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UIAHNE LR024651

UIAHNE Steering Wheel Angle Sensor Replacement

USER MANUAL

Model: LR024651

Introduction

This manual provides essential information for the proper installation, operation, and maintenance of your UIAHNE Steering Wheel Angle Sensor Replacement (Model LR024651). This sensor is designed to accurately measure the steering wheel's rotational position, which is crucial for various vehicle systems, including electronic stability control (ESC) and power steering. Please read this manual thoroughly before installation and use to ensure optimal performance and safety.

Safety Information

Always observe the following safety precautions to prevent injury or damage to the vehicle:

- Ensure the vehicle's ignition is off and the battery is disconnected before beginning any installation or maintenance work.
- Wear appropriate personal protective equipment (PPE), such as safety glasses and gloves.
- Refer to your vehicle's specific service manual for detailed instructions regarding steering system components and airbag system precautions.
- Improper installation can lead to system malfunctions, potentially affecting vehicle handling and safety. If unsure, seek professional assistance.
- Handle the sensor with care to avoid damage to electrical connectors or internal components.

Product Overview

The UIAHNE LR024651 Steering Wheel Angle Sensor is a precision component designed for direct replacement in compatible vehicles. It features robust construction and is engineered to meet or exceed original equipment specifications, ensuring reliable performance and accurate data transmission to the vehicle's control modules.



Figure 1: Front view of the UIAHNE LR024651 Steering Wheel Angle Sensor, showing the main coil and electrical connectors.

Key features include:

- **User-friendly design:** Allows for straightforward installation without the need for specialized tools.
- **Durable construction:** Withstands daily wear and tear, ensuring longevity under various driving conditions.
- **Optimized performance:** Enhances vehicle handling and stability for a safer driving experience.
- **OEM specifications:** Designed to meet or exceed original equipment manufacturer specifications for a precise fit and function.
- **Cost-effective solution:** Offers excellent value for maintaining your vehicle's steering system integrity.

Setup and Installation

The installation of a steering wheel angle sensor typically involves working with the steering column and potentially the airbag system. Proceed with caution and consult a professional if you are not confident in performing this procedure.

1. Preparation:

- Park the vehicle on a level surface and engage the parking brake.
- Disconnect the negative terminal of the vehicle's battery and wait at least 10-15 minutes to allow the airbag system's backup power to dissipate.
- Ensure the steering wheel is centered and locked in position.

2. Accessing the Sensor:

- Carefully remove the airbag module from the steering wheel according to your vehicle's service manual. Store it safely, face up.
- Remove the steering wheel retaining nut and the steering wheel itself.
- Remove any plastic shrouds or covers around the steering column to expose the clock spring and steering angle sensor assembly.

3. Sensor Replacement:

- Disconnect the electrical connectors from the old steering angle sensor.
- Carefully unclip or unbolt the old sensor from its mounting location. Note its orientation.
- Install the new UIAHNE LR024651 sensor, ensuring it is correctly oriented and securely fastened.
- Connect all electrical connectors firmly.

4. Reassembly:

- Reinstall the steering column shrouds, steering wheel, and airbag module in reverse order of removal.
- Reconnect the vehicle's battery.

5. Calibration (Crucial Step):

- After installation, the new steering angle sensor **must be calibrated** using a compatible diagnostic scan tool. This step is critical for the proper function of the vehicle's stability control and other related systems.
- Follow the specific calibration procedure outlined in your vehicle's service manual or by the diagnostic tool manufacturer.



Figure 2: Side view of the sensor, highlighting the various electrical connectors for proper installation.

Operating Principles

Once installed and calibrated, the UIAHNE LR024651 Steering Wheel Angle Sensor continuously monitors the rotational position of the steering wheel. This data is transmitted to the vehicle's Engine Control Unit (ECU) or other relevant control modules. The ECU uses this information, along with data from other sensors (e.g., wheel speed sensors, yaw rate

sensor), to determine the driver's intended direction and compare it with the vehicle's actual movement. This is fundamental for systems like:

- **Electronic Stability Control (ESC):** Helps prevent skidding and loss of control by applying individual brakes and/or reducing engine power.
- **Traction Control System (TCS):** Prevents wheel spin during acceleration.
- **Electric Power Steering (EPS):** Adjusts steering assist based on steering input.
- **Adaptive Headlights:** Directs headlight beams in the direction of travel.

The sensor provides an analog output, ensuring precise and real-time feedback to the vehicle's systems.

Maintenance

The UIAHNE Steering Wheel Angle Sensor is a sealed unit and generally requires no routine maintenance. However, to ensure its longevity and proper function:

- **Keep Connections Clean:** If the sensor needs to be accessed for other repairs, ensure all electrical connectors are clean and free of corrosion before reassembly.
- **Avoid Physical Damage:** Protect the sensor from impacts or excessive force during any other work performed near the steering column.
- **Professional Inspection:** If you suspect an issue with the sensor, have it diagnosed by a qualified automotive technician.

Troubleshooting

A malfunctioning steering wheel angle sensor can trigger various warning lights on your dashboard and affect vehicle handling. Common symptoms and potential solutions include:

| Symptom | Possible Cause | Action |
|----------------------------------|---|---|
| ESC/Traction Control Light On | Sensor malfunction, incorrect calibration, wiring issue. | Check for diagnostic trouble codes (DTCs). Recalibrate the sensor. Inspect wiring and connectors. |
| Steering Wheel Off-Center | Sensor not centered during installation, alignment issue. | Ensure steering wheel is centered before sensor installation. Perform wheel alignment and sensor calibration. |
| Intermittent System Malfunctions | Loose connection, faulty sensor, electrical interference. | Inspect all connections for tightness. Check for corrosion. If issues persist, professional diagnosis is recommended. |
| No Communication with Sensor | Damaged wiring, faulty sensor, blown fuse. | Check relevant fuses. Inspect wiring harness for damage. Verify sensor connections. |

Note: Many issues related to the steering angle sensor require specialized diagnostic tools for accurate identification and resolution. It is highly recommended to consult a certified automotive technician for complex problems.

Specifications

The following are the technical specifications for the UIAHNE LR024651 Steering Wheel Angle Sensor:

| Attribute | Value |
|---------------------------|--|
| Brand | UIAHNE |
| Model Name | LR024651 |
| Manufacturer Part Number | UIAHNE112 |
| ASIN | B0DMK2LXS4 |
| Item Weight | 50 Grams (approx. 1.76 ounces) |
| Measurement Accuracy | ±1 degree |
| Measuring Range | -180° to 180° |
| Mounting Type | Wheel Mount |
| Output Type | Analog |
| Specific Uses For Product | Automotive, steering angle measurement |
| Country of Origin | China |

Warranty and Support

For specific warranty information regarding your UIAHNE LR024651 Steering Wheel Angle Sensor, please refer to the purchase documentation or contact the seller directly. Warranty terms typically cover manufacturing defects for a specified period from the date of purchase.

For technical support or assistance with installation and troubleshooting, it is recommended to consult a qualified automotive technician or refer to your vehicle's official service manual. For product-specific inquiries, you may attempt to contact the manufacturer, UIAHNE, through their official channels if available.

