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> HELLA 90mm Halogen/DE Headlight Module 24V (Model 1AL 009 998-041) Instruction Manual

Hella 1AL 009 998-041

HELLA 90mm Halogen/DE Headlight Module 24V

Model: **1AL 009 998-041** | Brand: **Hella**

1. INTRODUCTION

This instruction manual provides essential information for the proper installation, operation, and maintenance of your HELLA 90mm Halogen/DE Headlight Module. This high-performance headlight is designed for 24V vehicle electrical systems and is suitable for a wide range of applications, particularly in trucks and agricultural vehicles. It features both high beam and low beam functions and is ECE-compliant for right-hand traffic.

Please read this manual thoroughly before installation and use to ensure safety and optimal performance of the product.

2. SAFETY INFORMATION

- Always disconnect the vehicle's battery before performing any electrical work to prevent short circuits and electrical shock.
- Wear appropriate personal protective equipment, including safety glasses and gloves, during installation.
- Ensure that the headlight module is compatible with your vehicle's electrical system (24V).
- Do not touch the halogen bulb with bare hands, as oils from your skin can cause hot spots and reduce bulb life.
- Secure all wiring connections properly to prevent loose contacts, which can lead to flickering or failure.
- Professional installation is recommended for complex wiring or if you are unsure about any steps.

3. PACKAGE CONTENTS

Verify that all components are present and undamaged before proceeding with installation. The package typically includes:

- HELLA 90mm Halogen/DE Headlight Module (1AL 009 998-041)
- Pre-mounted adjustment screws
- H7 24V bulb (included)
- Necessary connectors (AMP type)



Image 3.1: HELLA 90mm Halogen/DE Headlight Module and its packaging. The module is round with a clear glass lens, housed in a black casing, and comes with a yellow HELLA branded box.

4. SETUP AND INSTALLATION

The HELLA 90mm Halogen/DE Headlight Module is designed for straightforward installation, featuring pre-mounted adjustment screws for ease of alignment.

4.1. Preparation

1. Ensure the vehicle's ignition is off and the battery is disconnected.
2. Identify the mounting location for the headlight module. This module is suitable for both front left and front right

positions.

3. Remove any existing headlight components if replacing.

4.2. Mounting the Module

1. Carefully position the HELLA headlight module into the designated opening.
2. Secure the module using the pre-mounted adjustment screws. Ensure it is firmly seated and aligned.

4.3. Electrical Connection

1. Connect the AMP-type connectors from the vehicle's wiring harness to the corresponding terminals on the headlight module. Refer to your vehicle's wiring diagram if necessary.
2. Ensure all connections are secure and properly insulated to prevent moisture ingress and corrosion.



Image 4.1: Rear view of the headlight module. This image displays the electrical connectors (AMP type) and the housing for the H7 bulb, crucial for wiring and bulb replacement.

4.4. Beam Adjustment

1. Reconnect the vehicle's battery.
2. Turn on the headlights.
3. Use the adjustment screws to correctly aim the headlight beam. Proper beam alignment is crucial for road safety and to comply with ECE regulations. Consult a professional for precise beam adjustment if needed.

5. OPERATING INSTRUCTIONS

The HELLA 90mm Halogen/DE Headlight Module provides two primary lighting functions: low beam and high beam.

- **Low Beam:** Activates the standard driving light, designed to illuminate the road ahead without dazzling oncoming traffic. Use this setting for general driving conditions, especially at night or in low visibility.

- **High Beam:** Provides maximum illumination for extended visibility. Use high beams only when no other vehicles are present on the road or when driving in areas with no street lighting. Switch to low beam when approaching or following other vehicles.

Control of these functions is typically managed through your vehicle's standard headlight switch and stalk controls.

6. MAINTENANCE

Regular maintenance ensures the longevity and optimal performance of your headlight module.

- **Cleaning:** Periodically clean the headlight lens with a soft cloth and mild soap solution. Avoid abrasive cleaners or harsh chemicals that could damage the glass lens.
- **Bulb Replacement:** The module uses an H7 24V halogen bulb. If a bulb fails, replace it with a new H7 24V bulb of the correct wattage (typically 70W for 24V systems). Refer to section 4.3 for accessing the bulb housing. Ensure the new bulb is inserted correctly and the housing is sealed to prevent moisture ingress.
- **Inspection:** Regularly check for any signs of damage to the lens, housing, or wiring. Ensure all mounting screws are tight.

7. TROUBLESHOOTING

If you encounter issues with your headlight module, refer to the following common problems and solutions:

Problem	Possible Cause	Solution
Headlight does not illuminate	Blown bulb, faulty wiring connection, blown fuse, electrical system issue	Check and replace bulb. Inspect wiring and connections. Check vehicle fuses. Consult a professional if electrical system issues are suspected.
Dim or flickering light	Loose connection, aging bulb, insufficient voltage	Secure all electrical connections. Replace bulb. Verify vehicle's voltage supply.
Moisture inside lens	Improper seal, damaged housing	Ensure bulb housing is properly sealed. Inspect for cracks in the lens or housing. Replace module if damage is significant.

8. SPECIFICATIONS

Detailed technical specifications for the HELLA 90mm Halogen/DE Headlight Module (Model 1AL 009 998-041):

- **Model Number:** 1AL 009 998-041
- **Brand:** Hella
- **Assembly Name:** Halogen/DE Projector
- **Light Source Type:** Halogen (H7 bulb included)
- **Voltage:** 24 Volts
- **Lighting Functions:** 2 (High Beam, Low Beam)
- **Lens Material:** Glass
- **Lens Color:** Clear
- **Housing Color:** Black

- **Product Dimensions (L x W x H):** 19 x 14.3 x 12 cm
- **Weight:** 914 grams
- **Conformity Mark:** ECE/E1 2484 (for right-hand traffic)
- **Vehicle Service Type:** Truck, Agricultural Vehicle
- **Special Feature:** Pre-mounted adjustment screws for easy installation
- **Country of Origin:** Romania

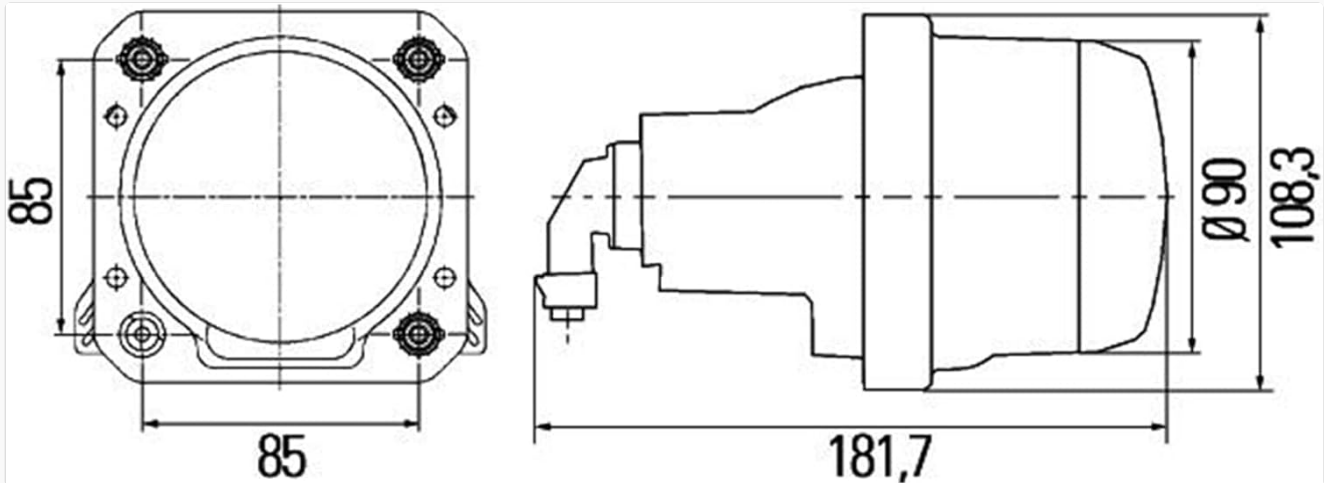


Image 8.1: Technical drawing showing the dimensions of the HELLA 90mm Halogen/DE Headlight Module. Key dimensions include a 90mm diameter for the lens and overall length of 181.7mm.

9. WARRANTY AND SUPPORT

This HELLA headlight module comes with a **2-year manufacturer's warranty** from the date of purchase. This warranty covers defects in materials and workmanship under normal use.

For warranty claims, technical support, or further assistance, please contact your HELLA dealer or authorized service center. Keep your proof of purchase for warranty validation.