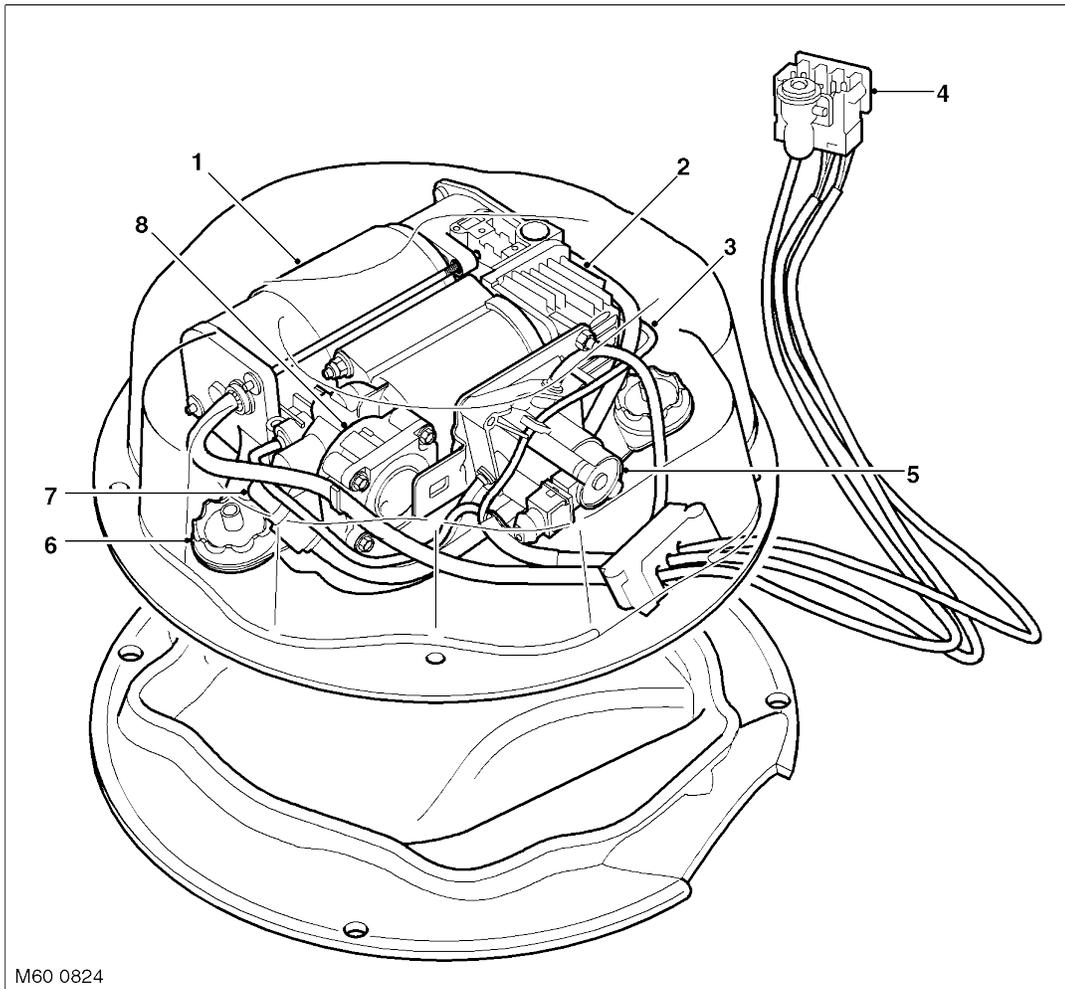


Air Supply Unit



M60 0824

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|--|-------------------------------|
| 1 Electric motor | 5 High pressure exhaust valve |
| 2 Compressor | 6 Rubber mounting (3 off) |
| 3 Compressor temperature sensor | 7 Exhaust hose |
| 4 Electrical and air supply connectors | 8 Exhaust pilot valve |

The air supply unit is located in a sealed housing which is mounted in the spare wheel well. The unit is secured with four bolts into threaded inserts in the vehicle floorpan. The unit is connected to the system via a single air pipe and harness wiring and multiplug. The air pipe from the unit passes through a grommet in the wheel well. It is important to ensure that this grommet is not disturbed and correctly installed. Incorrect fitment will allow water to enter the wheel well leading to possible damage to and failure of the air supply unit.

The unit comprises a piston compressor, a 12V electric motor, a solenoid operated exhaust pilot valve, a pressure relief valve and an air dryer unit.

The electric motor, compressor, air dryer and pressure limiting and exhaust valve are mounted on a frame which in turn is mounted on flexible rubber mountings to reduce operating noise.

Removal of the air supply unit does not require depressurisation of the air suspension system. The corner and the reservoir valves close, retaining the air in the system.

SUSPENSION

The electric motor drives a crank with an eccentric pin to which a connecting rod is attached. The connecting rod has a piston which fits in the bore of the compressor. Operation of the motor rotates the crank, moving the piston in the bore of the compressor. The compressor is attached with special bolts to the motor housing and sealed with an O-ring. The compressor has a temperature sensor located in its housing. The sensor measures the compressor temperature which is measured by the air suspension ECU.

Attached to the compressor is the air dryer which contains a silicate box for removing moisture from the compressed air. Air supplied to inflate the air springs passes through the air dryer. When the air springs are deflated, the exhaust air also passes through the air dryer, removing the moisture from the unit.

Attached to the end of the air dryer unit is a solenoid operated exhaust pilot valve. This valve is opened when the air springs are to be deflated.

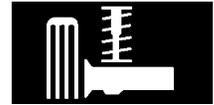
Located in the same housing as the exhaust pilot valve is a pressure limiting valve which, on systems without an external pressure relief valve, protects the air springs from over inflation. The valve is pneumatically operated, responding to air pressure applied to it to overcome pressure from a spring located behind the valve. The pressure limiting valve also operates when the exhaust pilot valve is opened, allowing air returning from the air springs to be exhausted.

The compressor is used to supply air pressure to the air suspension reservoir. The ECU monitors the pressure within the reservoir and, when the engine is running, maintains a pressure of:

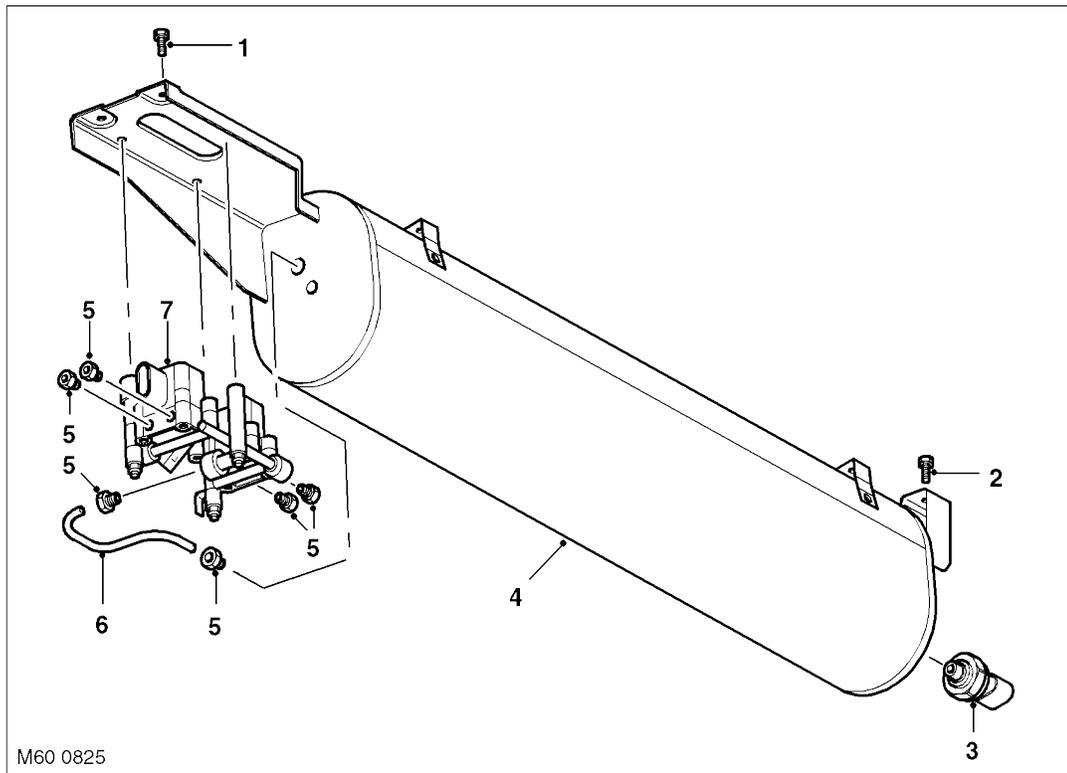
- 13.7 bar (199 lbf/in²), in systems without an external pressure relief valve
- 11.8 bar (171 lbf/in²), in systems with an external pressure relief valve

There are a number of conditions that will inhibit operation of the air suspension compressor. It is vitally important that these inhibits are not confused with a system malfunction. A full list of compressor inhibits is contained in the Air Suspension Control section.

A temperature sensor is located within the compressor. If the compressor temperature rises above set limits, the ECU will inhibit compressor operation.



Reservoir



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|------------------------------------|--|
| 1 Reservoir mounting screw – front | 5 Air hose connectors |
| 2 Reservoir mounting screw – rear | 6 Hose – reservoir pressure to valve block |
| 3 Air pressure sensor | 7 Valve block |
| 4 Reservoir | |

The air suspension reservoir is fabricated from aluminium and is located under the RH sill of the vehicle. The reservoir is secured with four bolts to the underside of the vehicle. The reservoir has an additional bracket on the forward facing end which provides the mounting for the valve block. A pressure sensor is screwed into the rear face of the reservoir. The sensor is connected to the air suspension ECU and measures the pressure within the reservoir. The pressure sensor cannot be replaced. If failure of the sensor occurs, the reservoir, complete with the sensor must be replaced.

The reservoir supplies pressurised air to the four air springs, via the valve block, to enable the air suspension system to carry out ride height changes.

Valve Block

The five way air suspension valve block is located under the RH sill of the vehicle, and is mounted forward of the air reservoir. The valve block is held in place on the air reservoir support bracket by 3 studs and secured by nuts. The studs are bonded into rubber mounts which isolates solenoid operation from the vehicle.

The valve block contains five solenoid operated valves which are controlled by the air suspension ECU. Four of the valves, known as corner valves, control the air flow to and from air springs, via the cross-link valves. The fifth valve, known as the reservoir valve, controls the air pressure supply from the reservoir to the air springs, via the corner valves and cross-link valves and also from the compressor to the reservoir.

Removal of the valve block will require full depressurisation of the air suspension system. The valve block is a non-seviceable item and should not be disassembled.