

## Jaguar Hints And Tips

### Jaguar XJ range 1995

#### Fuel, Emission Control and Engine Management

##### Mass Air flow sensor – P0101

**Model:** Jaguar XJ Range 1995

**Complaint:** Due to Fault Code P0101 there will be a problem with the vehicle possibly relating to the MAFS range or performance fault.

**Remedy:** Check the fault, run the engine and read the PID 10h if this is correct then proceed to step 7 of the test below.

Check for inlet air leak, if this is found then repair and proceed to step 7 of the test below.

Check for an inlet or exhaust blockage, if this is found then repair and proceed to step 7 of the test below.

With the ignition off check the harness and connector condition and reliability. If this is faulty then repair and proceed to step 7 of the test below.

If no faults are found then proceed to point 1 of test below.

Test:

1. Check the harness stability PI 116/002 to ECM pin P1 105/004. If this gives a positive result then proceed to step 2. If the circuit is open then locate the wiring fault and fix, reconnect the harness and proceed to step 7.
2. Check the harness stability PI 116/003 to ECM pin P1 105/029. If this gives a positive result then proceed to step 3. If the circuit is open then locate the wiring fault and fix, reconnect the harness and proceed to step 7.
3. Check the harness insulation PI 116/002 to ground. If this gives a positive result then proceed to step 4. If there is a short circuit then locate the wiring fault and fix, reconnect the harness and proceed to step 7.
4. Check the 12V +ve supply to PI 116/001 and continuity PI 116/003 to ground. If this gives a positive result then proceed to step 5. If the result is incorrect then locate the wiring fault and fix, reconnect the harness and proceed to step 7.
5. Check the throttle position and read PID 11h. If this gives a positive result then proceed to step 6. If the result is incorrect then re-calibrate the throttle and proceed to step 7.
6. Check the MAFS. If this gives a positive result then proceed to step 7. If the result is incorrect then repair or renew the MAFS, re-connect the harness and proceed to step 7.
7. Clear the fault code and to verify that the fault is cleared perform the service drive cycle. If this gives a positive result then stop. If the fault is still present then proceed to step 8.
8. Repeat the diagnostic procedure, if this gives a positive result then stop.

##### Mass Air Flow Sensor – P0102

**Model:** Jaguar XJ Range 1995

**Complaint:** Due to Fault Code P0102 there will be a problem with the vehicle possibly relating to the MAFS low input fault.

**Remedy:** Check the fault and run the engine – read PID 10h, if this is correct then proceed to step 6 of the test below.

Check for an inlet or exhaust blockage, if this is found then fix and proceed to step 6 of the test below.

With the ignition off check the harness and connector condition and reliability, if this is faulty then

fix and proceed to step 6 of the test below.  
If no faults are found then proceed to step 1 of the test below.

Test:

1. Check the harness continuity PI 116/002 to ECM pin PI 105/004. If this gives a positive result then proceed to step 2. If the circuit is open then locate the wiring fault and fix, reconnect the harness and proceed to step 6.
2. Check the harness continuity PI 116/003 to ECM pin PI 105/029. If this gives a positive result then proceed to step 3. If the circuit is open then locate the wiring fault and fix, reconnect the harness and proceed to step 6.
3. Check the harness insulation PI 116/002 to ground. If this gives a positive result then proceed to step 4. . If there is a short circuit then locate the wiring fault and fix, reconnect the harness and proceed to step 6.
4. Check the 12V +ve supply to PI 116/001 and continuity PI 116/003 to ground. If this gives a positive result then proceed to step 5. If the result is incorrect then locate the wiring fault and fix, reconnect the harness and proceed to step 6.
5. Check the MAFS. If this gives a positive result then proceed to step 6. If the result is incorrect then repair or renew the MAFS, re-connect the harness and proceed to step 6.
6. Clear the fault code and to verify the fault has cleared perform the service drive cycle. If this gives a positive result then stop. If the fault is still present then proceed to step 7.
7. Repeat the diagnostic procedure. If this gives a positive result then stop.

### **Mass Air Flow Sensor – P0103**

**Model:** Jaguar XJ Range 1995

**Complaint:** Due to Fault Code P0102 there will be a problem with the vehicle possibly relating to the MAFS high input fault.

**Remedy:** Check fault and run engine, read PID 10h if this is correct proceed to step 3 of the test below.

With the ignition off check harness and connector condition and reliability, if a fault occurs then fix and proceed to step 3 of the test below.

If no faults are found then proceed to step 1 of the test below.

Test:

1. Check the harness continuity PI 116/003 to chassis ground. If this gives a positive result then proceed to step 2. If the circuit is open then locate the wiring fault and fix, reconnect the harness and proceed to step 3.
2. Check the MAFS. If this gives a positive result then clear the fault code and proceed to step 3. If the result is incorrect then repair or renew the MAFS, re-connect the harness and proceed to step 3.
3. Perform the service drive cycle in order to check the fault has cleared. If this gives a positive result then stop. If the fault is still present then proceed to step 4.
4. Repeat the diagnostic procedure. If this gives a positive result then stop.

### **Air Intake Sensor – P0112/P0113**

**Model:** Jaguar XJ range 1995

**Complaint:** Fault code P0112 can occur due to an IAT low input fault. Fault code P0113 can occur due to an IAT high input fault.

**Remedy:** Read the PID 0Fh and check to see if it is in range, if this is correct then proceed to step 4 of the test below.

With the ignition off check harness and connector condition and reliability, if a fault occurs then fix and proceed to step 4 of the test below.

If no faults are found then disconnect the IAT and proceed to step 1 of the test below.

Test:

1. Check the harness continuity PI 105/030 to PI 106/002. If this gives a positive result then proceed to step 2. If the circuit is open then locate the wiring fault and fix, reconnect the harness and proceed to step 4.
2. Check the harness continuity PI 106/001 to PI 105/001. If this gives a positive result then proceed to step 3. If the circuit is open then locate the wiring fault and fix, reconnect the harness and proceed to step 4.
3. Check the resistance of the sensor within its limits. If this gives a positive result then clear all fault codes and proceed to step 4. If this gives a negative result then fit a new IAT sensor; re-connect the harness and proceed to step 4.
4. In order to check the fault has cleared perform the service drive cycle. If this gives a positive result then stop. If the fault is still present then proceed to step 5.
5. Repeat the diagnostic procedure. If this now gives a positive result then stop.

### **Engine Coolant Temperature Sensor – P0116**

**Model:** Jaguar XJ Range 1995

**Complaint:** Fault code P0116 will be most likely set due to a fault in the ECT Range or Performance.

**Remedy:** Firstly turn the ignition off, next check the harness and connector condition and reliability, if a fault occurs then fix and proceed to step 2 of the test below. If no faults are found then proceed to step 1 of the test below.

Test:

1. In order to check the operation firstly remove the thermostat. If this gives a positive result then proceed to step 2. If the result is incorrect then fit a new thermostat and proceed to step 2.
2. In order to check if the fault has been cleared perform the service drive cycle. If this gives a positive result then stop. If the fault is still present then proceed to step 3.
3. Repeat the diagnostic procedure. If this now gives a positive result then stop.

### **Engine Coolant Temperature Sensor – P0117**

**Model:** Jaguar XJ Range 1995

**Complaint:** Fault Code P0117 will most likely be set due to a low input fault in the ECT.

**Remedy:** Read PID 05H and check if it is in range, if it is correct then go to step 4 of the test below.

With the ignition turned off check the harness and connector condition and reliability, if a fault occurs then fix and proceed to step 4 of the test below.

If no faults are found then disconnect the ECT sensor and proceed to step 1 of the test below.

Test:

1. Check the harness continuity PI 105/031 to PI 107/002. If this gives a positive result then proceed to step 2. If the circuit is open then locate the wiring fault and fix, reconnect the harness and proceed to step 4.
2. Check the harness continuity PI 107/001 to PI 105/014. If this gives a positive result then proceed to step 3. If the circuit is open then locate the wiring fault and fix, reconnect the harness and proceed to step 4.
3. Check the resistance of the sensor within its limits. If this gives a positive result then proceed to step 4. If a negative result occurs then renew the sensor, re-connect the harness and move on to step 4.
4. In order to check if the fault has been cleared perform the service drive cycle. If this gives a positive result then stop. If the fault code is still present then proceed to step 5.
5. Repeat the diagnostic procedure. If this now gives a positive result then stop.

### **Engine Coolant Temperature Sensor – P0118**

**Model:** Jaguar XJ Range 1995

**Complaint:** Fault code P0118 will most likely be set due to a high input fault in the ECT.

**Remedy:** Read PID 05H and check if it is in range, if it is correct then go to step 4 of the test below.

With the ignition turned off check the harness and connector condition and reliability, if a fault occurs then fix it and proceed to step 4 of the test below.

If no faults are found then disconnect the ECT sensor and proceed to step 1 of the test below.

Test:

1. Check the harness continuity PI 105/031 to PI 107/002. If this gives a positive result then proceed to step 2. If the circuit is open then locate the wiring fault and fix, reconnect the harness and proceed to step 4.
2. Check the harness continuity PI 107/001 to PI 105/014. If this gives a positive result then proceed to step 3. If the circuit is open then locate the wiring fault and fix, reconnect the harness and proceed to step 4.
3. Check the resistance of the sensor within its limits. If this gives a positive result then proceed to step 4. If a negative result occurs renew the sensor, reconnect the harness and proceed to step 4.
4. Clear the fault code and in order to check the fault code has cleared perform the service drive cycle. If this gives a positive result stop. If the fault is still present then proceed to step 5.
5. Repeat the diagnostic procedure. If this now gives a positive result then stop.

### **Engine Coolant Temperature Sensor – P0125**

**Model:** Jaguar XJ Range 1995

**Complaint:** Fault code P0125 will most likely be set due to an excessive time to enter closed loop fuel control in the ECT.

**Remedy:** With the ignition turned off check the harness and connector condition and reliability, if a fault occurs then fix it and proceed to step 2 of the test below.

If no faults are found then remove the thermostat and proceed to step 1 of the test below.

Test:

1. To check the operation; remove the thermostat. If this gives a positive result then proceed to step 2. If this gives a negative result then fit a new thermostat and go to step 2.
2. In order to check the fault code has cleared perform the service drive cycle. If this gives a positive result then stop. If the fault is still present then proceed to step 3.
3. Repeat the diagnostic procedure. If this now gives a positive result then stop.

### **Throttle Position – P0121**

**Model:** Jaguar XJ range 1995

**Complaint:** Fault code P0121 will most likely be set due to a fault in the TP Range or Performance.

**Remedy:** Read PID 11H and check that the values are correct when the throttle is held fully open or closed. If this is accurate then proceed to step 8 of the test below.

Switch off the ignition.

With the ignition turned off check the harness and connector condition and reliability, if a fault occurs then fix it and proceed to step 8 of the test below.

If no fault is found then disconnect the TP sensor, switch the ignition back on and go to step 1 of the test below.

Test:

1. Check 5v +ve at pin PI 118/003 and 0V at pin PI 118/001. If this gives positive results then switch off the ignition and go to step 2. If the results are incorrect then locate and fix the wiring fault, re-connect the harness and go to step 8.
2. Check harness continuity PI 118/003 to PI 105/011. If this gives a positive result then go to step 3. If the circuit is open then locate and fix the wiring fault, re-connect the harness and go to step 8.
3. Check harness continuity PI 118/002 to PI 105/012. If this gives a positive result then go to step 4. If the circuit is open then locate and fix the wiring fault, re-connect the harness and go to step 8.
4. Check harness continuity PI 118/001 to PI 105/007. If this gives a positive result then go to step 5. If the circuit is open then locate and fix the wiring fault, re-connect the harness and go to step 8.
5. Check harness insulation PI 118/002 to PI 118/001. If this gives a positive result then go to step 6. If the circuit is open then locate and fix the wiring fault, re-connect the harness and go to step 8.
6. Between the TP terminals 1 and 2 connect a multi-metre. Slowly move the wiper arm through its whole range whilst checking for a smooth response in metre resistance reading. If this gives a positive result go to step 7. If the results are incorrect then either repair the TP sensor or install a new one. Re-connect the harness and go to step 8.
7. Check for an inlet or an exhaust blockage. If it is clear then fit a new TP sensor, re-connect the harness and go to step 8. If it is blocked then clear the blockage and go to step 8.
8. Clear the fault code. In order to check if the fault code has been cleared perform the service drive cycle. If this gives a positive result then stop. If the fault is still present then go to step 9.
9. Repeat the diagnostic procedure. If it now gives a positive result then stop.

### Throttle Position – P0122

**Model:**Jaguar XJ Range 1995

**Complaint:**Fault code P0122 will most likely be set due to a low input fault in the TP.

**Remedy:**Read PID 11H and check the values are correct when the throttle is fully open or closed. If this is correct then go to step 8 of the test below.

Switch off the ignition.

With the ignition turned off check the harness and connector condition and reliability, if a fault occurs then fix it and proceed to step 8 of the test below.

If no fault is found then disconnect the TP sensor, switch the ignition back on and go to step 1 of the test below.

Test:

1. Check 5V +ve at pin PI 118/003 and 0V at pin PI 118/001. If this gives positive results then switch off ignition and go to step 2. If the circuit is incorrect then locate and fix the wiring fault, re-connect the harness and go to step 8.
2. Check harness continuity PI 118/003 to PI 105/011. If this gives a positive result then go to step 3. If the circuit is open then locate and fix the wiring fault, re-connect the harness and go to step 8.
3. Check harness continuity PI 118/002 to PI 105/012. If this gives a positive result go to step 4. If the circuit is open then locate and fix the wiring fault, re-connect the harness and go to step 8.
4. Check harness continuity PI 118/001 to PI 105/007. If this gives a positive result go to step 5. If the circuit is open then locate and fix the wiring fault, re-connect the harness and go to step 8.
5. Check harness insulation PI 118/002 to PI 118/001. If this gives a positive result go to step 6. If there is a short circuit then locate and fix the wiring fault, re-connect the harness and go to step 8.
6. Between the TP terminals 1 and 2 connect a multi-metre. Slowly move the wiper arm through

its whole range whilst checking for a smooth response in metre resistance reading. If this gives a positive result go to step 7. If the results are incorrect then either repair the TP sensor or install a new one. Re-connect the harness and go to step 8.

7. Check for an inlet or an exhaust blockage. If it is clear then fit a new TP sensor, re-connect the harness and go to step 8. If it is blocked then clear the blockage and go to step 8.

8. Clear the fault code. In order to check if the fault code has been cleared perform the service drive cycle. If this gives a positive result then stop. If the fault is still present then go to step 9.

9. Repeat the diagnostic procedure. If it now gives a positive result then stop.

### **Throttle Position – P0123**

**Model:** Jaguar XJ Range 1995

**Complaint:** Fault code P0123 will most likely be set due to a high input fault in the TP.

**Remedy:** Read PID 11H and check the values are correct when the throttle is fully open or closed. If this is correct then go to step 8 in the test below.

Switch off the ignition.

With the ignition turned off check the harness and connector condition and reliability, if a fault occurs then fix it and proceed to step 8 in the test below.

If no fault is found then disconnect the TP sensor, switch the ignition back on and go to step 1 of the test below.

Test:

1. Check 5V +ve at pin PI 118/003 and 0V at pin PI 118/001. If this gives positive results then switch off ignition and go to step 2. If the circuit is incorrect then locate and fix the wiring fault, re-connect the harness and go to step 8.

2. Check harness continuity PI 118/003 to PI 105/011. If this gives a positive result then go to step 3. If the circuit is open then locate and fix the wiring fault, re-connect the harness and go to step 8.

3. Check harness continuity PI 118/002 to PI 105/012. If this gives a positive result go to step 4. If the circuit is open then locate and fix the wiring fault, re-connect the harness and go to step 8.

4. Check harness continuity PI 118/001 to PI 105/007. If this gives a positive result go to step 5. If the circuit is open then locate and fix the wiring fault, re-connect the harness and go to step 8.

5. Check harness insulation PI 118/002 to PI 118/001. If this gives a positive result go to step 6. If there is a short circuit then locate and fix the wiring fault, re-connect the harness and go to step 8.

6. Between the TP terminals 1 and 2 connect a multi-metre. Slowly move the wiper arm through its whole range whilst checking for a smooth response in metre resistance reading. If this gives a positive result go to step 7. If the results are incorrect then either repair the TP sensor or install a new one. Re-connect the harness and go to step 8.

7. Check for an inlet or an exhaust blockage. If it is clear then fit a new TP sensor, re-connect the harness and go to step 8. If it is blocked then clear the blockage and go to step 8.

8. Clear the fault code. In order to check if the fault code has been cleared perform the service drive cycle. If this gives a positive result then stop. If the fault is still present then go to step 9.

9. Repeat the diagnostic procedure. If this now omits a positive result then stop.

### **Heated Oxygen Sensors – P0131 / P0151**

**Model:** Jaguar XJ Range 1995

**Complaint:** Fault code P0131/P0151 will most likely be set due to a H02S low voltage fault in the upstream sensor.

**Remedy:** Switch off ignition.

Check harness and connector condition and reliability, if a fault occurs then fix it and go to step 6 of the test below.

If no fault is found then disconnect both upstream sensors and go to step 1 of the test below.

Test:

1. Check harness continuity PI 128/002 to PI 105/006. If this gives a positive result then go to step 2. If the circuit is open then locate and fix the wiring fault, re-connect the harness and go to step 6.
2. Check harness continuity PI 128/001 to PI 105/008. If this gives a positive result then go to step 3. If the circuit is open then locate and fix the wiring fault, re-connect the harness and go to step 6.
3. Check harness continuity PI 129/002 to PI 105/019. If this gives a positive result then go to step 4. If the circuit is open then locate and fix the wiring fault, re-connect the harness and go to step 6.
4. Check harness continuity PI 129/001 to PI 105/008. If this gives a positive result then go to step 5. If the circuit is open then locate and fix the wiring fault, re-connect the harness and go to step 6.
5. If the continuity checks are positive then renew and re-connect the sensors. If this now gives a positive result go to step 6.
6. In order to check if the fault code has been cleared perform the service drive cycle. If this gives a positive result then stop. If the fault is still present then go to step 7.
7. Repeat the diagnostic procedure. If this now omits a positive result then stop.

When testing **do not** test the resistance between sensor pins 1 and 2 as the generated current can damage the platinum electrodes.

### **Heated Oxygen Sensors – P0132/P0152**

**Model:** Jaguar XJ Range 1995

**Complaint:** Fault code P0132/P0152 will most likely be set due to a H02S high voltage fault in the upstream sensor.

**Remedy:** Switch off ignition.

Check harness and connector condition and reliability, if a fault occurs then fix it and go to step 11 of the test below.

If no fault is found then disconnect both upstream sensors and go to step 1 of the test below.

Test:

1. Check harness continuity PI 128/002 to PI 105/006. If this gives a positive result then go to step 2. If the circuit is open then locate and fix the wiring fault, re-connect the harness and go to step 11.
2. Check harness continuity PI 128/001 to PI 105/008. If this gives a positive result then go to step 3. If the circuit is open then locate and fix the wiring fault, re-connect the harness and go to step 11.
3. Check harness continuity PI 129/002 to PI 105/019. If this gives a positive result then go to step 4. If the circuit is open then locate and fix the wiring fault, re-connect the harness and go to step 11.
4. Check harness continuity PI 129/001 to PI 105/008. If this gives a positive result then go to step 5. If the circuit is open then locate and fix the wiring fault, re-connect the harness and go to step 11.
5. Check the insulation on the harness between the signal wires and Vbatt. If this gives a positive result then go to step 6. If it short circuits then find and fix the wiring fault, re-connect the harness and go to step 11.
6. Check the harness continuity PI 128/004 to RS 006/008. If this gives a positive result go to step 7. If the circuit is open then locate and fix the wiring fault, re-connect the harness and go to step 11.
7. Check harness continuity PI 128/003 to PI 104/030. If this gives a positive result then go to step 8. If the circuit is open then locate and fix the wiring fault, re-connect the harness and go to step 11.
8. Check harness continuity PI 129/004 to RS 006/008. If this gives a positive result then go to

- step 9. If the circuit is open then locate and fix the wiring fault, re-connect the harness and go to step 11.
9. Check harness continuity PI 129/003 to PI 104/030. If this gives a positive result then go to step 10. If the circuit is open then locate and fix the wiring fault, re-connect the harness and go to step 11.
  10. If the continuity checks are positive then renew and re-connect the sensors. If this now gives a positive result go to step 11.
  11. In order to check if the fault code has been cleared perform the service drive cycle. If this gives a positive result then stop. If the fault is still present then go to step 12.
  12. Repeat the diagnostic procedure. If this now omits a positive result then stop.

When testing **do not** test the resistance between sensor pins 3 and 4 as the generated current can damage the platinum electrodes.

### **Heated Oxygen Sensors – P0133/P0153**

**Model:** Jaguar XJ Range 1995

**Complaint:** Fault code P0133/P0153 will most likely be set due to a H02S slow response fault in the upstream sensor.

**Remedy:** Switch off ignition.

Check harness and connector condition and reliability, if a fault occurs then fix it and go to step 6 of the test below.

If no fault is found then disconnect both upstream sensors and go to step 1 of the test below.

Test:

1. Check harness continuity PI 128/002 to PI 105/006. If this gives a positive result then go to step 2. If the circuit is open then locate and fix the wiring fault, re-connect the harness and go to step 6.
2. Check harness continuity PI 128/001 to PI 105/008. If this gives a positive result then go to step 3. If the circuit is open then locate and fix the wiring fault, re-connect the harness and go to step 6.
3. Check harness continuity PI 129/002 to PI 105/019. If this gives a positive result then go to step 4. If the circuit is open then locate and fix the wiring fault, re-connect the harness and go to step 6.
4. Check harness continuity PI 129/001 to PI 105/008. If this gives a positive result then go to step 5. If the circuit is open then locate and fix the wiring fault, re-connect the harness and go to step 6.
5. If the continuity checks are positive then renew and re-connect the sensors. If this now gives a positive result go to step 6.
6. In order to check if the fault code has been cleared perform the service drive cycle. If this gives a positive result then stop. If the fault is still present then go to step 7.
7. Repeat the diagnostic procedure. If this now omits a positive result then stop.

When testing **do not** test the resistance between sensor pins 3 and 4 as the generated current can damage the platinum electrodes.



### **Heated Oxygen Sensors – P0137/P0157**

**Model:** Jaguar XJ Range 1995

**Complaint:** Fault code P0137/P0157 will most likely be set due to a H02S low voltage fault in the downstream sensor.

**Remedy:** Switch off ignition.

Check harness and connector condition and reliability, if a fault occurs then fix it and go to step 6 of the test below.

If no fault is found then disconnect both downstream sensors and go to step 1 of the test below.

Test:

1. Check harness continuity PI 126/002 to PI 105/016. If this gives a positive result then go to step 2. If the circuit is open then locate and fix the wiring fault, re-connect the harness and go to step 6.
2. Check harness continuity PI 126/001 to PI 105/008. If this gives a positive result then go to step 3. If the circuit is open then locate and fix the wiring fault, re-connect the harness and go to step 6.
3. Check harness continuity PI 127/002 to PI 105/018. If this gives a positive result then go to step 4. If the circuit is open then locate and fix the wiring fault, re-connect the harness and go to step 6.
4. Check harness continuity PI 127/001 to PI 105/008. If this gives a positive result then go to step 5. If the circuit is open then locate and fix the wiring fault, re-connect the harness and go to step 6.
5. If the continuity checks are positive then renew and re-connect the sensors. If this now gives a positive result go to step 6.
6. In order to check if the fault code has been cleared perform the service drive cycle. If this gives a positive result then stop. If the fault is still present then go to step 7.
7. Repeat the diagnostic procedure. If this now omits a positive result then stop.

When testing **do not** test the resistance between sensor pins 3 and 4 as the generated current can damage the platinum electrodes.

### **Heated Oxygen Sensors – P0138/P0158**

**Model:** Jaguar XJ Range 1995

**Complaint:** Fault code P0138/P0158 will most likely be set due to a H02S high voltage fault in the downstream sensor.

**Remedy:** Switch off ignition.

Check harness and connector condition and reliability, if a fault occurs then fix it and go to step 11 of the test below.

If no fault is found then disconnect both downstream sensors and go to step 1 of the test below.

Test:

1. Check harness continuity PI 126/002 to PI 105/016. If this gives a positive result then go to step 2. If the circuit is open then locate and fix the wiring fault, re-connect harness and go to step 11.
2. Check harness continuity PI 126/001 to PI 105/008. If this gives a positive result then go to step 3. If the circuit is open then locate and fix the wiring fault, re-connect the harness and go to step 11.
3. Check harness continuity PI 127/002 to PI 105/018. If this gives a positive result then go to step 4. If the circuit is open then locate and fix the wiring fault, re-connect the harness and go to step 11.

4. Check harness continuity PI 127/001 to PI 105/008. If this gives a positive result then go to step 5. If the circuit is open then locate and fix the wiring fault, re-connect the harness and go to step 11.
5. Check the insulation on the harness between the signal wires and Vbatt. If this gives a positive result then go to step 6. If it short circuits then find and fix the wiring fault, re-connect the harness and go to step 11.
6. Check harness continuity PI 126/004 to RS 006/008. If this gives a positive result then go to step 7. If the circuit is open then locate and fix the wiring fault, re-connect the harness and go to step 11.
7. Check harness continuity PI 126/003 to PI 104/004. If this gives a positive result then go to step 8. If the circuit is open then locate and fix the wiring fault, re-connect the harness and go to step 11.
8. Check harness continuity PI127/004 to RS 006/008. If this gives a positive result then go to step 9. If the circuit is open then locate and fix the wiring fault, re-connect the harness and go to step 11.
9. Check harness continuity PI 127/003 to PI 104/004. If this gives a positive result then go to step 10. If the circuit is open then locate and fix the wiring fault, re-connect the harness and go to step 11.
10. If the continuity checks are positive then renew and re-connect the sensors. If this now gives a positive result go to step 11.
11. In order to check if the fault code has been cleared perform the service drive cycle. If this gives a positive result then stop. If the fault is still present then go to step 12.
12. Repeat the diagnostic procedure. If this now omits a positive result then stop.

When testing **do not** test the resistance between sensor pins 3 and 4 as the generated current can damage the platinum electrodes.

### **Heated Oxygen Sensors – P0139/P0159**

**Model:** Jaguar XJ Range 1995

**Complaint:** Fault code P0139/P0159 will most likely be set due to a H02S slow response fault in the downstream sensor.

**Remedy:** Switch off ignition.

Check harness and connector condition and reliability, if a fault occurs then fix it and go to step 5 of the test below.

If no fault is found then disconnect both downstream sensors and go to step 1 of the test below.

Test:

1. Check harness continuity PI 126/002 to PI 105/016. If this gives a positive result then go to step 2. If the circuit is open then locate and fix the wiring fault, re-connect the harness and go to step 5.
2. Check harness continuity PI 126/001 to PI 105/008. If this gives a positive result then go to step 3. If the circuit is open then locate and fix the wiring fault, re-connect the harness and go to step 5.
3. Check harness continuity PI 127/002 to PI 105/018. If this gives a positive result then go to step 4. If the circuit is open then locate and fix the wiring fault, re-connect the harness and go to step 5.
4. Check harness continuity PI 127/001 to PI 105/008. If this gives a positive result then fit new sensors, re-connect the harness and go to step 5. If the circuit is open then locate and fix the wiring fault, re-connect the harness and go to step 5.
5. In order to check if the fault code has been cleared perform the service drive cycle. If this gives a positive result then stop. If the fault is still present then go to step 6.

6. Repeat the diagnostic procedure. If this now omits a positive result then stop.

When testing **do not** test the resistance between sensor pins 3 and 4 as the generated current can damage the platinum electrodes.

### **Heated Oxygen Sensors – P1137/P1157**

**Model:** Jaguar XJ Range 1995

**Complaint:** Fault code P1137/P1157 will most likely be set due to a H<sub>2</sub>S lack of switching which denotes sparse fuelling in the downstream sensor.

**Remedy:** Look at the exhaust and check if there are any air leaks. If so then fix the problem areas and go to step 11 of the test below.

Switch off ignition.

Look at the downstream sensors and check if they are fitted correctly. If not then repair and go to step 10 of the test below.

If no fault is found then disconnect both downstream sensors and go to step 1 of the test below.

Test:

1. Ensure that both sensors are connected to the correct plugs. If this gives a positive result then go to step 2. If they are incorrectly placed then correct and go to step 10.
2. Check harness continuity PI 126/002 to PI 105/016. If this gives a positive result then go to step 3. If the circuit is open then locate and fix the wiring fault, re-connect harness and go to step 10.
3. Check harness continuity PI 126/001 to PI 105/008. If this gives a positive result then go to step 4. If the circuit is open then locate and fix the wiring fault, re-connect the harness and go to step 10.
4. Check harness continuity PI 127/002 to PI 105/018. If this gives a positive result then go to step 5. If the circuit is open then locate and fix the wiring fault, re-connect the harness and go to step 10.
5. Check harness continuity PI 127/001 to PI 105/008. If this gives a positive result then go to step 6. If the circuit is open then locate and fix the wiring fault, re-connect the harness and go to step 10.
6. Ensure that each downstream sensor heater resistance is within its limits of 5.3 – 6.7 ohms. If this gives a positive result then go to step 7. If the reading is out of range then renew the faulty element, re-connect the harness and go to step 10.
7. Check harness continuity PI 126/003 to PI 127/003. If this gives a positive result then go to step 8. If the circuit is open then locate and fix the wiring fault, re-connect the harness and go to step 10.
8. Check harness continuity PI 126/003 to PI 105/004. If this gives a positive result then go to step 9. If the circuit is open then locate and fix the wiring fault, re-connect the harness and go to step 10.
9. Check harness continuity PI 126/004 and 127/004 to RS 006/008. If this gives a positive result then fit a new set of sensors, re-connect the harness and go to step 10. If the circuit is open then locate and fix the wiring fault, re-connect the harness and go to step 10.
10. In order to check if the fault code has been cleared perform the service drive cycle. If this gives a positive result then stop. If the fault is still present then go to step 11.
11. Repeat the diagnostic procedure. If this now omits a positive result then stop.

When testing **do not** test the resistance between sensor pins 3 and 4 as the generated current can damage the platinum electrodes.

### **Heated Oxygen Sensors – P1138/P1158**

**Model:** Jaguar XJ Range 1995

**Complaint:** Fault code P1138/P1158 will most likely be set due to a H02S lack of switching which denotes rich fuelling in the downstream sensor.

**Remedy:** Switch off ignition, and disconnect both downstream sensors. Go to step 1 of the test below.

Test:

1. Test the insulation of PI 126/002 and PI 127/002 to ground. If this gives a positive result go to step 2. If there is a short circuit then locate the source and fix the fault, then go to step 4.
2. Ensure that each downstream sensor has a heater resistance of between 5.3 and 6.7W. If this gives a positive result then go to step 3. If the limits are incorrect then replace the heater element, re-connect the harness and go to step 4.
3. Ensure the sensors are connected to the correct plugs. If this gives a positive result then go to step 4. If they are incorrectly placed then resolve and go to step 4.
4. Clear the fault. Then in order to check if the fault code has been cleared perform the service drive cycle. If this gives a positive result then stop. If the fault is still present then go to step 5.
5. Repeat the diagnostic procedure. If this now omits a positive result then stop.

When testing **do not** test the resistance between sensor pins 3 and 4 as the generated current can damage the platinum electrodes.

### **Adaptive Fuel – P0171/ P0174**

**Model:** Jaguar XJ Range 1995

**Complaint:** Fault code P0171/P0174 will most likely be set due to a too lean system.

**Remedy:** Look at the exhaust and check if there are any air leaks. If so then fix the problem areas and go to step 10 of the test below.

Check to see if a misfire code has been recorded. If so repair, then go to step 10 of the test below.

If no fault has initially been found, switch off the engine and go to step 1 of the test below.

Test:

1. Check harness continuity PI 126/002 to PI 105/016. If this gives a positive result then go to step 2. If the circuit is open then locate and fix the wiring fault, re-connect harness and go to step 10.
2. Check harness continuity PI 126/001 to PI 105/008. If this gives a positive result then go to step 3. If the circuit is open then locate and fix the wiring fault, re-connect the harness and go to step 10.
3. Check harness continuity PI 127/002 to PI 105/018. If this gives a positive result then go to step 4. If the circuit is open then locate and fix the wiring fault, re-connect the harness and go to step 10.
4. Check harness continuity PI 127/001 to PI 105/008. If this gives a positive result then go to step 5. If the circuit is open then locate and fix the wiring fault, re-connect the harness and go to step 10.
5. Check harness continuity PI 128/002 to PI 105/006. If this gives a positive result then go to step 6. If the circuit is open then locate and fix the wiring fault, re-connect the harness and go to step 10.
6. Check harness continuity PI 128/001 to PI 105/008. If this gives a positive result then go to

step 7. If the circuit is open then locate and fix the wiring fault, re-connect the harness and go to step 10.

7. Check harness continuity PI 129/001 and 105/019. If this gives a positive result then go to step 8. If the circuit is open then locate and fix the wiring fault, re-connect the harness and go to step 10.

8. Check harness continuity PI 129/001 to PI 105/008. If this gives a positive result then go to step 9. If the circuit is open then locate and fix the wiring fault, re-connect the harness and go to step 10.

9. Ensure the injectors have no blockages. If they are clear then go to step 10. If they are blocked then unblock them and go to step 10.

10. Clear the fault code, then in order to check if the fault code has been cleared perform the service drive cycle. If this gives a positive result then stop. If the fault is still present then go to step 11.

11. Repeat the diagnostic procedure. If this now omits a positive result then stop.

### **Adaptive Fuel – P0172/ P0175**

**Model:** Jaguar XJ Range 1995

**Complaint:** Fault code P0172/P0175 will most likely be set due to a too lean system.

**Remedy:** Look at the exhaust and check if there are any air leaks. If so then fix the problem areas and go to step 6 of the test below.

Check to see if a misfire code has been recorded. If so repair, then go to step 6 of the test below.

If no fault has initially been found, switch off the engine and go to step 1 of the test below.

Test:

1. Check harness continuity PI 126/002 to ground. If this gives a positive result then go to step 2. If it short circuits then locate and fix the wiring fault, re-connect harness and go to step 6.

2. Check harness continuity PI 127/002 to ground. If this gives a positive result then go to step 3. If it short circuits then locate and fix the wiring fault, re-connect the harness and go to step 6.

3. Check harness continuity PI 128/002 to ground. If this gives a positive result then go to step 4. If the circuit is open then locate and fix the wiring fault, re-connect the harness and go to step 6.

4. Check harness continuity PI 129/002 to ground. If this gives a positive result then go to step 5. If the circuit is open then locate and fix the wiring fault, re-connect the harness and go to step 6.

5. Ensure the injectors are not leaking. If this gives a positive result then go to step 6. If the injectors are leaking then repair the leak and go to step 6.

6. Clear the fault code. Then to ensure the fault code has cleared; perform the service drive cycle. If this gives a positive result then stop. If the fault is still present then go to step 7.

7. Repeat the diagnostic procedure. If this now omits a positive result then stop.

### **Adaptive Fuel – P1171**

**Model:** Jaguar XJ Range 1995

**Complaint:** Fault code P1171 will most likely be set due to lean fuelling.

**Remedy:** Check to see if the fuel tank is full. If it is empty then refuel and go to step 14 of the test below.

Ensure the fuel pump is being driven. If there is an error then repair and go to step 14 of the test below.

If no fault has been found then remove the fuel pump relay and the harness connector from the fuel pump and go to step 1 of the test below.

Test:

1. Check harness continuity BT 026/085 to PI 104/019. If this gives a positive result then go to step 2. If the circuit is open then locate and fix the wiring fault, re-connect harness and go to step 14.

2. Check harness continuity BT 026/030 to BT 035/004. If this gives a positive result then go to step 3. If the circuit is open then locate and fix the wiring fault, re-connect the harness and go to step 14.
3. Check harness continuity BT 026/086 to CA 044/007. If this gives a positive result then go to step 4. If the circuit is open then locate and fix the wiring fault, re-connect the harness and go to step 14.
4. Check harness continuity BT 026/087 to BT 006/002. If this gives a positive result then go to step 5. If the circuit is open then locate and fix the wiring fault, re-connect the harness and go to step 14.
5. Check harness continuity BT 006/001 to ground. If this gives a positive result then go to step 6. If the circuit is open then locate and fix the wiring fault, re-connect the harness and go to step 14.
6. Check the relay operation on the fuel pump. If this gives a positive result then go to step 7. If the fuel pump relay is faulty then repair or insert a new relay, re-connect the harness and go to step 14.
7. Check for blockages in the fuel filter. If it is clear then go to step 8. If there are blockages, then clear them and go to step 14.
8. Check for blockages in the injectors. If they are clear then go to step 9. If they are blocked then clear them and go to step 14.
9. Check for leaks or blockages in the fuel pipe or fuel rail. If this gives a positive result then go to step 10. If there is a fault then repair and go to step 14.
10. Check the pressure in the fuel rail. If the pressure is fine then go to step 11. If the pressure is too low then fix and go to step 14.
11. For each harness injector check the pin harness connector to ground. If they give a positive result then go to step 12. If there is a full or partial short circuit then locate and fix and go to step 14.
12. Look to see if the fault codes MAFS or H02S is recorded. If not then disconnect the fuel pump from the harness and go to step 13. If the fault codes are recorded then repair the fault and go to step 14.
13. At BT 006/002 ensure the voltage is at approximately 10V. If this is correct then go to step 14. If it is not in range then repair the supply fault and go to step 14.
14. Clear the fault code. Then to ensure the fault code has cleared; perform the service drive cycle. If this gives a positive result then stop. If the fault is still present then go to step 15.
15. Repeat the diagnostic procedure. If this now omits a positive result then stop.

### **Adaptive Fuel – P1172**

**Model:** Jaguar XJ Range 1995

**Complaint:** Fault code P1172 will most likely be set due to rich fuelling.

**Remedy:** Complete test below.

#### **Test:**

1. Check the pressure in the fuel rail. If it gives a positive result then go to step 2. If it is incorrect then repair and go to step 6.
2. Check the fuel return pipe for blockages. If it is clear then go to step 3. If it is blocked then clear the blockages and go to step 6.
3. Check for leakages in the regulator vacuum pipe. If this gives a positive result then go to step 4. If there are any leakages then repair them or fit a new pipe and go to step 6.
4. Check both injectors for leaks. If this gives a positive result then go to step 5. If there are any leakages then repair them or fit a new injector, re-connect the harness and go to step 6.
5. Look to see if the fault codes MAFS or H02S is recorded. If not then disconnect the fuel pump from the harness and go to step 6. If the fault codes are recorded then repair the fault and go to step 6.
6. Clear the fault code. Then to ensure the fault code has cleared; perform the service drive cycle. If this gives a positive result then stop. If the fault is still present then go to step 7.
7. Repeat the diagnostic procedure. If this now omits a positive result then stop.

### **Adaptive Fuel – P1176**

**Model:** Jaguar XJ Range 1995

**Complaint:** Fault code P1176 will most likely be set due to a long term lean fuelling trim (MFR).

**Remedy:** Ensure the fuel pump is being driven. If there is an error then repair and go to step 12 of the test below.

If no fault has been found then remove the fuel pump relay and the harness connector from the fuel pump and go to step 1 of the test below.

Test:

1. Check harness continuity BT 026/085 to PI 104/019. If this gives a positive result then go to step 2. If the circuit is open then locate and fix the wiring fault, re-connect harness and go to step 12.
2. Check harness continuity BT 026/030 to BT 035/004. If this gives a positive result then go to step 3. If the circuit is open then locate and fix the wiring fault, re-connect the harness and go to step 12.
3. Check harness continuity BT 026/086 to CA 044/007. If this gives a positive result then go to step 4. If the circuit is open then locate and fix the wiring fault, re-connect the harness and go to step 12.
4. Check harness continuity BT 026/087 to BT 006/002. If this gives a positive result then go to step 5. If the circuit is open then locate and fix the wiring fault, re-connect the harness and go to step 12.
5. Check harness continuity BT 006/001 to ground. If this gives a positive result then refit the fuel pump relay and go to step 6. If the circuit is open then locate and fix the wiring fault and re-connect the harness. Refit the fuel pump relay and go to step 12.
6. Check for blockages in the fuel filter. If it is clear then go to step 7. If there are blockages, then clear them and go to step 12.
7. Check for leaks or blockages in the fuel pipe or fuel rail. If this gives a positive result then go to step 8. If there is a fault then repair and go to step 12.
8. Check the pressure in the fuel rail. If the pressure is fine then go to step 9. If the pressure is too low then fix and go to step 12.
9. Check for blockages in the injectors. If they are clear then go to step 10. If they are blocked then clear them and go to step 12.
10. For each harness insulation injector check the pin harness connector to ground. If they give a positive result then go to step 11. If there is a full or partial short circuit then locate and fix and go to step 12.
11. Look to see if the fault codes MAFS or H02S is recorded. If not then disconnect the fuel pump from the harness and go to step 12. If the fault codes are recorded then repair the fault and go to step 12.
12. Clear the fault code. Then to ensure the fault code has cleared; perform the service drive cycle. If this gives a positive result then stop. If the fault is still present then go to step 13.
13. Repeat the diagnostic procedure. If this now omits a positive result then stop.

### **Adaptive Fuel – P1177**

**Model:** Jaguar XJ Range 1995

**Complaint:** Fault code P1177 will most likely be set due to long term rich fuelling (FMFR).

**Remedy:** Complete test below.

Test:

1. Check the pressure in the fuel rail. If it gives a positive result then go to step 2. If it is incorrect then repair and go to step 6.
2. Check the fuel return pipe for blockages. If it is clear then go to step 3. If it is blocked then clear the blockages and go to step 6.
3. Check for leakages in the regulator vacuum pipe. If this gives a positive result then go to step 4. If there are any leakages then repair them or fit a new pipe and go to step 6.

4. Check both injectors for leaks. If this gives a positive result then go to step 5. If there are any leakages then repair them or fit a new injector, re-connect the harness and go to step 6.
5. Look to see if the fault codes MAFS or H02S is recorded. If not then disconnect the fuel pump from the harness and go to step 6. If the fault codes are recorded then repair the fault and go to step 6.
6. Clear the fault code. Then to ensure the fault code has cleared; perform the service drive cycle. If this gives a positive result then stop. If the fault is still present then go to step 7.
7. Repeat the diagnostic procedure. If this now omits a positive result then stop.

#### **Adaptive Fuel – P1178**

**Model:** Jaguar XJ Range 1995

**Complaint:** Fault code P1178 will most likely be set due to long term rich fuelling trim (AMFR).

**Remedy:** Complete test below.

1. Ensure there are no manifold air leaks, if so repair and go to step 3.
2. Check the recorded MAFS fault code has been recorded, if so correct and go to step 3.
3. Clear the fault code. Then to ensure the fault code has cleared; perform the service drive cycle. If this gives a positive result then stop. If the fault is still present then go to step 4.
4. Repeat the diagnostic procedure. If this now omits a positive result then stop.

#### **Adaptive Fuel – P1179**

**Model:** Jaguar XJ Range 1995

**Complaint:** Fault code P1178 will most likely be set due to long term rich fuelling trim (AMFR).

**Remedy:** Complete test below.

1. Ensure there are no exhaust leaks, if so repair and go to step 3.
2. Check the recorded MAFS fault code has been recorded, if so correct and go to step 3.
3. Clear the fault code. Then to ensure the fault code has cleared; perform the service drive cycle. If this gives a positive result then stop. If the fault is still present then go to step 4.
4. Repeat the diagnostic procedure. If this now omits a positive result then stop.

#### **Heated Oxygen Sensors – P1185**

**Model:** Jaguar XJ Range 1995

**Complaint:** Fault code P1185 will most likely be set due to a H02S heater open circuit in the upstream sensor.

**Remedy:** Switch off ignition.

Check harness and connector condition and reliability, if a fault occurs then fix it and go to step 7 of the test below.

Disconnect both upstream sensors and go to step 1 of the test below.

Test:

1. Ensure that each upstream sensor has a heater resistance of between 5.3 and 6.7 Ohms. If this gives a positive result then go to step 2. If the limits are incorrect then replace the sensor, re-connect the harness and go to step 7.
2. Check harness continuity PI 128/003 to PI 129/003. If this gives a positive result then switch of ignition and go to step 3. If the circuit is open then find the fault and fix it, re-connect the harness and go to step 7.
3. Check harness continuity PI 128/001 to PI 104/030. If this gives a positive result then go to step 4. If the circuit is open then find the fault and fix it, re-connect the harness and go to step 7.
4. Check harness continuity PI 128/004 to RS 006/008. If this gives a positive result then go to step 5. If the circuit is open then find the fault and fix it, re-connect the harness and go to step 7.
5. Check harness continuity PI 129/004 to RS 006/008. If this gives a positive result then go to step 6. If the circuit is open then find the wiring fault and fix it, re-connect the harness and go to



step 7.

6. Check harness insulation PI 128/003 to ground. If this gives a positive result then re-connect the harness and go to step 7. If there is a short circuit then find the wiring fault and fix, re-connect the harness and go to step 7.

7. Clear the fault. Then in order to check if the fault code has been cleared perform the service drive cycle. If this gives a positive result then stop. If the fault is still present then go to step 8.

8. Repeat the diagnostic procedure. If this now omits a positive result then stop.

When testing **do not** test the resistance between sensor pins 3 and 4 as the generated current can damage the platinum electrodes.

### **Heated Oxygen Sensors – P1186**

**Model:** Jaguar XJ Range 1995

**Complaint:** Fault code P1186 will most likely be set due to a H02S heater short circuit in the upstream sensor.

**Remedy:** Switch off ignition.

Check harness and connector condition and reliability, if a fault occurs then fix it and go to step 3 of the test below.

Disconnect both upstream sensors and go to step 1 of the test below.

Test:

1. Ensure that each upstream sensor has a heater resistance of between 5.3 and 6.7 Ohms. If this gives a positive result then go to step 2. If the limits are incorrect then replace the sensor, re-connect the harness and go to step 3.

2. Ensure the voltage reading is 0V PI 128/003 and PI 129/003 to Vbatt. If the reading is 0V then replace the sensor, re-connect the harness and go to step 3. If the reading is above 0V then find the wiring fault and fix, re-connect the harness and go to step 3.

3. Clear the fault. Then in order to check if the fault code has been cleared perform the service drive cycle. If this gives a positive result then stop. If the fault is still present then go to step 8.

4. Repeat the diagnostic procedure. If this now omits a positive result then stop.

When testing **do not** test the resistance between sensor pins 3 and 4 as the generated current can damage the platinum electrodes.

### **Heated Oxygen Sensors – P1187**

**Model:** Jaguar XJ Range 1995

**Complaint:** Fault code P1187 will most likely be set due to a H02S heater inferred open circuit in the upstream sensor.

**Remedy:** Switch off ignition.

Check harness and connector condition and reliability, if a fault occurs then fix it and go to step 6 of the test below.

Disconnect both upstream sensors and go to step 1 of the test below.

Test:

1. Ensure that each upstream sensor has a heater resistance of between 5.3 and 6.7 Ohms. If this gives a positive result then go to step 2. If the limits are incorrect then replace the sensor, re-connect the harness and go to step 6.

2. Check harness continuity PI 126/003 to PI 127/003. If this gives a positive result then switch off ignition and go to step 3. If the circuit is open then find the fault and fix it, re-connect the harness and go to step 6.

3. Check harness continuity PI 126/001 to PI 104/004. If this gives a positive result then go to step 4. If the circuit is open then find the fault and fix it, re-connect the harness and go to step 6.

4. Check harness continuity PI 126/004 to RS 006/008. If this gives a positive result then go to step 5. If the circuit is open then find the fault and fix it, re-connect the harness and go to step 6.
5. Check harness continuity PI 127/004 to RS 006/008. If this gives a positive result then replace the sensors, re-connect the harness and go to step 6. If the circuit is open then find the wiring fault and fix it, re-connect the harness and go to step 7.
6. Clear the fault. Then in order to check if the fault code has been cleared perform the service drive cycle. If this gives a positive result then stop. If the fault is still present then go to step 8.
7. Repeat the diagnostic procedure. If this now omits a positive result then stop.

When testing **do not** test the resistance between sensor pins 3 and 4 as the generated current can damage the platinum electrodes.

### **Heated Oxygen Sensors – P1188**

**Model:** Jaguar XJ Range 1995

**Complaint:** Fault code P1188 will most likely be set due to a H02S heater resistance in the upstream sensor.

**Remedy:** Switch off ignition.

Check harness and connector condition and reliability, if a fault occurs then fix it and go to step 7 of the test below.

Disconnect both upstream sensors and go to step 1 of the test below.

Test:

1. Ensure that each upstream sensor has a heater resistance of between 5.3 and 6.7 Ohms. If this gives a positive result then go to step 2. If the limits are incorrect then replace the sensors, re-connect the harness and go to step 7.
2. Check harness continuity PI 128/003 to PI 129/003. If this gives a positive result then go to step 3. If the circuit is open then find the fault and fix it, re-connect the harness and go to step 7.
3. Check harness continuity PI 128/003 to PI 104/030. If this gives a positive result then go to step 4. If the circuit is open then find the fault and fix it, re-connect the harness and go to step 7.
4. Check harness continuity PI 128/004 to RS 006/008. If this gives a positive result then go to step 5. If the circuit is open then find the fault and fix it, re-connect the harness and go to step 7.
5. Check harness continuity PI 129/004 to RS 006/008. If this gives a positive result then go to step 6. If the circuit is open then find the wiring fault and fix it, re-connect the harness and go to step 7.
6. Check harness insulation PI 128/003 to ground. If this gives a positive result then replace the sensors, re-connect the harness and go to step 7. If there is a short circuit then find the wiring fault and fix, re-connect the harness and go to step 7.
7. Clear the fault. Then in order to check if the fault code has been cleared perform the service drive cycle. If this gives a positive result then stop. If the fault is still present then go to step 8.
8. Repeat the diagnostic procedure. If this now omits a positive result then stop.

When testing **do not** test the resistance between sensor pins 3 and 4 as the generated current can damage the platinum electrodes.

### **Heated Oxygen Sensors – P1189**

**Model:** Jaguar XJ Range 1995

**Complaint:** Fault code P1189 will most likely be set due to a H02S low resistance heater circuit in the upstream sensor.

**Remedy:** Switch off ignition.

Check harness and connector condition and reliability, if a fault occurs then fix it and go to step 7 of the test below.

Disconnect both upstream sensors and go to step 1 of the test below.

Test:

1. Ensure that each upstream sensor has a heater resistance of between 5.3 and 6.7 Ohms. If this gives a positive result then go to step 2. If the limits are incorrect then replace the sensors, re-connect the harness and go to step 6.