

Webasto Air Top EVO 40

Webasto Air Top EVO 40 Diesel Air Heater User Manual

Model: Air Top EVO 40

1. INTRODUCTION

This manual provides essential information for the safe and efficient operation, installation, and maintenance of your Webasto Air Top EVO 40 Diesel Air Heater. This unit is designed to provide reliable heating for RVs, trucks, and other vehicles. Please read this manual thoroughly before installation and use to ensure proper function and safety.

2. PRODUCT OVERVIEW AND COMPONENTS

The Webasto Air Top EVO 40 kit includes the main heater unit and various components necessary for installation and operation. Familiarize yourself with all parts before proceeding.



Figure 2.1: Overview of the Webasto Air Top EVO 40 Diesel Air Heater kit, showing the main heater unit, exhaust pipes, fuel pump, wiring harness, air ducts, and mounting hardware.

Key components typically include:

- Air Top EVO 40 Heater Unit
- Fuel Pump
- Fuel Line
- Exhaust Pipe and Silencer
- Combustion Air Intake Pipe
- Wiring Harness
- Mounting Plate and Hardware
- Air Ducting Components

3. TECHNICAL SPECIFICATIONS

The following table details the technical specifications for the Webasto Air Top EVO 40 diesel air heater. These values are crucial for proper installation and operation.

Technical data				
Heater	Air Top Evo 40 B	Air Top Evo 40 D	Air Top Evo 55 B	Air Top Evo 55 D
Type approval: EMC	E1 03 5529			
Type approval: Heating	E1 00 0385		E1 00 0386	
Design	Air heater with vaporising burner			
Heat flow over control range [kW]	1.7 to 3.5 (4.0)	1.5 to 3.5 (4.0)	1.7 to 5.0 (5.5)	1.5 to 5.0 (5.5)
Fuel	Petrol DIN EN 228	Diesel / biodiesel DIN EN 590/ DIN EN 14214	Petrol DIN EN 228	Diesel / biodiesel DIN EN 590/ DIN EN 14214
Fuel consumption over control range	0.18 to 0.38 (0.43) kg/h 0.25 to 0.51 (0.58) l/h	0.15 to 0.36 (0.41) kg/h 0.18 to 0.43 (0.49) l/h	0.18 to 0.54 (0.59) kg/h 0.25 to 0.73 (0.80) l/h	0.15 to 0.51 (0.56) kg/h 0.18 to 0.61 (0.67) l/h
Rated voltage [V]	12	12 / 24	12	12 / 24
Operating voltage range [V]	10.5 to 16	10.5 to 16 / 20.5 to 31	10.5 to 16	10.5 to 16 / 20.5 to 31
Rated power consumption over control range [W]	15 to 40 (55)		15 to 95 (130)	
Permissible ambient temperature (operation/storage): Heater [°C]	-40 to +40 / -40 to +85			
Permissible ambient temperature (operation/storage): Fuel pump [°C]	-40 to +20 / -40 to +85			
Permissible combustion air intake temperature [°C]	-40 to +20			
Setpoint temperature range [°C]	+5 to +35			
Volumetric flow rate with pressure loss in cold/hot air sys- tem 0.5 hPa [m³/h]	max. 132 (140)		max. 200 (220)	
CO ₂ in exhaust gas: Rated heating capacity VL [kW]	3.5		5.0	
CO ₂ in exhaust gas: CO ₂ rated value VL [vol%]	8.9	9.2	10.0	
Heater length [mm]	423 ± 2			
Heater width [mm]	148 ± 1			
Heater height [mm]	162 ± 1			
Heater weight [kg]	5.9			
IP class: Heater	IP5K4K			
IP class: Fuel pump	IPX6 / IPX7 / IP6K9K			
Max. length of combustion air line and exhaust line with exhaust silencer [m]	2			
Max. length of combustion air line and exhaust line without exhaust silencer [m]	5			
Max. permissible pressure loss in cold and hot air system [hPa]	2.0		3.0	

Figure 3.1: Technical data for Webasto Air Top EVO 40 and EVO 55 models, including heat output, fuel type, voltage, power consumption, and dimensions.

Webasto Air Top EVO 40 Technical Data

Parameter	Air Top EVO 40 D
Type approval: EMC	E1 00 0385
Heat flow over control range [kW]	1.5 to 3.5 (4.0)
Fuel	Diesel / biodiesel DIN EN 590 / DIN EN 14214

Parameter	Air Top EVO 40 D
Fuel consumption over control range [l/h]	0.18 to 0.43 (0.49) l/h
Rated voltage [V]	12 / 24
Operating voltage range [V]	10.5 to 16 / 20.5 to 31
Rated power consumption over control range [W]	15 to 40 (55)
Permissible ambient temperature (operation/storage): Heater [°C]	-40 to +40 / -40 to +85
Permissible ambient temperature (operation/storage): Fuel pump [°C]	-40 to +20
Permissible combustion air intake temperature [°C]	-40 to +20
Setpoint temperature range [°C]	+5 to +35
Volumetric flow rate with pressure loss in cold/hot air system 0.5 hPa [m³/h]	max. 132 (140)
CO ₂ in exhaust gas: Rated heating capacity VL [vol%]	9.2
Heater length [mm]	423 ± 2
Heater width [mm]	148 ± 1
Heater height [mm]	162 ± 1
Heater weight [kg]	5.9
IP class: Heater	IP5K4K
IP class: Fuel pump	IPX6 / IPX7 / IP6K9K
Max. length of combustion air line and exhaust line with exhaust silencer [m]	2
Max. length of combustion air line and exhaust line without exhaust silencer [m]	5
Max. permissible pressure loss in cold and hot air system [hPa]	2.0

4. SYSTEM FUNCTIONALITY

The Webasto Air Top EVO 40 operates as a forced-air diesel heater. It draws in fresh air, heats it using a combustion process, and then circulates the warm air into the vehicle's interior. The system includes a glow plug for ignition, a fuel pump for precise fuel delivery, and a control unit to manage the heating process.

Cross-section air heating system:

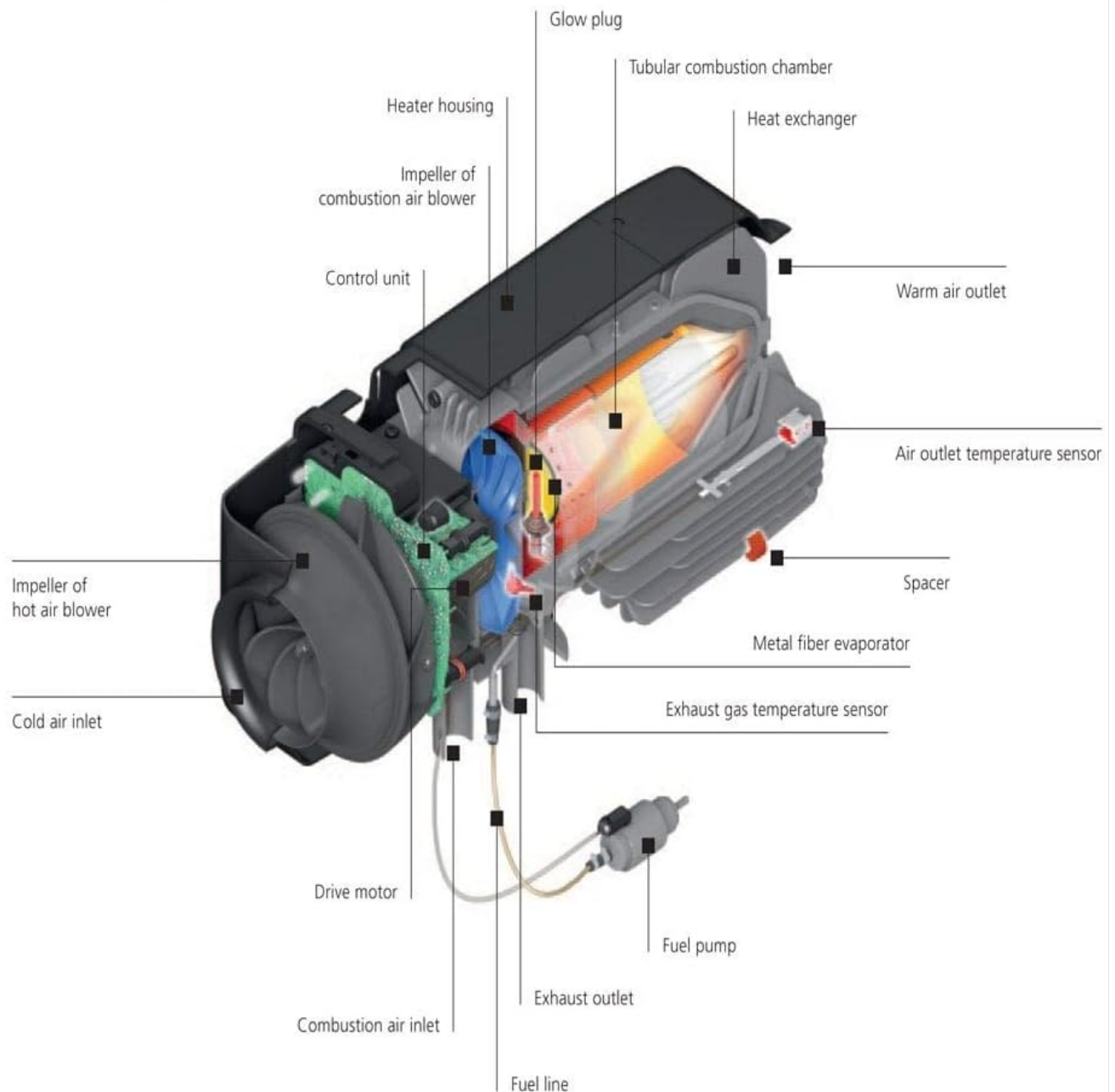


Figure 4.1: Cross-section view of the air heating system, illustrating key internal components such as the glow plug, combustion chamber, heat exchanger, impellers, control unit, and various sensors.

Key functional components include:

- **Heater Housing:** Encloses all internal components.
- **Combustion Air Blower:** Supplies air for the combustion process.
- **Tubular Combustion Chamber:** Where fuel is ignited and burned.
- **Heat Exchanger:** Transfers heat from the combustion gases to the circulating air without mixing.
- **Hot Air Blower:** Circulates the heated air into the vehicle.
- **Control Unit:** Manages all heater functions, including ignition, fuel delivery, and temperature regulation.
- **Fuel Pump:** Delivers precise amounts of diesel fuel to the combustion chamber.
- **Glow Plug:** Ignites the fuel-air mixture during startup.

5. INSTALLATION GUIDELINES

Proper installation is critical for the safe and efficient operation of your Webasto Air Top EVO 40 heater. It is

recommended that installation be performed by a qualified technician. Always adhere to local regulations and manufacturer guidelines.

5.1. Typical Applications

The Air Top EVO 40 is versatile and can be installed in various vehicle types, including:

- Recreational Vehicles (RVs)
- Trucks and Commercial Vehicles
- Boats (with marine-specific installation kits)
- Construction Equipment

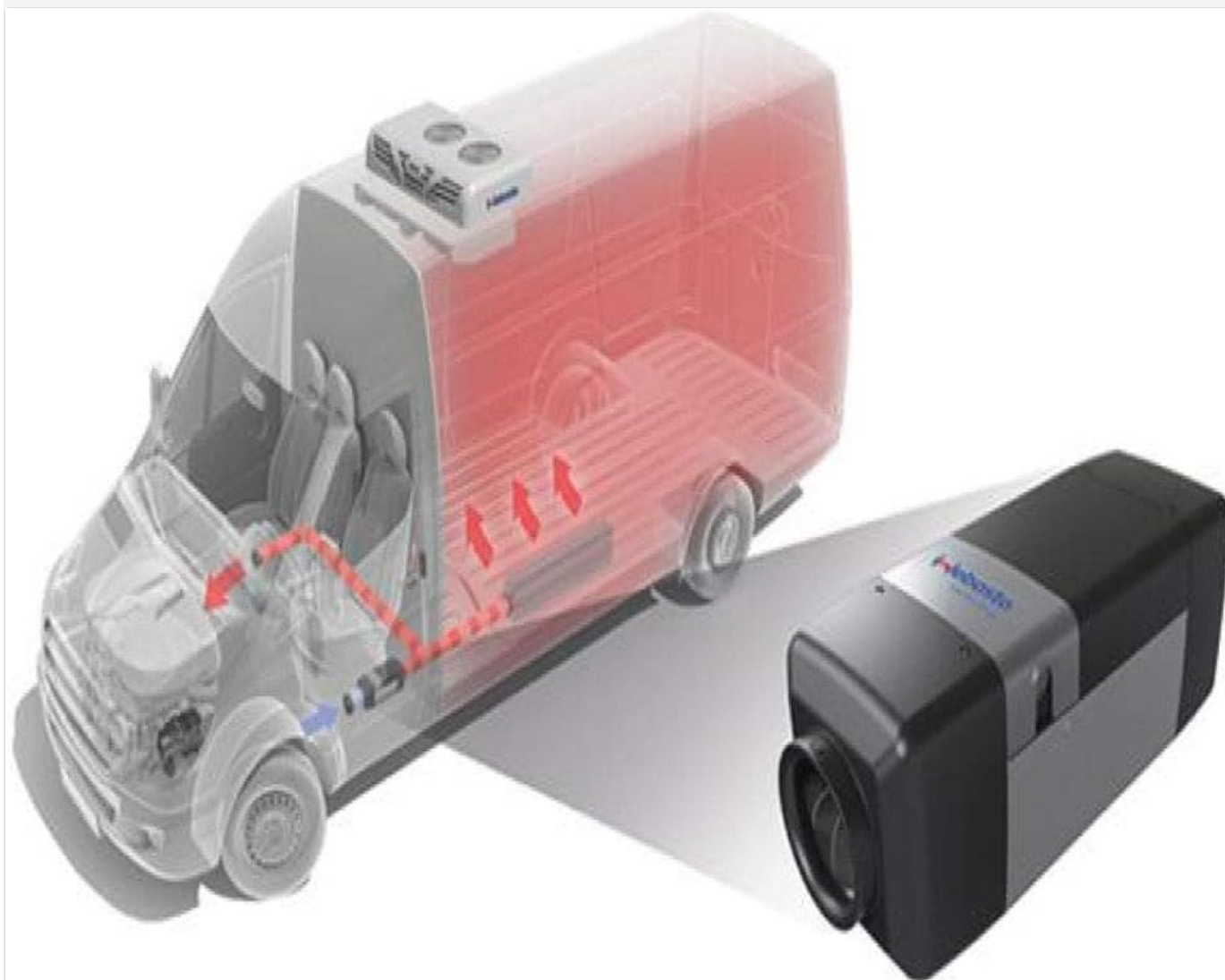


Figure 5.1: Illustrative diagram of a Webasto heater installed in a van, showing the placement of the heater unit and the routing of warm air ducts within the vehicle interior.



Figure 5.2: Illustrative diagram of a Webasto heater installed in a loader vehicle, indicating the heater unit's position and the distribution of heated air within the cabin.

5.2. General Installation Considerations

1. **Mounting Location:** Choose a dry, protected location, typically under the vehicle, in a storage compartment, or within the cabin, ensuring adequate clearance for air intake and exhaust.
2. **Fuel Supply:** Connect the fuel pump to the vehicle's diesel tank or a dedicated fuel tank. Ensure all fuel lines are securely fastened and free from leaks.
3. **Electrical Connection:** Connect the heater to a 12V or 24V DC power source as specified for your model. Ensure proper fusing and wiring according to the provided wiring diagram.
4. **Air Ducting:** Install the warm air ducts to distribute heat effectively throughout the desired area. Ensure ducts are not kinked or obstructed.
5. **Exhaust System:** Route the exhaust pipe safely away from flammable materials and passenger areas. Ensure proper sealing to prevent exhaust fumes from entering the vehicle.
6. **Combustion Air Intake:** Ensure the combustion air intake is clear of obstructions and draws in fresh air from outside the vehicle.

6. OPERATION INSTRUCTIONS

Operating the Webasto Air Top EVO 40 is straightforward using the control unit. The specific control panel may vary, but general functions remain consistent.



Figure 6.1: Example of a Webasto control knob, typically used for turning the heater on/off and adjusting the desired temperature.

6.1. Starting the Heater

1. Ensure the vehicle's battery is adequately charged and there is sufficient diesel fuel.
2. Turn the control knob or press the power button on your control panel to the 'ON' position or desired temperature setting.
3. The heater will initiate a startup sequence, which includes a self-test, glow plug activation, and fuel pump priming. This process may take a few minutes.
4. Once combustion is stable, warm air will begin to flow from the air outlets.

6.2. Adjusting Temperature

Use the control knob or digital interface to set your desired temperature. The heater will automatically adjust its heat output to maintain the set temperature.

6.3. Shutting Down the Heater

1. Turn the control knob or press the power button to the 'OFF' position.
2. The heater will enter a cool-down cycle to prevent overheating and clear the combustion chamber. Do not disconnect power during this cycle.
3. Once the cool-down cycle is complete (indicated by the fan stopping), the heater is safely shut down.

7. MAINTENANCE

Regular maintenance ensures the longevity and optimal performance of your Webasto Air Top EVO 40 heater. Perform these checks periodically.

- **Annual Inspection:** Have the heater inspected by a qualified technician at least once a year, preferably before the heating season.
- **Air Intake and Exhaust:** Regularly check that the combustion air intake and exhaust pipes are clear of obstructions (e.g., dirt, ice, debris).
- **Air Ducts:** Ensure the warm air ducts are clean and free from blockages.
- **Electrical Connections:** Check all electrical connections for tightness and corrosion.
- **Fuel System:** Inspect fuel lines for leaks or damage. Ensure the fuel filter (if installed) is clean.
- **General Cleaning:** Keep the exterior of the heater unit clean. Do not use harsh chemicals.

8. TROUBLESHOOTING

This section provides solutions for common issues you might encounter with your Webasto Air Top EVO 40 heater. For complex problems, contact Webasto authorized service.

Problem	Possible Cause	Solution
Heater does not start	Low battery voltage No fuel Blown fuse Faulty wiring	Check battery charge Check fuel level Inspect and replace fuse Check wiring connections
Heater starts but shuts down quickly	Insufficient fuel supply Blocked exhaust or air intake Overheating	Check fuel lines and pump Clear obstructions from exhaust/intake Ensure proper ventilation around heater
No warm air output	Blower malfunction Air duct blockage	Contact service technician Check and clear air ducts
Excessive smoke or unusual odor	Improper combustion Fuel leak	Immediately shut down heater and contact service. Do not operate.

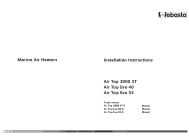

9. SUPPORT & WARRANTY

For technical assistance, spare parts, or warranty claims, please contact Webasto customer support or an authorized Webasto service center. Refer to your purchase documentation for specific warranty terms and conditions.

Webasto Official Website: www.webasto-group.com

Always use genuine Webasto spare parts to ensure the safety and performance of your heater.

Related Documents - Air Top EVO 40

 <p>Operating Instructions Air Top Evo 40 55</p> <p>English</p>	<p>Webasto Air Top Evo 40 55 Operating Instructions</p> <p>Comprehensive operating instructions for the Webasto Air Top Evo 40 and Air Top Evo 55 vehicle heaters, covering safety, operation, fuel, maintenance, troubleshooting, and type approval information.</p>
 <p>Air Heaters Workshop Manual</p> <p>Air Top Evo 55 Air Top Evo 40 Air Top Evo 35</p>	<p>Webasto Air Top Evo 55 Workshop Manual</p> <p>Comprehensive workshop manual for Webasto Air Top Evo 55 and Air Top Evo 40 air heaters, covering installation, operation, troubleshooting, and repair procedures for petrol and diesel models.</p>
 <p>Marine Air Heaters Installation Instructions</p> <p>Air Top 2000 ST Air Top Evo 40 Air Top Evo 55</p>	<p>Webasto Air Top 2000 ST / Evo 40 / Evo 55 Marine Air Heater Installation Manual</p> <p>Comprehensive installation instructions for Webasto Air Top 2000 ST, Air Top Evo 40, and Air Top Evo 55 marine air heaters. Covers safety, regulations, installation procedures, and technical data for marine applications.</p>
 <p>Water Heaters Workshop Manual</p> <p>Thermo Top Evo</p> <p>Thermo Top Evo Diesel Thermo Top Evo Petrol</p>	<p>Webasto Thermo Top Evo Workshop Manual - Service and Repair Guide</p> <p>Comprehensive workshop manual for Webasto Thermo Top Evo petrol and diesel water heaters. Covers installation, operation, troubleshooting, servicing, and repair procedures for trained personnel.</p>
 <p>Air Top Installation Guide - AT2000STC</p>	<p>Webasto Air Top AT2000STC Installation Guide</p> <p>Comprehensive installation guide for the Webasto Air Top AT2000STC diesel air heater, covering general information, pre-installation considerations, step-by-step installation, electrical systems, fuel systems, ducting layouts, enclosing the heater, starting, maintenance, fault codes, and optional parts.</p>
 <p>PHEC System Installation & Operation Guide</p>	<p>Webasto PHEC System: Installation and Operation Guide</p> <p>Comprehensive installation and operation guide for the Webasto PHEC system, designed for heating water and air in camper trailers, caravans, and motorhomes. Provides essential technical information for installers and users.</p>
