BBSHD ASpeed Sensor

Speed Sensor User Manual

Model: ASpeed Sensor | Brand: BBSHD

1. Introduction

This manual provides essential information for the installation, operation, and maintenance of your BBSHD Speed Sensor. This sensor is designed for use with BAFANG Mid Motors, including 250W, 350W, 500W, 750W, and 1000W models, ensuring precise speed detection for your electric bike conversion kit.
The speed sensor is a critical component for accurate system support, offering high sensitivity, long life, stable output amplitude, and anti-electromagnetic interference capabilities.

2. Specifications

Below are the detailed technical specifications for the BBSHD Speed Sensor:

Category	Parameter	Value
Core Data	Type	Speed Sensor
	Signals (Pulses / Cycle)	1
	Input Voltage (DCV)	4.2 - 5.5
	Operating Temperature	-20 - 45 °C
Mounting Parameters	Mounting Position	Chain Stay
	Cable Length (mm)	80
	Connector Type	M3.10
	Induction Distance (mm)	5 (Recommended 2-3mm)
Tests & Certifications	IP Rating	IP 65
	Certifications	EN 15194 / ROHS

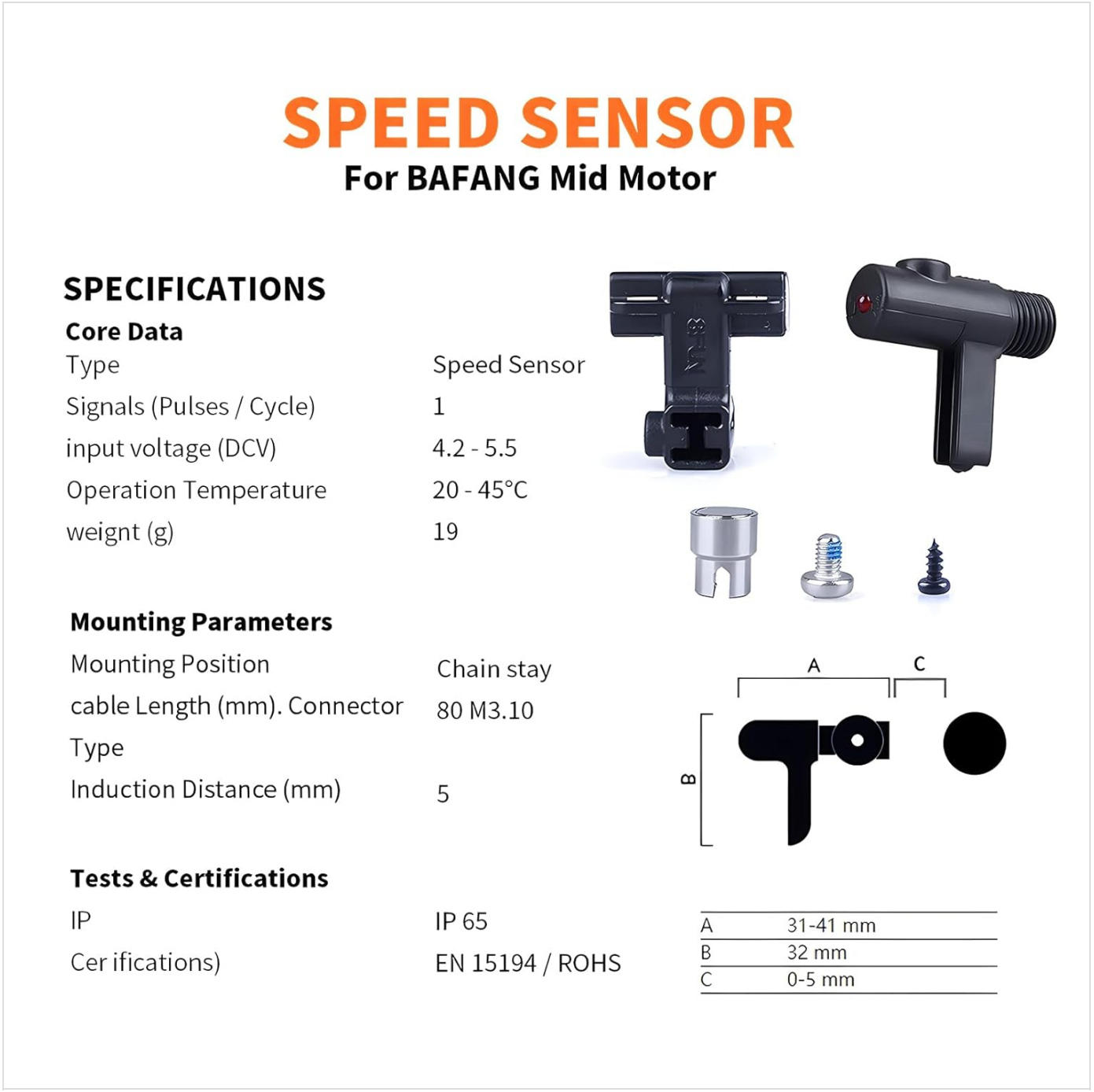

Figure 2.1: Detailed specifications and dimensional overview of the speed sensor components.

3. Setup and Installation

Follow these steps for proper installation of the speed sensor on your BAFANG mid-drive motor kit:

1. **Prepare the Sensor Mount:** Locate the speed sensor mounting bracket. If it has an adhesive film, carefully tear it off to expose the adhesive surface.
2. **Attach the Sensor:** Insert the speed sensor into the mounting bracket, ensuring it aligns correctly with the 'cross' marking or designated slot.
3. **Mount the Bracket:** Secure the sensor and bracket assembly to the chain stay of your bicycle. Use the provided mounting screws to firmly attach it.
4. **Install the Magnet:** Attach the magnet to a spoke on your rear wheel. Ensure it is positioned so that it passes directly in front of the sensor when the wheel rotates.
5. **Adjust Sensing Distance:** The critical step is to ensure the distance between the magnet and the sensor is within the optimal range. The recommended sensing distance is 2-3mm, and it must be less than 5mm for reliable operation. Adjust the position

of the sensor or magnet as needed.

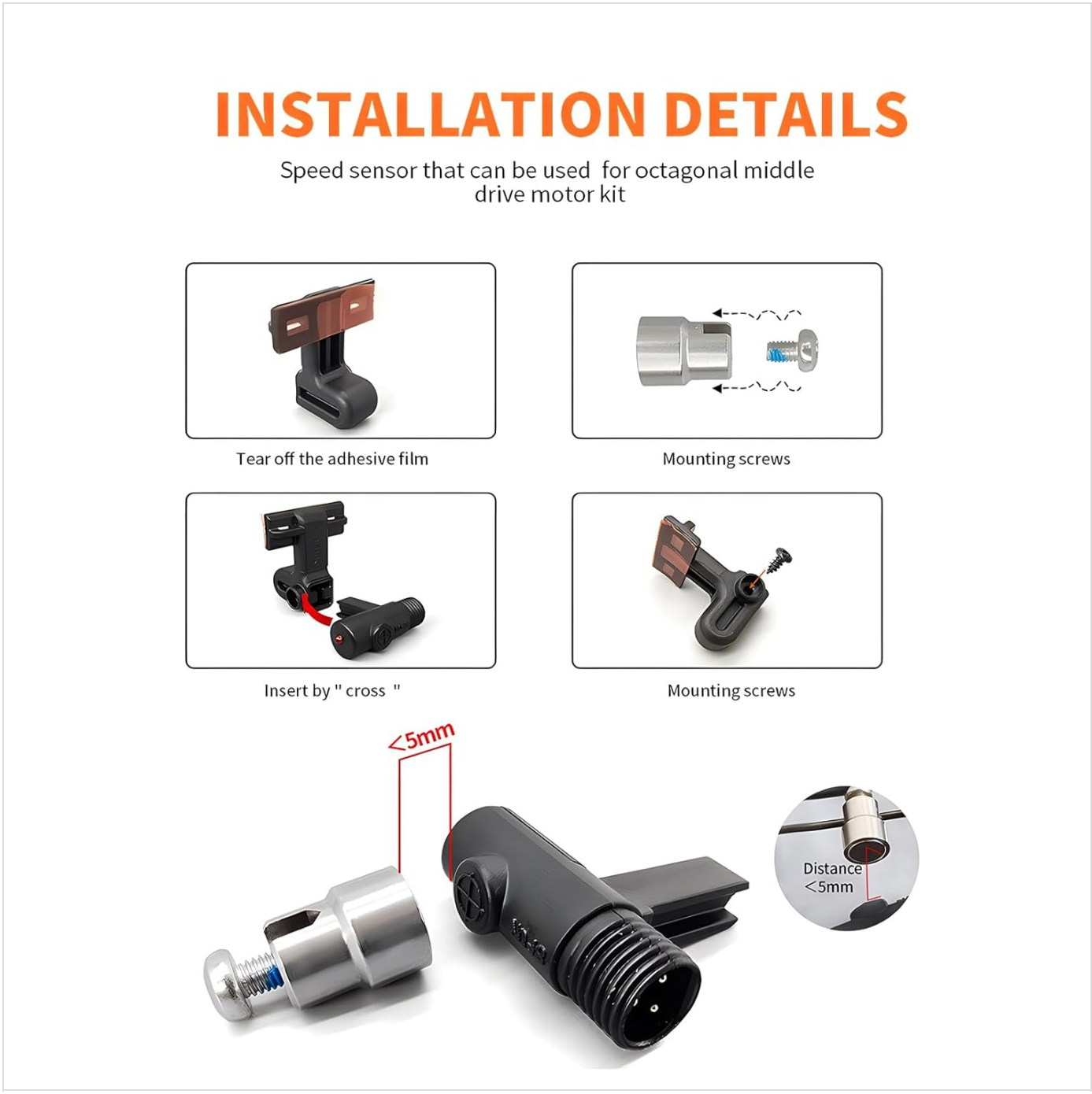

Figure 3.1: Visual guide for speed sensor installation, showing component assembly and optimal sensing distance.

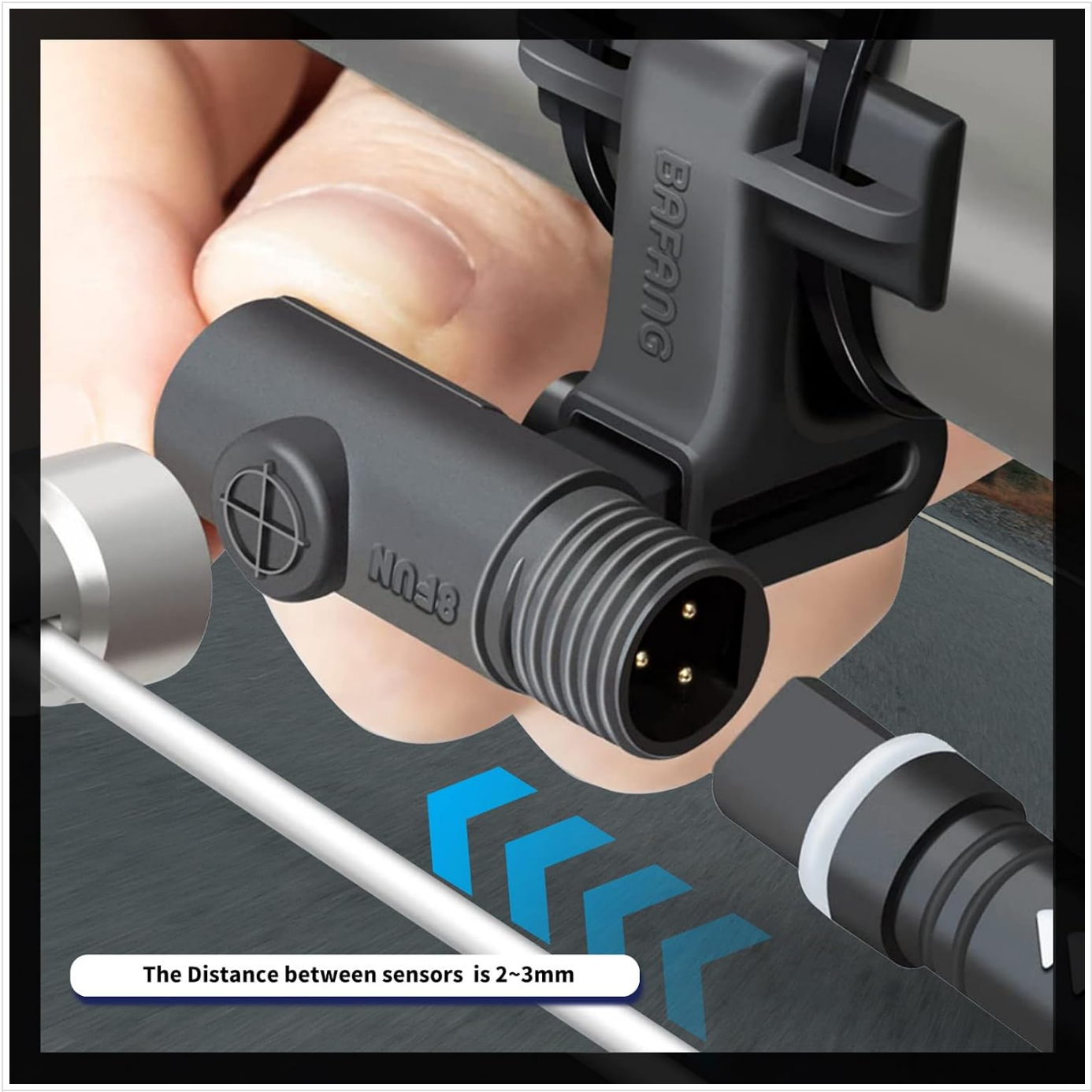

Figure 3.2: Close-up illustration emphasizing the critical 2-3mm distance between the sensor and the magnet for accurate readings.

4. Operation

Once installed, the speed sensor operates by detecting the passage of the magnet attached to the wheel spoke. Each time the magnet passes the sensor, a pulse is generated, which is then transmitted to the BAFANG mid-motor controller. This allows the system to accurately calculate the bicycle's speed and provide appropriate motor assistance.

The sensor is designed to provide stable output amplitude and reliable data measurement, contributing to the overall accurate support for your electric bike system.

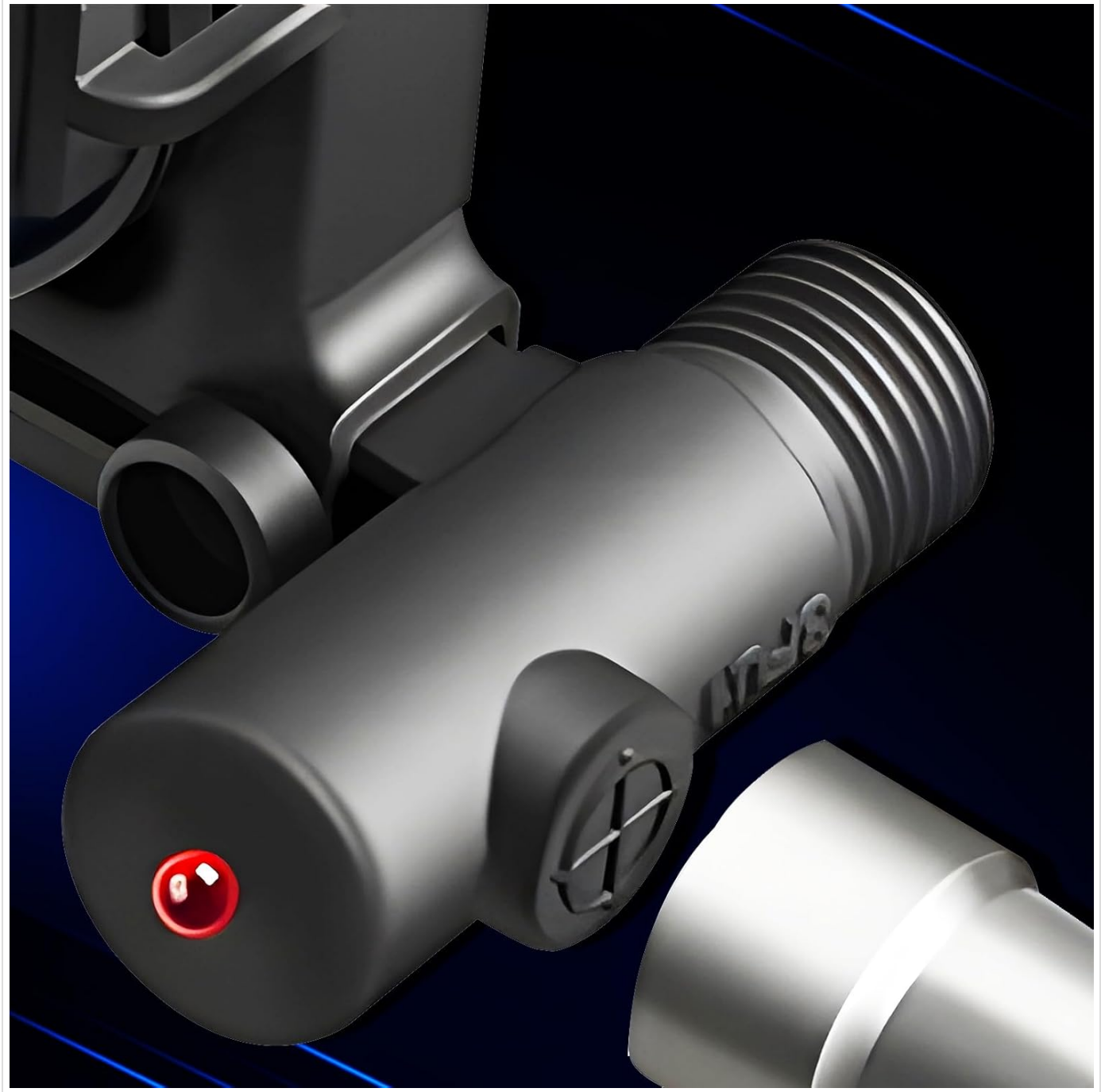

Figure 4.1: The speed sensor features an indicator light, which may illuminate or flash upon magnet detection, confirming proper operation.

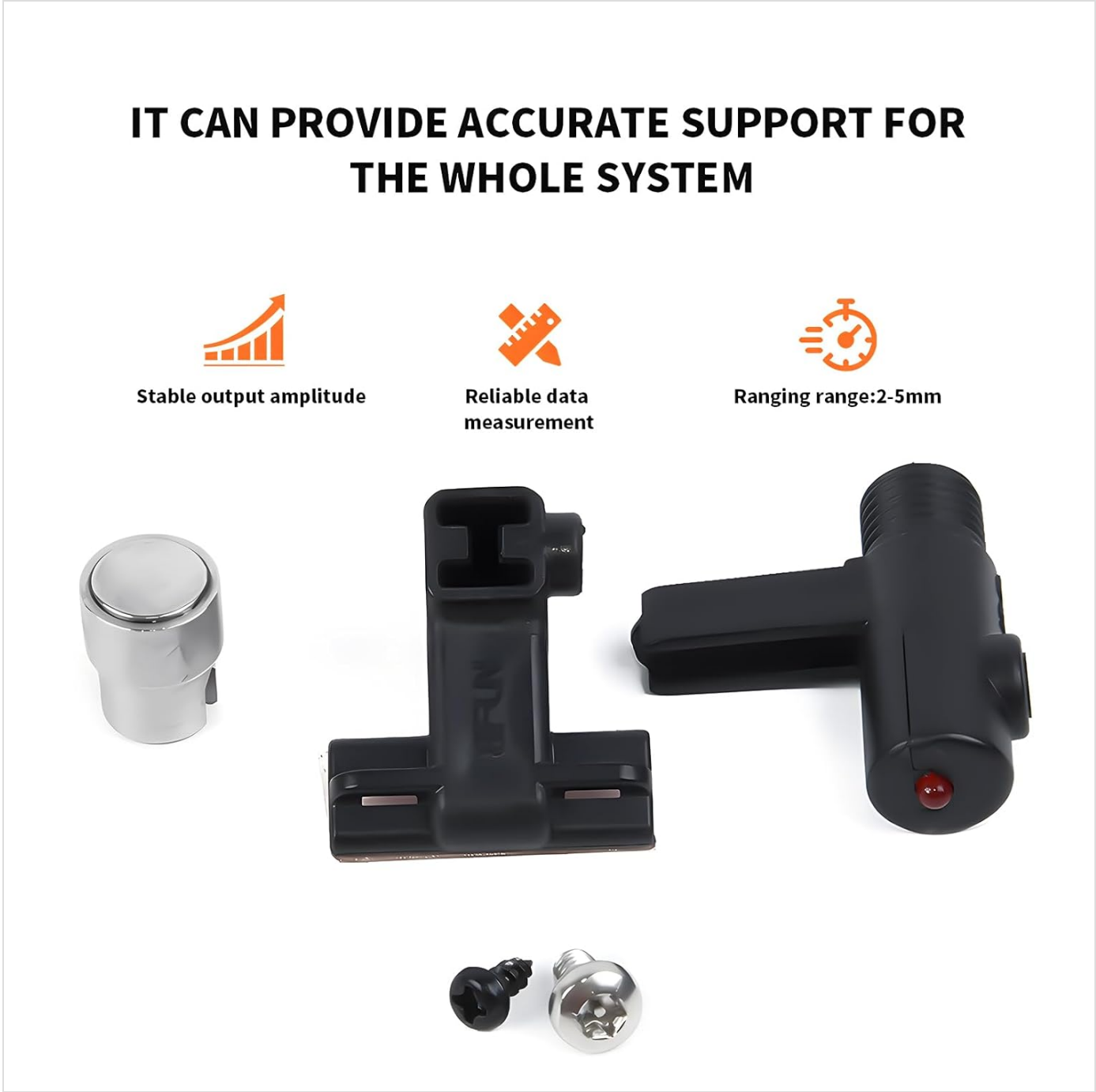

Figure 4.2: The speed sensor ensures stable output amplitude, reliable data measurement, and accurate ranging within 2-5mm for optimal system performance.

5. Maintenance

The BBSHD Speed Sensor is designed for durability and requires minimal maintenance. To ensure continued optimal performance:

- **Keep Clean:** Periodically wipe down the sensor and magnet with a clean, damp cloth to remove dirt, dust, or debris that could interfere with detection.
- **Check Connections:** Regularly inspect the wiring and connectors for any signs of wear, damage, or loose connections. Ensure the M3.10 connector is securely plugged into the motor system.
- **Verify Alignment:** Occasionally check that the sensor and magnet remain properly aligned and that the sensing distance is maintained within the recommended 2-3mm range.
- **Avoid Harsh Chemicals:** Do not use abrasive cleaners or harsh chemicals on the sensor, as this may damage its housing or internal components.

6. Troubleshooting

If you experience issues with your speed sensor, consider the following common problems and solutions:

- **No Speed Reading or Inaccurate Speed:**
  - *Check Sensing Distance:* Ensure the distance between the sensor and the magnet is 2-3mm (maximum 5mm). Adjust their positions if necessary.
  - *Verify Magnet Position:* Confirm the magnet is securely attached to a spoke and passes directly in front of the sensor's detection area.
  - *Inspect Wiring:* Check the sensor cable for any cuts, pinches, or damage. Ensure the connector is fully seated and secure.
  - *Clean Sensor/Magnet:* Remove any dirt or debris that might be obstructing the sensor's ability to detect the magnet.
- **Intermittent Speed Readings:**
  - *Loose Connections:* Re-check all cable connections to ensure they are tight and secure.
  - *Vibration:* Ensure the sensor and magnet are firmly mounted and not vibrating excessively, which could cause inconsistent readings.
  - *Electromagnetic Interference:* While designed to be anti-electromagnetic, ensure no strong external magnetic fields or electrical noise sources are directly adjacent to the sensor.
- **Sensor Indicator Light Not Functioning (if applicable):**
  - *Power Supply:* Ensure the motor system is powered on and providing voltage to the sensor.
  - *Sensor Damage:* If all other checks fail, the sensor itself may be faulty and require replacement.

If these steps do not resolve the issue, please contact customer support for further assistance.

7. Warranty Information

Specific warranty details for the BBSHD Speed Sensor are typically provided at the point of purchase or included with the product packaging. Please refer to your purchase documentation for information regarding warranty duration and terms. Generally, products are covered against manufacturing defects for a limited period from the date of purchase.

8. Customer Support

For technical assistance, replacement parts, or any inquiries not covered in this manual, please contact your retailer or the manufacturer directly. Have your product model number (ASpeed Sensor) and purchase details ready when contacting support.