocks, drops, chemical exposure, and extreme weather.

4. System Components List

Wireless Joystick Transmitter: Features dual multi-axis proportional joysticks, safety key switch, rotary toggles, and an integrated OLED status display for battery and signal strength.

Industrial Receiver Unit: Housed in a heavy-duty IP67 enclosure with an external high-gain omnidirectional antenna and shock-absorbing mounts.

Electro-Hydraulic Proportional Valve Block: Pre-configured valve manifolds designed to splice seamlessly into the excavator's pilot control lines.

Heavy-Duty Wiring Harness: Specialized automotive-grade braided wiring with waterproof Deutsch connectors for plug-and-play installation.

5. Installation & Wiring Guidelines

Safety First: Ensure the excavator engine is completely shut off, the hydraulic system is fully depressurized, and the main battery isolator switch is disconnected before starting the installation.

Step-by-Step Integration:

Receiver Mounting: Fix the Nomi receiver securely inside the excavator's upper structure cabin or tool compartment using the provided rubber vibration isolators. Ensure the antenna has a clear line of sight.

Hydraulic Integration: Intercept the pilot control lines running from the cabin joysticks to the main control valve (MCV). Connect them to the Nomi electro-hydraulic proportional valve block using high-pressure hydraulic hoses.

Electrical Wiring: Connect the pre-fabricated wiring harness from the receiver to the proportional valve solenoids. Route the power line to the excavator's 24V DC fuse box, utilizing a 10A inline fuse.

Calibration & Testing: Power on the system, pair the transmitter with the receiver, start the engine at low idle, and gradually calibrate the joystick dead-bands and maximum flow limits via the receiver programming interface.

6. Maintenance & Troubleshooting

Daily Check: Inspect the transmitter casing for cracks, verify that the Emergency Stop button pops up smoothly, and check the receiver antenna connection.

Hydraulic Inspection: Check all newly installed pilot hoses and valve blocks for fluid leaks or loose fittings every 50 operating hours.

LED Diagnostic Codes: The receiver internal motherboard features diagnostic LEDs. A solid green light indicates perfect RF synchronization; a flashing red light indicates a specific solenoid wiring fault or voltage drop.

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Expert B2B Wireless Remote Control Solutions for Heavy Industrial Machinery.