Fleet Vehicle Ultrasonic Sensor Maintenance & Inspection Checklist

A practical checklist for fleet engineers and managers to keep ultrasonic proximity sensors working reliably — installation checks, routine inspection, false alert diagnosis, and DVS compliance verification.

1. Installation and Initial Setup

- [ ] **Sensor faces clean and unobstructed**

No factory protective film, mud, or debris on sensor face before first use

- [ ] **Sensor brackets secure and correctly angled**

Verify detection zone covers intended area — no part of the vehicle in the detection field

- [ ] **Wiring routed away from heat sources and moving parts**

Corroding or chafed wiring is the most common cause of sensor failure after 12 months

- [ ] **Calibration confirmed after installation**

Detection distance should match the system specification at close range

- [ ] **Audible/visual alert tested at the driver position**

Driver must be able to hear or see the alert clearly when the sensor detects an obstacle

- [ ] **System integration tested with cab monitor if fitted**

Sensor alert should trigger camera feed display where combined system is installed

2. Routine Inspection (Monthly)

- [ ] **Sensor faces cleaned (all sensors on vehicle)**

Mud, ice, road film — use soft cloth and water. Avoid pressure washing directly at sensor face

- [ ] **Physical condition of each sensor housing checked**

Cracks, dents, or impact damage can alter the detection field or allow moisture ingress

- [ ] **All wiring connectors checked for corrosion or looseness**

Vibration loosens connectors over time — check especially at junction points

- [ ] **Brackets and mounting hardware checked for security**

Vibration and minor impacts can loosen mounting — re-torque if any movement detected

- [ ] **Detection test: object placed at calibrated distance**

Confirm the alert triggers consistently at the designed detection threshold

- [ ] **Alert system function confirmed at driver position**

Audible and visual alert should activate without delay when detection test is performed

3. False Alert Diagnosis

- [ ] **Sensor face inspected for dirt or debris**

Most 'stuck' alert faults clear immediately after sensor face is cleaned

- [ ] **Mounting angle checked against original installation spec**

A shifted sensor may be detecting part of the vehicle body — reposition if needed

- [ ] **Nearby noise sources identified**

High-frequency industrial noise near the operating area can trigger false detection

- [ ] **Wiring connection inspected for intermittent fault**

A partially connected wire can cause intermittent or constant false activation

- [ ] **Calibration file checked if system allows**

A corrupted calibration can shift the detection threshold — check with supplier if other checks pass

4. No-Alert Failure Diagnosis

- [ ] **Power supply to sensor confirmed (voltage check at connector)**

No power is the first check — verify the circuit is live before replacing the sensor

- [ ] **Wiring continuity from sensor to control unit confirmed**

Break or high-resistance fault in the cable will silence a sensor without any visual indicator

- [ ] **Sensor housing inspected for physical damage**

A cracked sensor face prevents signal transmission — replace if damaged

- [ ] **Control unit and alert buzzer/display checked independently**

Fault may be in the alert output device, not the sensor — test by substituting known-good alert unit

- [ ] **Spare sensor substituted to confirm sensor failure**

If a substitute sensor on the same circuit triggers normally, the original sensor has failed

5. DVS 2024 Compliance Verification (Greater London HGVs over 12t)

- [ ] **Confirmed whether vehicle requires DVS 2024 compliance**

Applies to HGVs over 12 tonnes operating in Greater London — check TfL permit status

- [ ] **Confirmed current system meets BSIS specification (not DVS 2020 ultrasonic only)**

DVS 2024 requires BSIS and MOIS — ultrasonic-only systems do not meet the 2024 standard

- [ ] **MOIS (Moving Off Information System) confirmed operational**

Required under DVS 2024 — check with supplier that fitted system meets the specification

- [ ] **DVS Safe System permit obtained and current**

Annual renewal required — note permit expiry date and set renewal reminder

- [ ] **Upgrade plan confirmed if current system is DVS 2020 ultrasonic only**

Speak to vehicle safety supplier about radar or AI camera upgrade to meet DVS 2024 BSIS requirement