AMK

Drive your comfort!

Service Manual (EN)

for AMK air suspension compressors

SERVICE INFORMATION
SAFETY INSTRUCTIONS

⚠ WARNING
INTENDED USE: This product is to be used exclusively for the purpose of filling and releasing pressure from air suspension units in cars or vans. The product may only be operated if it has been properly installed by trained specialists. The product is not intended for continuous operation and must be controlled with appropriate time or temperature monitoring. During operation, high air pressures are generated and may be dangerous if released suddenly. Therefore appropriate safety precautions must be taken when working on these components.

⚠ WARNING
WARNING: Use protective equipment, especially for feet, hands, eyes and ears. Comply with all relevant accident prevention regulations and national regulations.

⚠ WARNING
WARNING: When jacking the vehicle, make sure the correct jacking points are used. Consult the owner's manual or service manual or contact the vehicle dealer. To avoid serious injury or death it is absolutely necessary not to perform any work under a vehicle that has not been properly lifted and secured.

⚠ WARNING
WARNING: Burn hazard! The compressor could be hot from previous operation. Let it cool off before servicing.

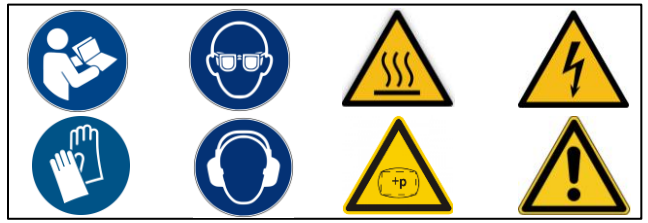
⚠ WARNING
WARNING: The air suspension system is under pressure. Prior to disassembly disconnect power and relieve pressure. Consult owner's manual on how to disconnect the battery.

⚠ CAUTION
CAUTION: Damage to the vehicle and air suspension system can be incurred if work is carried out in a manner other than specified in the instructions or in a different sequence.

⚠ **WARNING**: This product can expose you to chemicals including lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

⚠ Repair work on a vehicle's air suspension system may only be performed by qualified workshop personnel.

⚠ Use the diagnostic software of the car manufacturer and follow its instructions.



SERVICE INFORMATION
INTENDED USE

⚠ WARNING

This product may **only** be used for filling and venting air suspension units in vehicles. The product may only be operated when properly installed and exclusively by trained and qualified personnel, such as automotive mechatronics technicians and authorized workshops.

The product is not designed for continuous operation and must be controlled by the vehicle control unit with suitable time or temperature monitoring. High air pressures of up to 21 bar are generated during operation, which may be hazardous if released suddenly. Therefore, appropriate safety precautions must be taken when working on these components.

Intended use includes:

- Installation in vehicles equipped with factory-fitted or retrofitted air suspension systems
- Operation within the vehicle's specified pressure limits and control logic
- Maintenance and repair in accordance with these instructions and the vehicle manufacturer's specifications
- Use exclusively with ambient air; the use of other gases or liquids is not permitted.

SERVICE INFORMATION
PROHIBITED MISUSE

⚠ WARNING

The following uses are **NOT permitted** and may result in serious injury, death or product damage:

- **Use for purposes other than air suspension:**
  Not suitable for tire inflation, pneumatic tools, airbrush applications, air mattresses, or similar applications.
- **Operation without vehicle control or pressure limitation:**
  The compressor must not be connected manually or directly to a power supply.
- **Installation by unqualified personnel:**
  Installation may only be carried out by authorized automotive workshops or qualified automotive mechatronics technicians with appropriate training.
- **Continuous operation without monitoring:**
  Operating cycles beyond the intervals specified by the vehicle manufacturer may result in overheating and failure.
- **Operation outside the specified temperature or pressure limits:**
  Operation outside the temperature range of -40°C to +80°C or above the maximum operating pressure of 21 bar is not permitted.
- **Use with flammable gases or in potentially explosive atmospheres:**
  Suitable for use with ambient air only. Do not use in ATEX zones.
- **Tampering or modification:**
  No modifications may be made to electrical components, valves or mechanical parts. Unauthorized opening, disassembly, modification or removal of components is strictly prohibited.

Any use contrary to the intended use or any unauthorized modification may result in the loss of warranty or guarantee claims to the extent permitted by applicable law. The manufacturer shall not be liable for damage resulting from improper use, unauthorized modifications or failure to follow the instructions, to the extent permitted by applicable law.

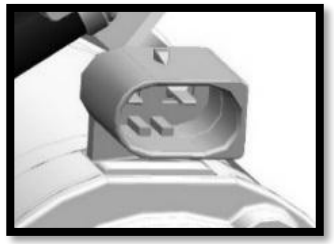
SERVICE INFORMATION
ELECTRICAL CONNECTION

⚠ WARNING

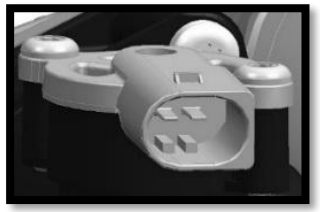
⚠ Do not allow dirt, dust, or water to enter the electrical connection (sockets and connectors).

⚠ If the connectors are corroded or damaged, replace them immediately to prevent short circuits or fire.

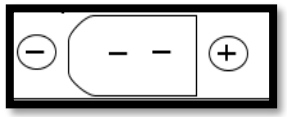
⚠ Electrical connection and protection must be carried out in accordance with the vehicle manufacturer's specifications and the applicable AMK product documentation.



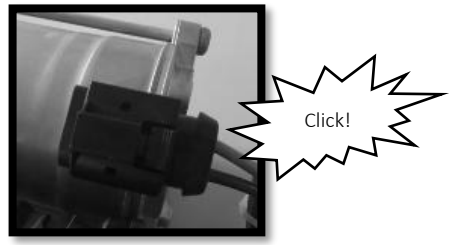
MOTOR



SOLENOID VALVE



POLARITY



PLUGS

Component	Description
MOTOR	Main drive of the compressor (DC or EC motor)
SOLENOID VALVE	Control valve for air outlet/venting
POLARITY	Ensure correct polarity (+/−), see labeling or drawing
CONNECTOR	Protect from dirt, dust, and moisture

SERVICE INFORMATION
COMPRESSOR MOUNTING POINTS

WARNING

⚠ Failure to observe the specified tightening torques may result in: Vibrations, noise, premature wear or compressor failure.

Tightening Torques (must be strictly observed!)

M6x12 mounting screw
(Mounting bracket to compressor):
10.5 ± 1 Nm

Decoupling point
(Compressor to vehicle):
11.5 ± 0.5 Nm

All other nuts/screws:
According to the manufacturer's specifications (see workshop manual)

SERVICE INFORMATION
VEHICLE SPECIFIC DECOUPLING KITS

⚠ CAUTION

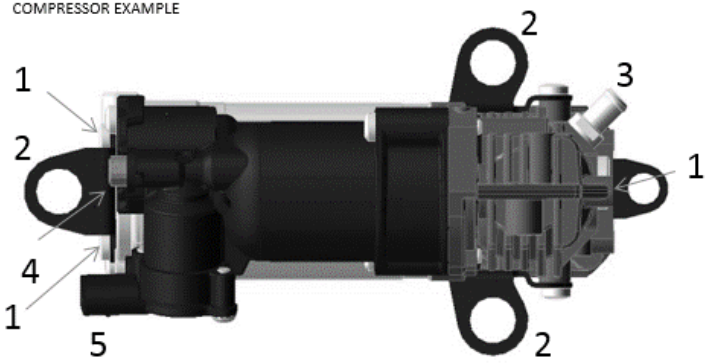
Follow the correct installation sequence of the decoupling components as shown in the figure.

Mercedes-Benz	BMW		Jaguar		Land Rover	
M-Class/GLE (W164+W166)	5 series touring (E61)	X5 series (E70)	XF (X250)	XJ (X351)	Discovery 3 / 4 (L319)	Range Rover (L322)
GL-Class/GLS (X164+X166)		X6 series (E71)		XJ E-Version I-Pace (X590)	Range Rover (L405 -MY2017)	
S-Class (W221)				X260 sb	Range Rover (L405 18MY / PHEV)	
CL-Class (C216)					Range Rover Sport (L320)	
R-Class (W251)					Range Rover Sport (L494 - MY2017)	
					Range Rover Sport (L494 18MY / PHEV)	
					Discovery (L462)	
					Velar (L560)	
					Defender (L663)	
Kit No.1:	**Kit No.3:**	**Kit No.4:**	**Kit No.5:**	**Kit No.2**	**Kit No.2:**	**Kit No.6:**
AMK#404684	**AMK#404685**	**AMK#404686**	**AMK#404814**	**AMK#404814**	**AMK#404814**	**AMK#404848**
⚠ Follow sequence of isolation kit components installation:						

SERVICE INFORMATION
PREPARATION BEFORE REPAIR

No.	IMPORTANT OPERATIONS TO BE PERFORMED	CHECKED
1	Inspect the entire air suspension system for air leakages (air struts, air springs, pipes, valve block, air connectors etc.). If necessary follow manufacturer's instructions for repair of broken components to avoid damage of compressor or loss of warranty.	
2	Inspect the entire electrical infrastructure of the air suspension system (relay, electrical wires, electrical connectors etc.). If necessary follow manufacturer's instructions for repair of broken components to avoid damage of compressor and loss of warranty.	
3	Start repair work only when you have read and understood all information required for repair.	
4	Use only spare parts approved by the vehicle manufacturer or AMK.	
5	Do not damage air lines and cables.	

COMPRESSOR EXAMPLE



1. Bracket Assembly Points
2. Isolation (Decoupling) Mounting Bracket
3. Air Intake
4. Air Outlet
5. Electrical Connection

SERVICE INFORMATION
REMOVAL OF OLD COMPRESSOR / COMPRESSOR ASSEMBLY

⚠ CAUTION

⚠ Inspect compressor to identify root cause of the compressor failure and breakdown.

- If there is corrosion in the air intake check air intake pipe and filter, as there might be water. If necessary, replace damaged components.
- If the compressor has a burning smell, check relay and electrical connections. If necessary, replace damaged components.
- If the compressor has a burning smell, check all components of the air system (air lines, air springs, struts, valve block) for leaks. If necessary, replace damaged elements.

Step-by-step instructions:

- Disconnect the power supply from the battery (Disconnect the negative terminal first. Refer to the vehicle owner's manual.)
- Release the pressure from the system (Using diagnostic software or the pressure relief valve.)
- Check that the system is depressurized (Using a pressure gauge or system diagnostics.)
- Disconnect the power cable from the compressor and the solenoid valve cable (Mark the connectors to ensure correct reconnection.)
- Disconnect the air lines from the compressor (Carefully loosen the fittings and be aware of any residual pressure.)
- Loosen and remove the fastening hardware between the vehicle and the compressor/assembly.
- Carefully remove the compressor/assembly (Pay attention to cable routing.)

Possible Damage Patterns and Corrective Actions:

Damage Pattern	Cause	Corrective Action
Corrosion at the air intake port	Water in the air intake line/filter	Check and replace the air intake line and filter. Eliminate the cause of water ingress.
Burning smell, melted or scorched connections	Defective relay, overload, short circuit	Check and replace the relay, electrical connections, and fuses.
Burning smell & compressor runs for an extended period	Air leak in the system (continuous operation)	Check all air system components, including air lines, air springs, air struts, and valve block, for leaks. Replace defective components.
Mechanical damage	Incorrect installation, missing decoupling	Check the decoupling kit and observe the specified tightening torques.

Compressor Components to Inspect:

1. Mounting points: Check for cracks and deformation.
2. Decoupling bracket: Check for wear and cracks.
3. Air intake port: Check for corrosion and contamination.
4. Air outlet port: Check for damage and proper sealing.
5. Electrical connection: Check for corrosion and signs of overheating or scorching.

SERVICE INFORMATION
INSTALLATION OF NEW COMPRESSOR

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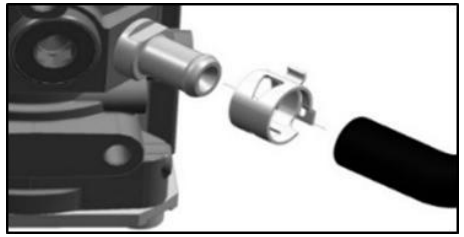
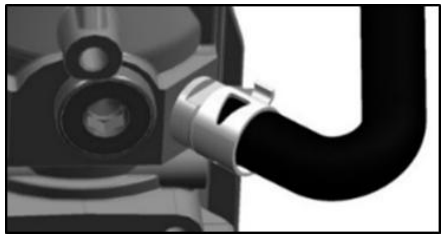
⚠ **CAUTION:** Perform steps as described on page 9, but in reverse sequence.

No.	IMPORTANT ACTIONS	NOTES	CHECKED
1	Do not remove any screws, air fittings, lines, or other accessories from the new compressor, as this may result in damage and void the warranty.	The compressor is preassembled and ready for installation.	
2	During the repair, no dirt, water, or grease must enter the air suspension system. Clean the air intake line.	Maintain a clean working environment and use protective covers.	
3	Use only replacement parts approved by the vehicle manufacturer or AMK.	Do not use aftermarket copies or untested parts.	
4	Do not damage or kink air lines or cables, or allow them to come into contact with sharp edges.	Route cables according to the workshop manual.	
5	The relay must be replaced in accordance with the vehicle manufacturer's service instructions.	The old relay may be the cause of the failure.	
6	The air filter must be replaced in accordance with the vehicle manufacturer's service instructions.	A contaminated filter may cause another failure.	
7	Check the decoupling kit for wear and replace it if necessary.	Cracks, hardening, or deformation require replacement.	
8	Observe the specified tightening torques using a torque wrench.	See table below.	

AIR INTAKE CONNECTION





⚠ Make sure there is no dust, dirt or water in the air intake pipe and filter

AIR OUTLET CONNECTION

⚠ Follow the instructions of the air-connector manufacturer (www.voss.de)

Designation VOSS	Hose diameter
Thread M8x1	4 mm
Thread M10x1	6 mm
Thread M12x1	8 mm

ENVIRONMENTALLY RESPONSIBLE DISPOSAL

♻ This product contains electrical/electronic components and **must not be disposed of with household waste**. Disposal must be carried out in accordance with local regulations.

Take the product to:

- An authorized collection point (recycling center)
- A take-back system for waste electrical and electronic equipment
- Your local waste management authority for further information

For returns to AMK:
Please contact our sales team for return instructions.

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