

## Delanair Mark 3 Information

These were fitted from VIN 139052 Model year 1987 but we have seen them in cars as early as VIN136xxx. Jaguar state the model year at 1988 so always check which you have before ordering parts and if yours is a Mk3 make sure the parts person gives you bits for post 139052. The Mk III units are most notable for the odd shaped computer ECU mounted on the Right hand side of the Delanair unit On no account should any voltages be applied directly to the ECU when tracing faults nor must any connectors be allowed to short with each other. The result would be a fried ECU, and would leave you in a very unhappy mood for weeks as they cost over £600.00 to replace.

Here is some useful technical information we have collected over the years

PVC pipe work for vacuum operated servos.

| Colour | Feeds                     | vacuum       | no vacuum   |
|--------|---------------------------|--------------|-------------|
| Black  | the centre vent           | opens vent   | Vent closes |
| Red    | Water valve in engine bay | Closes it    | Opens it    |
| Blue   | Re-circulation flaps      | recalculates | Outside air |
| Green  | Windscreen and Side vents | Closes them  | Opens them  |

### Upper Flap Position Motor

This is on the right hand side and is accessed by removal of the instrument cluster Right hand drive or glove box Left hand drive it's the 75mm (3") rectangular box and is held in place by two 8mm? bolts the front one is a breeze to undo compared to the rear one which is really close to the firewall but it is possible (we haven't broken one yet) best to make sure the Upper Flap Position Motor is faulty before removing it. You can run the motor but heed this warning – if you let it run to the furthest extent of its travel, that's were it will stay as it jams and then you've gotta rip it out.

You can test the motor using a PP3 (9volt) battery with the wiring unplugged from the motor

A sticking Upper Flap Position Motor or Flap will causes no air on the windscreen when Defrost (DEF) is selected.

### Upper Flap Position Feedback Potentiometer

This is on the left side opposite the Upper Flap Position Motor and can be accessed from the void left after removing the glove box (RHD) /Instrument pack.(LHD)

### Centre vent

The centre vent air flap is controlled by a vacuum solenoid, once the Upper Flap Position Motor has placed its flap to full cooling setting. The feedback potentiometer signals the ECU to apply vacuum to the solenoid to open the vent.

### Some simple tests

Remove one fan connector (pull plug or fuse) and switch system to defrost mode and confirm that the other fan is working then pull the tested fans connection and repeat to confirm both are running properly. Service wise the biggest problem with these fans is the brushes; just get some roughly the right size but bigger than the originals and cut them down to fit

If you disconnect both blower motors, you can hear both the servo motors whirring in response to the temperature setting. Just select Manual (Left Hand Control pulled out and alternate the control between

hot to cold and by sliding the blue/red AIR control back and forth. For those who asked "What does the control below the radio do" it biases the top flap position only, this varies the temperature of the air coming out of the side and centre vents. Moving it to the blue (left) makes the air cooler at these vents than that in the foot wells. Moving it to the red (Right makes it the same temperature as the foot well vents.

A good indication that the ECU is controlling the system correctly is when the car is cold, say in the morning, you jump in, switch the control to auto, heat to hottest and turn the ignition switch to the ACC position. You should hear the fans start briefly and the vents motors spin. This is correct behaviour as a cold heater matrix is detected by a sensor on the flow pipe and tells the ECU not to activate the system until there is sufficient heat in the matrix – this only happens in the AUTO Mode.

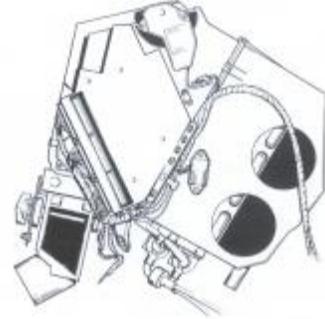
| More in depth test procedure<br>Make sure you start with a cold engine  |   |
|---|---|
| Action  | Test result   |
| Switch right knob to OFF. And start the engine. Go through the first tests items as quick as possible to avoid getting the engine to warm.  | <p>Check Re-circulation flaps open after starting they are above drivers &amp; passengers feet.</p> <p>Check the compressor clutch is disengaged</p> <p>Check the Condensers blower fan is not running.</p> <p>Check the interior blowers aren't running.</p> |
| Switch off engine and remove key  | Re-circulation flaps should close.  |
| Ignition switch set to ACC .Temperature control knob to IN and set at 85F. Right knob positioned to NORM or AUTO on some cars   | A/C Condenser fan should start.   |
| Start engine.   | <p>Blower fans should be stopped.</p> <p>A/C pump should start cycling on and off, and the Condenser fan should run.</p> <p>The Blower fans should start after a few minutes when the coolant temperature has risen.</p>                                      |
| Pull out the temperature control knob to select manual mode and set it to 75F. Allow coolant to heat. Then turn temperature control knob towards 85F.   | The air should be warm from the lower vents.  |
| Turn temperature control knob toward the halfway mark between 65F and centre  | The air should be cool from the lower vents.  |
| Move the AIR slider to Red. Open one of the side vents and feel the air temperature.  | The air from the Side vent should be comparable in temperature as air from the lower vents.   |
| Move slider over towards Blue.  | The air from the side vent should get progressively cooler, compared with the lower vent; the Centre Vent may open during this test.  |
| Turn the temperature control knob more towards cold.  | The centre vent should open and cool air should be felt at both centre and lower vents  |
| Turn fully to 65F   | The re-circulation flaps should open.   |
| Bring the air temperature in the car to approximately 18-20C. Set the temperature control knob to IN and rotate to a setting where the fan speed is at its slowest. This will ideally be around 75F. Locate the in car temperature sensor (above the glove box lock). Using a heat source increase the temperature of the air entering the sensors opening. | The fans should quickly pick up speed and cold air will come out of the vents. Remove the heat source and the fans should slowly return to the original speed as the sensor cools   |
| Stop the engine   | Go in and either start worrying about which bits broken or pour your self a beer to celebrate having a working AC System.   |

**Delanair MK III (3) Air distribution Unit**

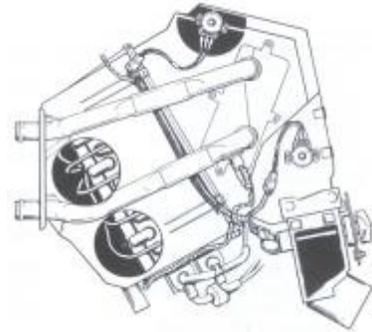
**Component Layout**

Click the Image to see a larger image with component identification legend

Right Hand side of Delanair unit



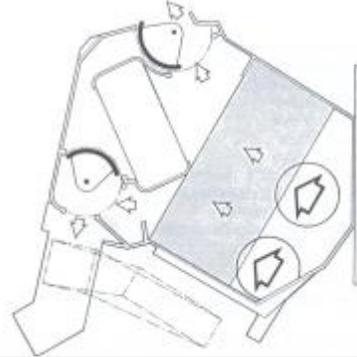
Left Hand side of Delanair unit



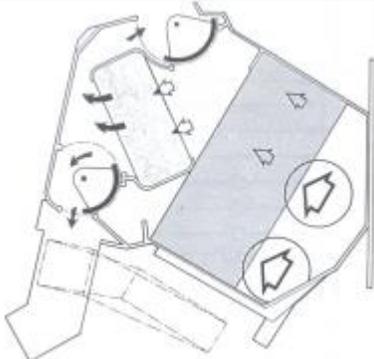
**Air delivery mode selection flap positions**

Click the Image to see a larger image with component identification legend

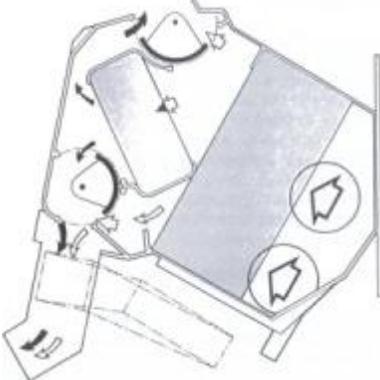
Full Cooling Mode flap positions



Full Heat mode flap positions



Air Blend mode flap positions



Defrost mode flap positions

