

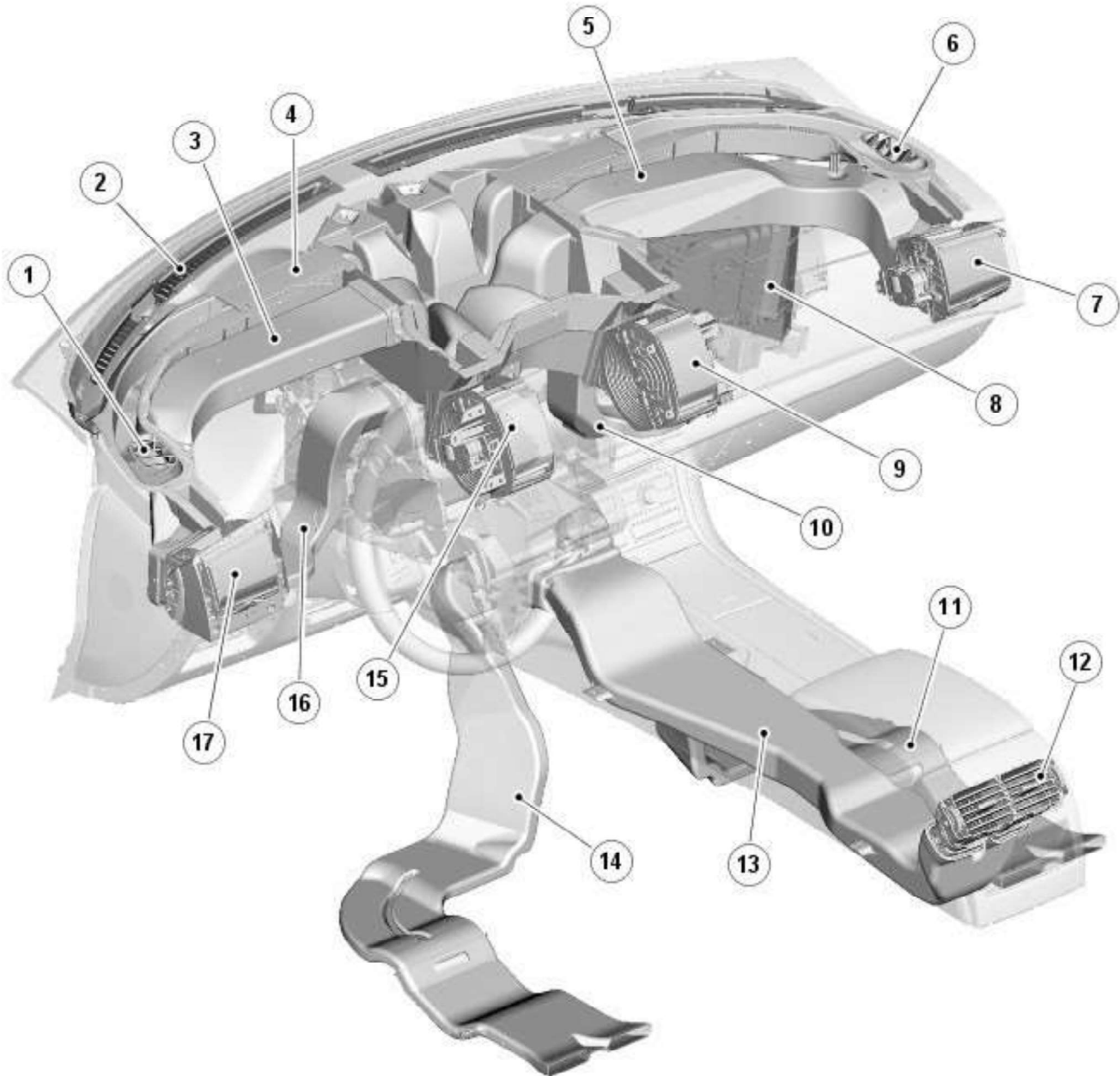
# Climate Control - Air Distribution and Filtering - Component Location

Description and Operation



NOTE: LHD (left-hand drive) vehicle shown, RHD (right-hand drive) vehicle similar.

Component Location



E98200

Item	Description
1	LH (left-hand) side window vent
2	Windshield vent
3	Driver's face level duct
4	Windshield/Side window vent duct
5	Front passenger's face level duct
6	RH (right-hand) side window vent
7	Front passenger's face level register

8	Pollen filter
9	RH inner face level register
10	Front passenger's footwell duct
11	RH rear footwell duct
12	Rear face level registers
13	Rear face level duct
14	LH rear footwell duct
15	LH inner face level register
16	Driver's footwell duct
17	Driver's face level register

# **Climate Control - Air Distribution and Filtering - Overview**

Description and Operation

## **Overview**

The air distribution and filtering system controls the distribution and quality of air supplied to the passenger compartment. The system comprises of a pollen filter and a number of ducts, vents and registers.

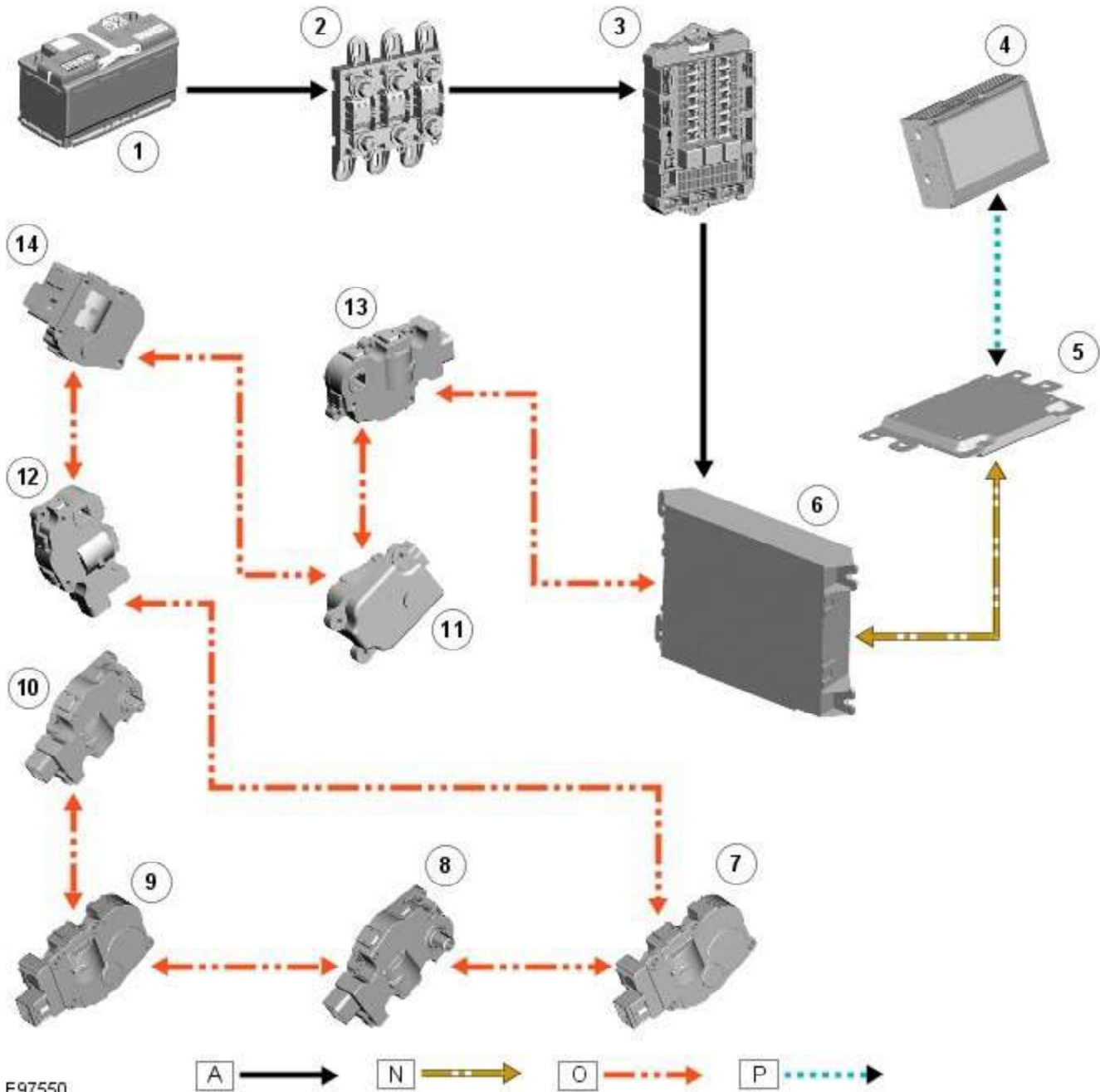
# Climate Control - Air Distribution and Filtering - System Operation and Component Description

Description and Operation

## Control Diagram



NOTE: **A** = Hardwired; **N** = Medium speed CAN (controller area network) bus; **O** = LIN (local interconnect network) bus; **P** = Media orientated system transport (MOST) ring.



E97550



Item	Description
1	Battery
2	BJB (battery junction box)
3	CJB (central junction box)
4	Touch screen display (TSD)
5	Information and entertainment module

6	<a href="#">ATC (automatic temperature control)</a> module
7	<a href="#">RH (right-hand)</a> outer face level register
8	<a href="#">RH</a> inner face level register
9	<a href="#">LH (left-hand)</a> inner face level register
10	<a href="#">LH</a> outer face level register
11	Face/Feet distribution stepper motor
12	<a href="#">RH</a> temperature blend stepper motor
13	Windshield (defrost) distribution stepper motor
14	<a href="#">LH</a> temperature blend stepper motor

## System Operation

### Face Level Registers

Operation of the face level registers is controlled by the [ATC](#) module, using [LIN](#) bus messages to the integral stepper motors. The four registers operate together in both the opening and closing phases.

The face level registers can be selected to run in one of two modes; 'automatic' or 'always open'. The mode is selected on the climate control screen of the TSD.

Refer to: [Navigation System \(415-01 Information and Entertainment System, Description and Operation\)](#).

In the automatic mode, operation of the face level registers is synchronized with the engine START/STOP button. When the engine starts the [ATC](#) module opens the registers. When the engine stops, the [ATC](#) module closes the registers.

If a face level register is fouled, when it receives an open or close request, the register concerned makes a number of attempts to reach the requested position. If the register still does not move, it is left in the fouled position. The remaining registers will continue to open and close as normal.

The automatic mode is disabled when the climate control system is off. The [ATC](#) module closes the registers if they are open in the automatic mode and the climate control system is selected off.

### Diagnostics

If a fault occurs with the face level registers, a [DTC \(diagnostic trouble code\)](#) is stored in the [ATC](#) module. The [DTC](#) can be read using the Jaguar approved diagnostic system. The Jaguar approved diagnostic system can also initiate a self test routine to check the operation of the face level registers.

Refer to: [Climate Control System \(412-00 Climate Control System - General Information, Diagnosis and Testing\)](#).

## Component Description

### Air Ducts

The air ducts distribute air from the heater assembly to the registers and vents in the instrument panel and the center floor console. Air ducts also direct air from the heater assembly into the front and rear footwells.

### Registers and Vents

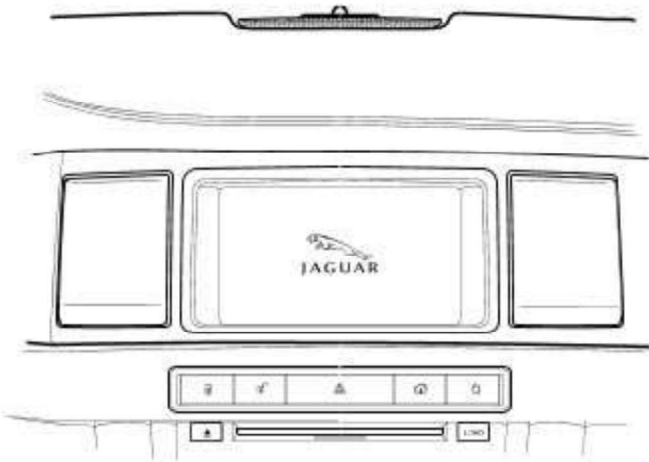
The registers control the flow and direction of air from the air ducts. The instrument panel contains four face level registers; one at each end and two mounted centrally. For the rear seat occupants, two registers are installed in the rear face of the center floor console. All of the registers incorporate vertical and horizontal directional vane adjustment and full air flow adjustment down to zero.

The four face level registers in the instrument panel each contain an integral stepper motor. The stepper motors enable the registers to rotate between the open and closed positions. In the open position, the registers have normal appearance and functionality. In the closed position, the registers present a smooth surface flush with the surrounding instrument panel.

The vents are fixed outlets. There are four vents in the upper surface of the instrument panel; one in each end to direct air onto the side windows and two along the front edge to direct air onto the windshield.

Central Face Level Registers

A



B



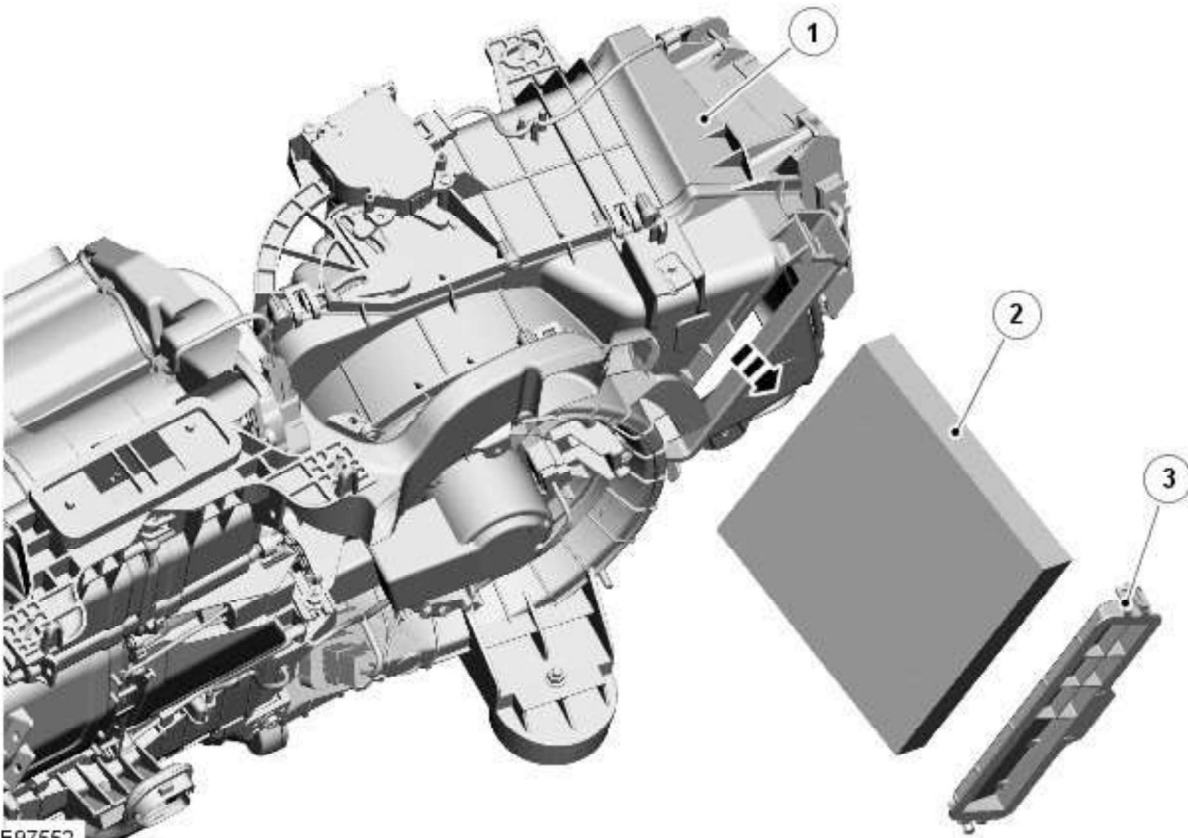
E97551

Item	Description
A	Registers closed
B	Registers open

### Pollen Filter



NOTE: LHD (left-hand drive) vehicle shown, RHD (right-hand drive) vehicle similar.



E97552

<b>Item</b>	<b>Description</b>
1	Air inlet duct
2	Pollen filter
3	Cover

The pollen filter removes odors and fine particles from fresh air entering the passenger compartment. The pollen filter is located in the air inlet duct, in the inlet to the blower. A cover on the underside of the air inlet duct provides access to the pollen filter for servicing.

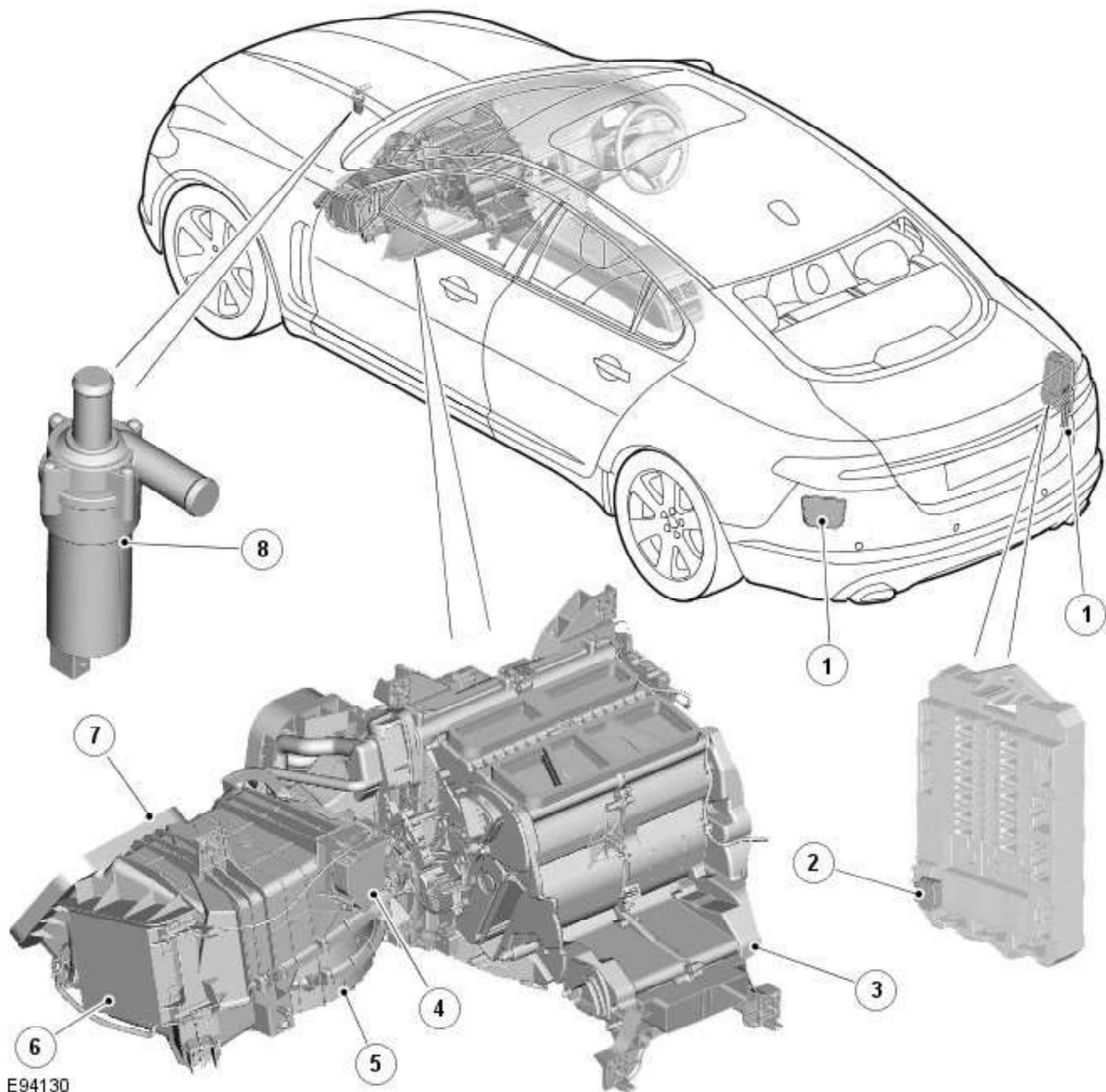
# Climate Control - Heating and Ventilation - Component Location

Description and Operation



NOTE: RHD (right-hand drive) vehicle shown, LHD (left-hand drive) vehicle similar.

Component Location



E94130

Item	Description
1	Ventilation outlet
2	Blower relay (on RJB (rear junction box))
3	Heater assembly
4	Blower control module
5	Blower
6	ATC (automatic temperature control) module
7	Air inlet duct
8	Auxiliary coolant pump
<b>Comments:</b>	
All except 3.0L vehicles; 5.0L version shown, 3.0L diesel version similar.	



# Climate Control - Heating and Ventilation - Overview

Description and Operation

## Overview

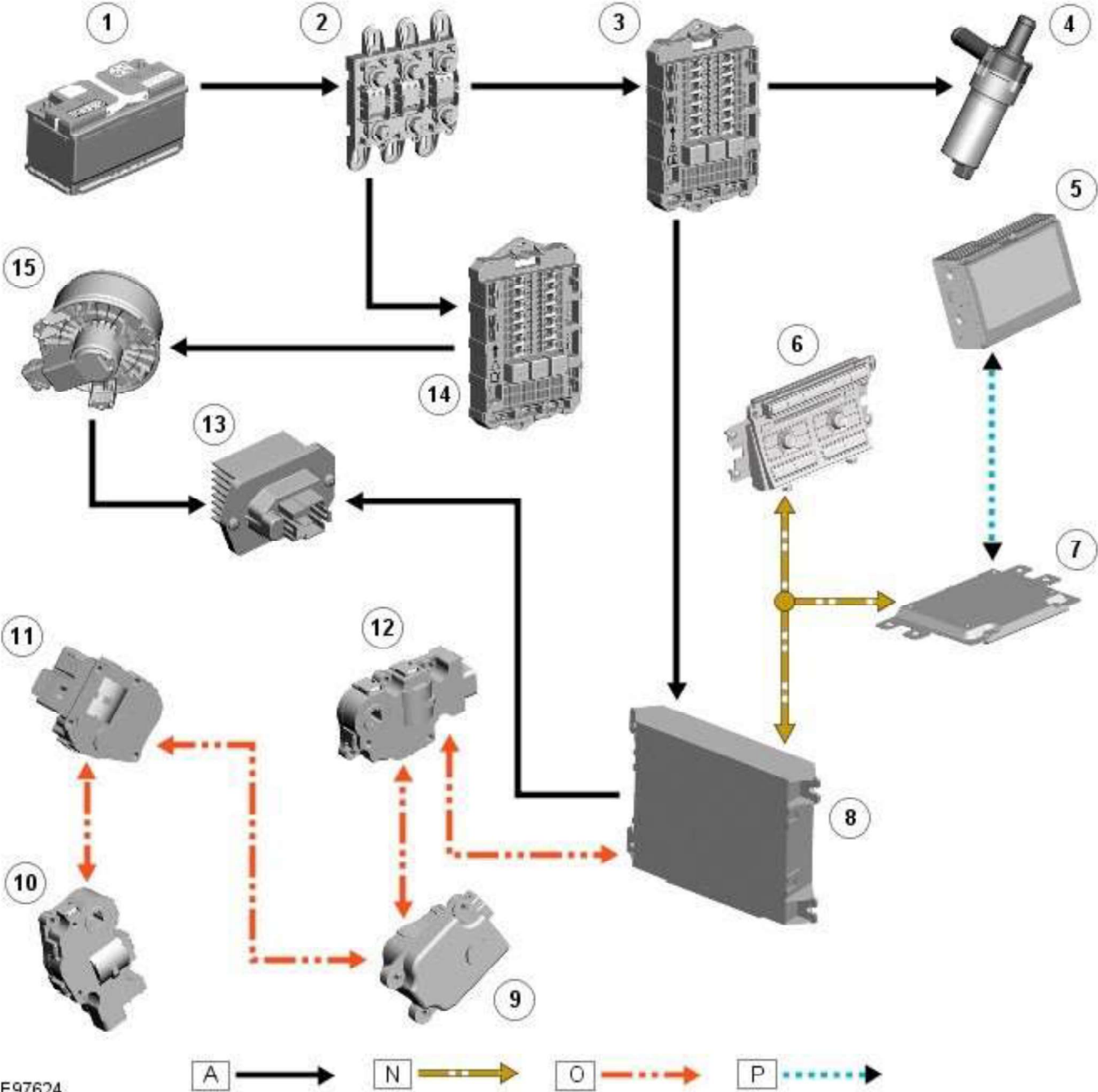
The heating and ventilation system controls the temperature and flow of air supplied to the passenger compartment. The system is a dual zone automatic system, which can provide different temperature settings for the [LH \(left-hand\)](#) and [RH \(right-hand\)](#) sides of the passenger compartment.

# Climate Control - Heating and Ventilation - System Operation and Component Description

Description and Operation

## Control Diagram

**△** NOTE: **A** = Hardwired; **N** = Medium speed CAN (controller area network) bus; **O** = LIN (local interconnect network) bus; **P** = Media orientated system transport (MOST) ring.



E97624

Item	Description
1	Battery
2	<a href="#">BJB (battery junction box)</a>
3	<a href="#">CJB (central junction box)</a>
4	Auxiliary coolant pump
<b>Comments:</b> all except 3.0L vehicles; 5.0L version shown, 3.0L diesel version similar	

5	Touch screen display (TSD)
6	Integrated control panel
7	Information control module
8	ATC (automatic temperature control) module
9	Face/Feet distribution stepper motor
10	RH (right-hand) temperature blend stepper motor
11	LH (left-hand) temperature blend stepper motor
12	Windshield (defrost) distribution stepper motor
13	Blower control module
14	RJB (rear junction box)
15	Blower

## System Operation

Operation of the heating and ventilation system is controlled by the [ATC](#) module. Refer to: [Control Components](#) (412-01 Climate Control, Description and Operation).

The system can be operated in automatic or manual mode, with temperature settings selected using the switches on the integrated control panel.

When the engine is running, coolant is constantly circulated through the heater core by the engine coolant pump and the auxiliary coolant pump. Where fitted, the auxiliary coolant pump is energized by the [CJB](#) on receipt of medium speed [CAN](#)\_bus signals from the [ATC](#) module. The [CJB](#) broadcasts auxiliary coolant pump status over the medium speed [CAN](#)\_bus for use by other vehicle systems.

The blower is supplied with power by the blower relay on the [RJB](#) and connected to ground via the blower control module. The blower control module regulates the voltage across the blower motor to control blower speed. The voltage set by the blower control module is controlled by a [PWM \(pulse width modulation\)](#) signal from the [ATC](#) module. The [ATC](#) module uses a feedback signal from the blower control module to monitor blower speed. Refer to: [Control Components](#) (412-01 Climate Control, Description and Operation).

## Component Description

### Heater Assembly

The heater assembly controls the temperature and flow of air supplied to the air distribution ducts. The heater assembly is mounted on the vehicle centerline, between the instrument panel and the engine bulkhead.

The heater assembly consists of a casing that contains an [A/C \(air conditioning\)](#) evaporator, a heater core, two air distribution control doors and two temperature blend control doors. On 2.7L diesel vehicles, the heater assembly also contains an electric booster heater.

Refer to: [Electric Booster Heater](#) (412-02 Auxiliary Climate Control, Description and Operation).

Mounted on the heater casing are four stepper motors. Each of the stepper motors is connected to either an air distribution control door or a temperature blend control door.

The [A/C](#) evaporator is part of the [A/C](#) system.

Refer to: [Air Conditioning](#) (412-01 Climate Control, Description and Operation).

The heater core provides the heat source to warm the air supplied to the passenger compartment. The heater core is an aluminum two pass, fin and tube heat exchanger, and is installed across the width of the heater housing. Two aluminum tubes attached to the heater core extend through the engine bulkhead and connect to the engine cooling system. For additional information, refer to:

Engine Cooling (303-03A, Description and Operation),  
[Engine Cooling](#) (303-03B Engine Cooling - V6 3.0L Petrol, Description and Operation),  
 Engine Cooling (303-03C, Description and Operation).

### Air Inlet Duct

The air inlet duct connects the fresh air inlet in the engine bulkhead to the heater assembly. The air inlet duct is installed behind the instrument panel on the passenger side.

The air inlet duct consists of a casing that contains a pollen filter, an air inlet door, a blower and a blower control module. A recirculation air inlet is incorporated into the casing. A servo motor is mounted on the casing and connected to the air inlet door, to allow selection between fresh and recirculated air.

Refer to: [Control Components](#) (412-01 Climate Control, Description and Operation).

The pollen filter is part of the air distribution and filtering system.

Refer to: [Air Distribution and Filtering](#) (412-01 Climate Control, Description and Operation).

The blower regulates the volume of air flowing through the air inlet duct to the heater assembly. The blower consists of an open hub, centrifugal fan and an electric motor.

The blower control module regulates the power supply to the blower motor. The blower control module is installed in the air

inlet duct downstream of the blower, where any heat generated during operation is dissipated by the air flow.

### **Auxiliary Coolant Pump**

On all vehicles except 3.0L, an auxiliary coolant pump is installed on the rear right side of the radiator housing, in the return line from the heater core. The auxiliary coolant pump is an electric pump that boosts the flow of coolant through the heater core.

### **Ventilation Outlets**

The ventilation outlets allow the free flow of air through the passenger compartment. The outlets are installed in the LH and RH rear quarter panels, below the rear lamps. Each ventilation outlet consists of a grille covered by a soft rubber flap, and is effectively a non-return valve. The flaps open and close automatically depending on the pressure differential between the air inside and outside the vehicle.