



V8 XJ Series/XK

DATE 04/01

303-43

SERVICE

TECHNICAL BULLETIN

Drivability Diagnosis – AJ 26 Engines

MODEL
 1997-98 MY XK8 Range
 1998 MY V8 XJ Series
 VIN 1998-99 MY XJR

Issue:

This Technical Bulletin has been issued to give diagnostic information relating to various engine drivability concerns. Driven by the symptoms that the customer experiences, the guide takes you through the faultfinding process in a logical order.

Note: Diagnostic guides covering other engine concerns will follow.

Action:

Before using the guide, check the Symptom Matrix on the next page for the diagnostic flowchart sequence. For example, if the **engine cuts-out soon after start**, work through flow charts P3, P2, P1, P5 etc. Following the flowcharts in the sequence identified will help rectify any concerns while optimizing the utilization of workshop time.

Note: When working on any vehicle ensure that exposed paintwork is protected with the appropriate fender protection covers.

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RELAY CODES AND DATE STAMPS

Relay date codes come in two forms:

- Relays prior to December 1998 have the format: Letter – Number – Letter i.e. R6 K1
- Relays post December 1998 have the format: Number – Letter – Letter i.e. 2AB

All date codes are printed in white on the top face of the relay, adjacent to the part number.

⚠ Warning: Working on the fuel system can result in fuel vapor being emitted into the atmosphere. Fuel vapor is extremely flammable; hence great care should be taken when working on the fuel system.

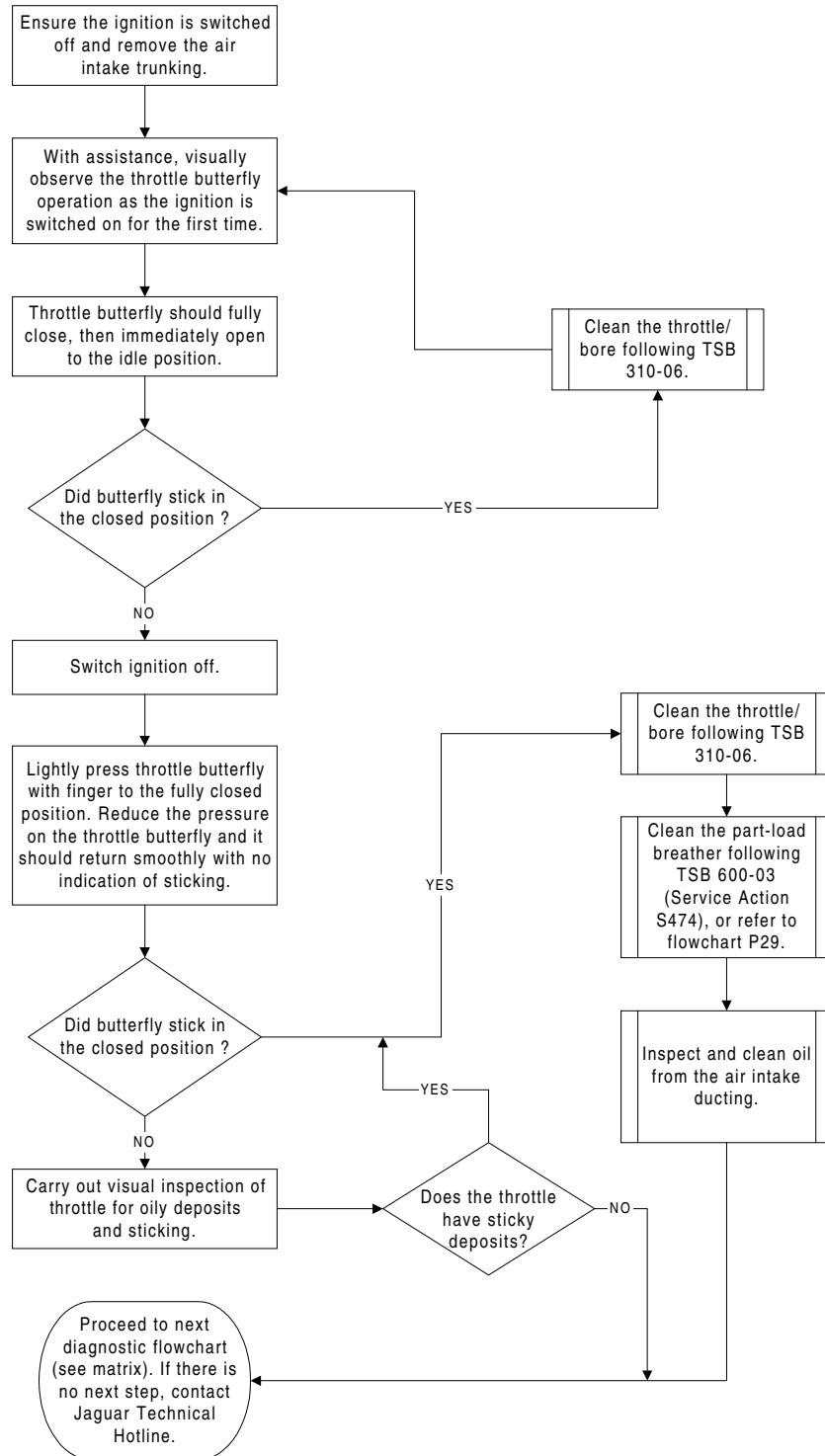
Do not smoke in the working area and ensure that there is a CO2 fire extinguisher close by. The working area must be well ventilated and extraction equipment used when appropriate. When emptying fuel, use suitable fireproof equipment and an authorized explosion-proof container.

SYMPTOM MATRIX

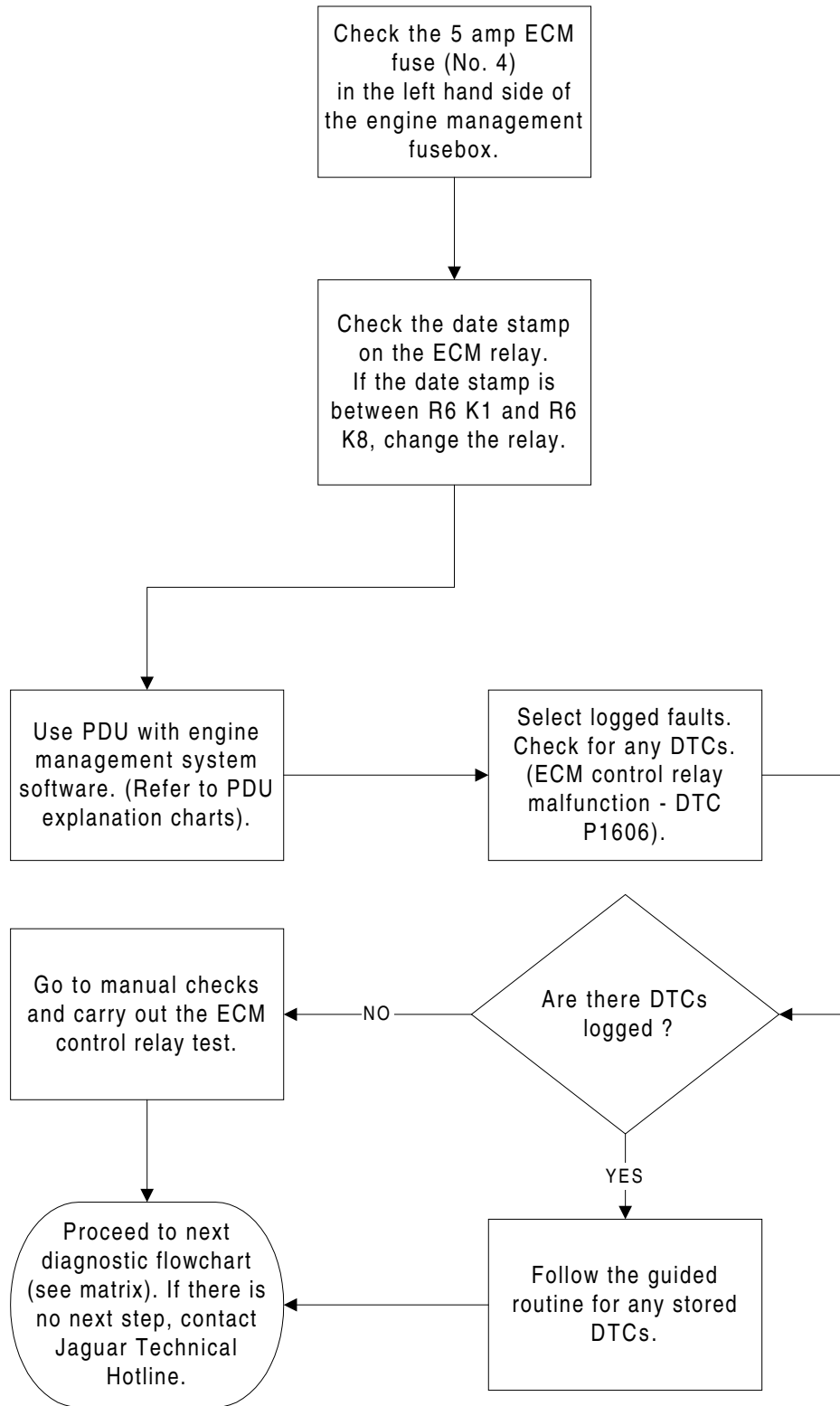
Stalling Symptom	Suspect Area (check in order of listing)	See Chart
Soon After Start	1. Fuel Pump Relay 2. ECM Relay 3. Throttle (Contaminated) 4. DTC P1336 5. Harness 6. Fuel Pump 7. Mass Air Flow Sensor 8. Engine Coolant Temperature Sensor 9. Fuel Lines 10. Air Leakage	P3 P2 P1 P5 P14 P17 P19 P18 P21 P23
On Deceleration	1. Throttle (Contaminated) 2. ECM Relay 3. Fuel Pump Relay 4. DTC P1336	P1 P2 P3 P5
At Steady Speed	1. Throttle (Contaminated) 2. ECM Relay 3. Fuel Pump Relay 4. Immobilizer 5. DTC P1336 6. Harness 7. Blocked Part-Load Breather	P1 P2 P3 P4 P5 P14 P29
With Speed Control Enabled	1. Throttle (Contaminated) 2. ECM Relay 3. Fuel Pump Relay 4. Immobilizer 5. DTC P1336 6. Harness 7. Blocked Part-Load Breather	P1 P2 P3 P4 P5 P14 P29
When Maneuvering	1. ECM Relay 2. Fuel Pump Relay 3. DTC P1336	P2 P3 P5

P1 - CONTAMINATED THROTTLE DIAGNOSTIC FLOW CHART

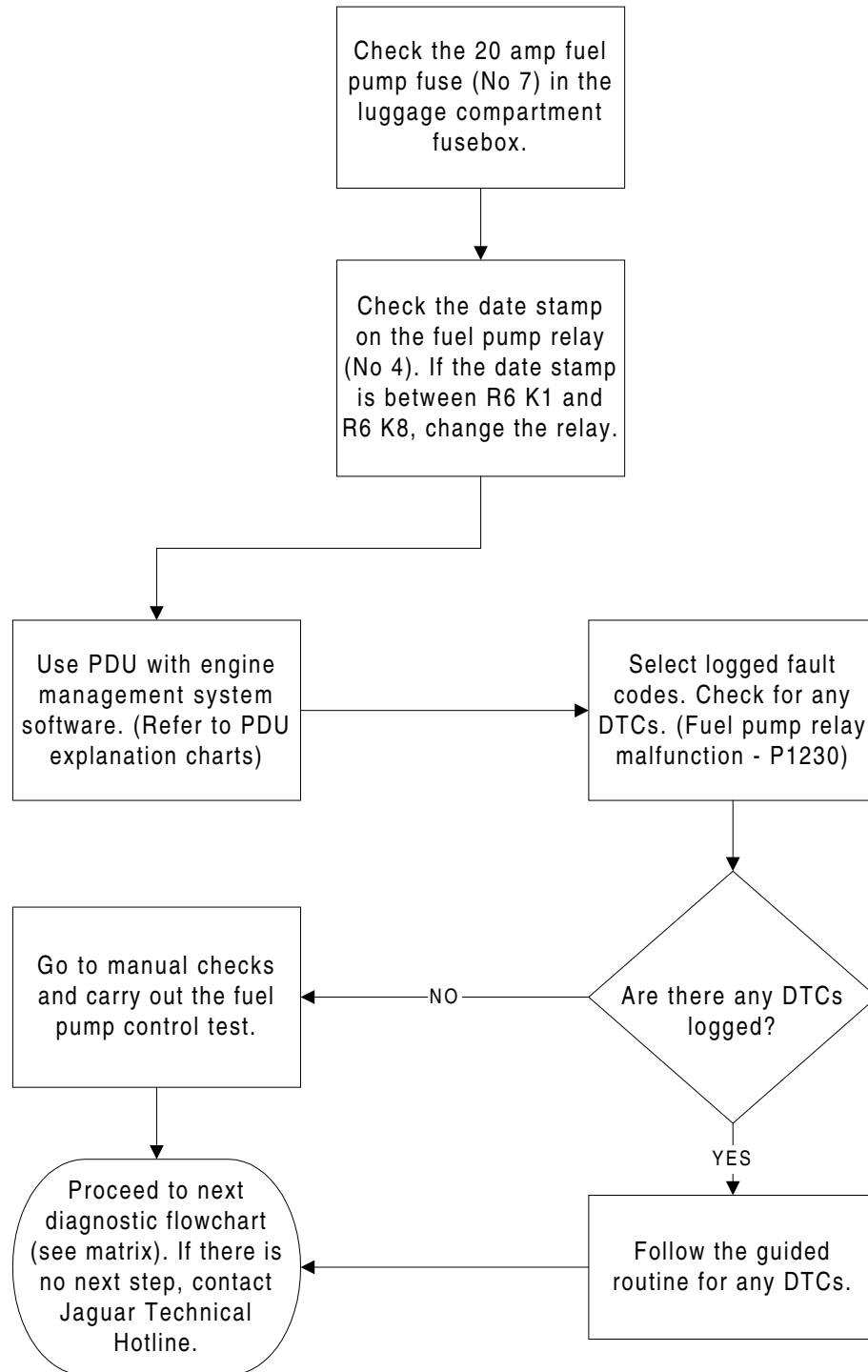
Note: Before proceeding with the diagnostic flowchart, ensure that the engine is cold, since oily deposits are not sticky when the engine is hot.



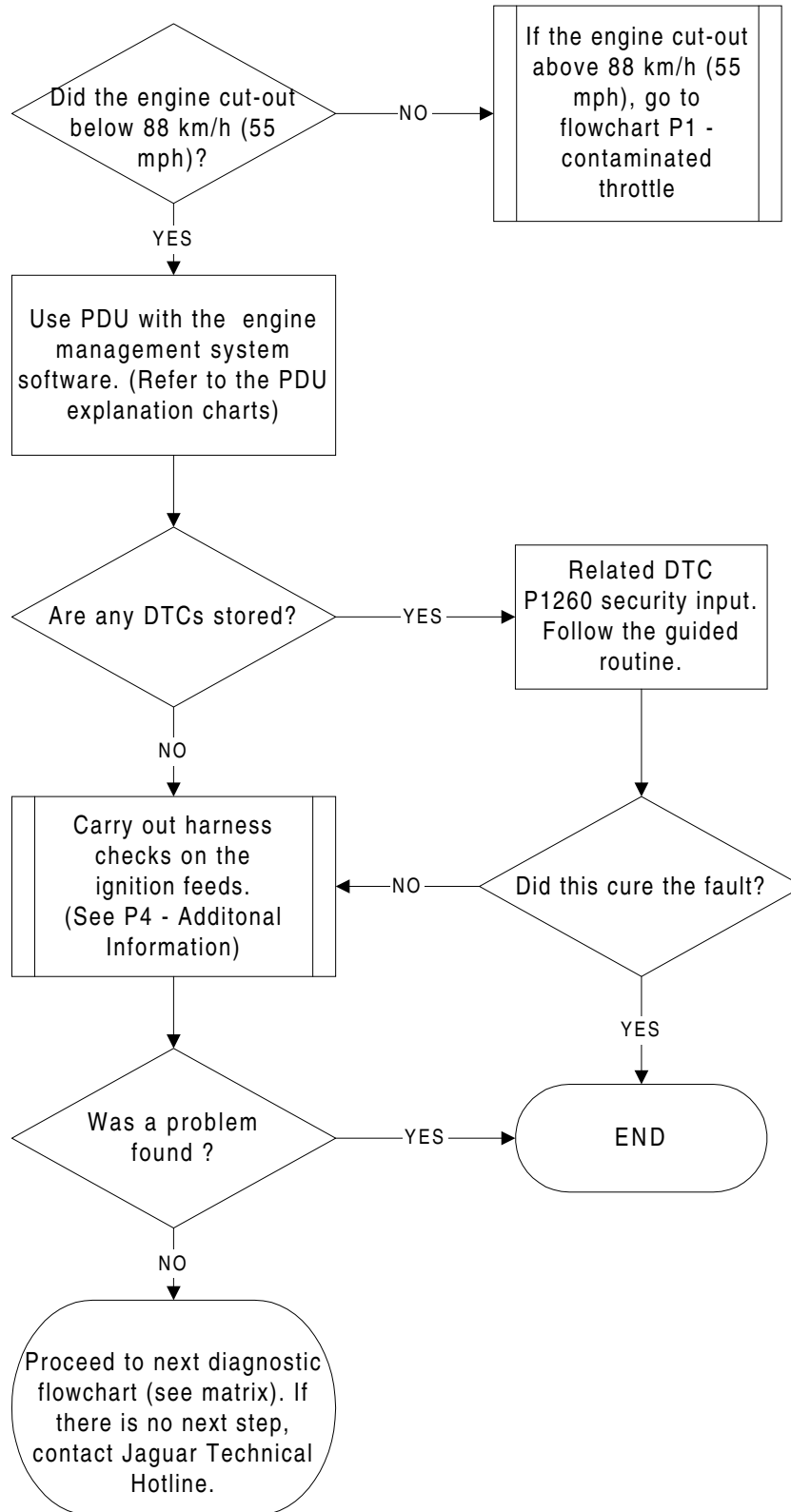
P2 - ECM RELAY DIAGNOSTIC FLOW CHART



P3 - FUEL PUMP RELAY DIAGNOSTIC FLOW CHART



P4 - IMMOBILIZATION (STALL SITUATION) DIAGNOSTIC FLOW CHART

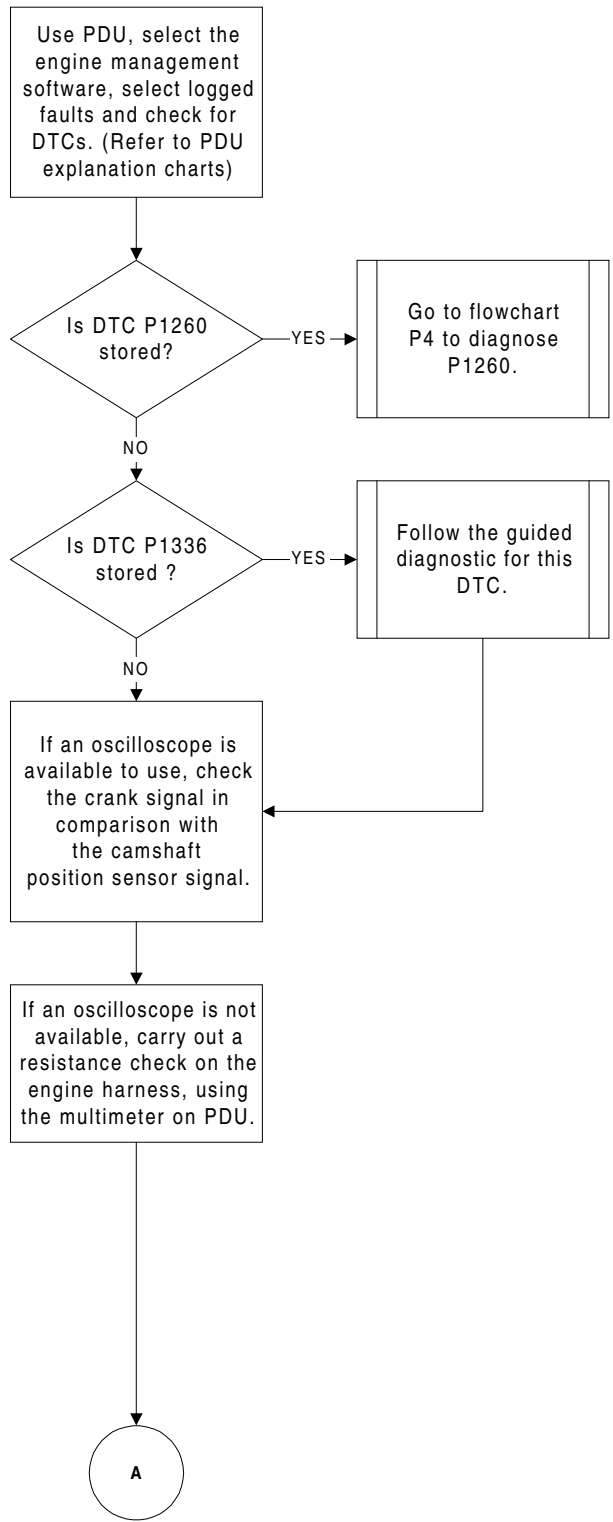


P4 - IMMOBILIZATION (STALL SITUATION) DIAGNOSTIC FLOW CHART - IGNITION INPUTS

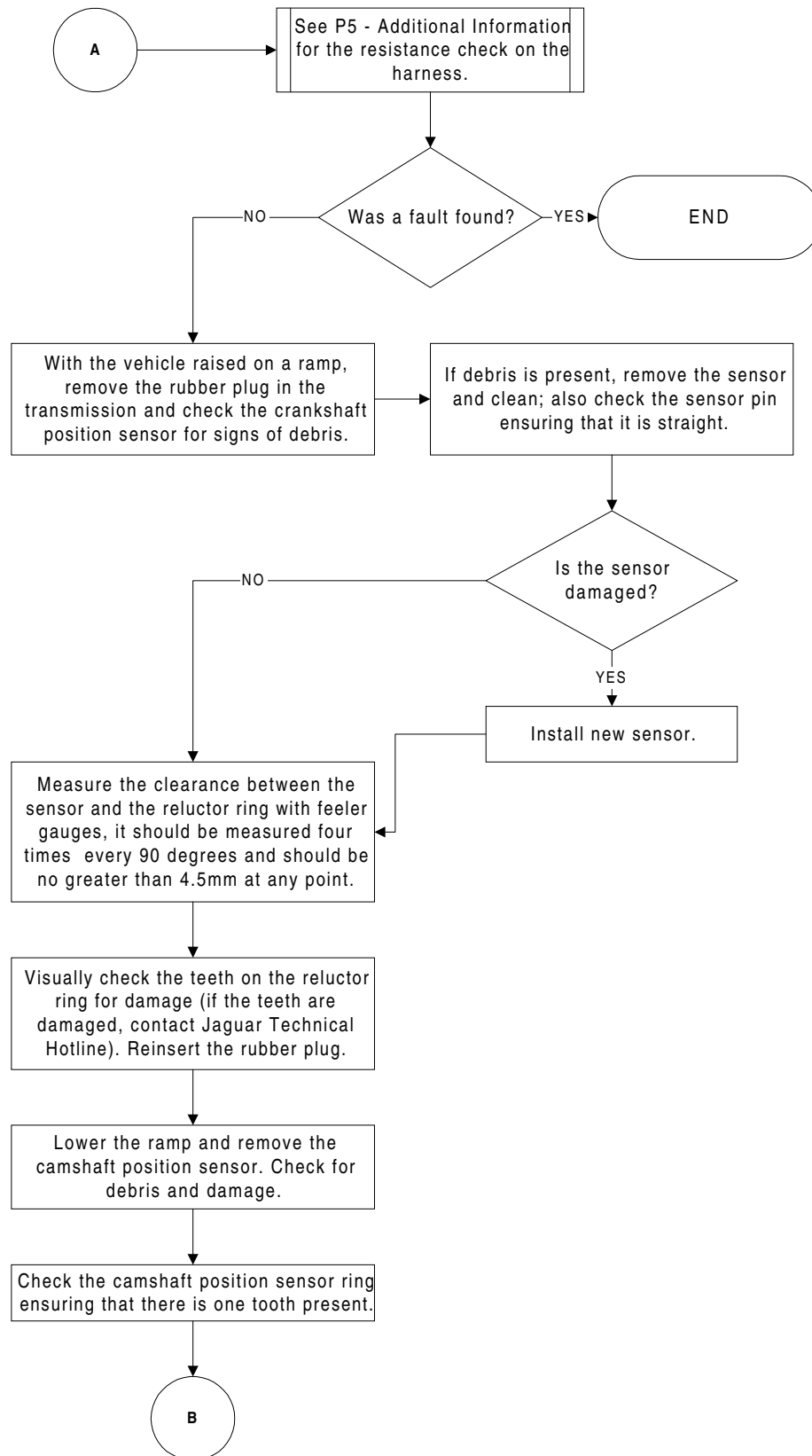
Ignition feed	Connector	Fuse
Feed 1	EMO10/1	EMS Fuse box F10 5a
Feed 2	EMO14/3	EMS Fuse box F10 5a
Feed 3	EMO10/5	Engine Compartment Fuse box F5 10a

Note: Carry out continuity checks using the multimeter on PDU.

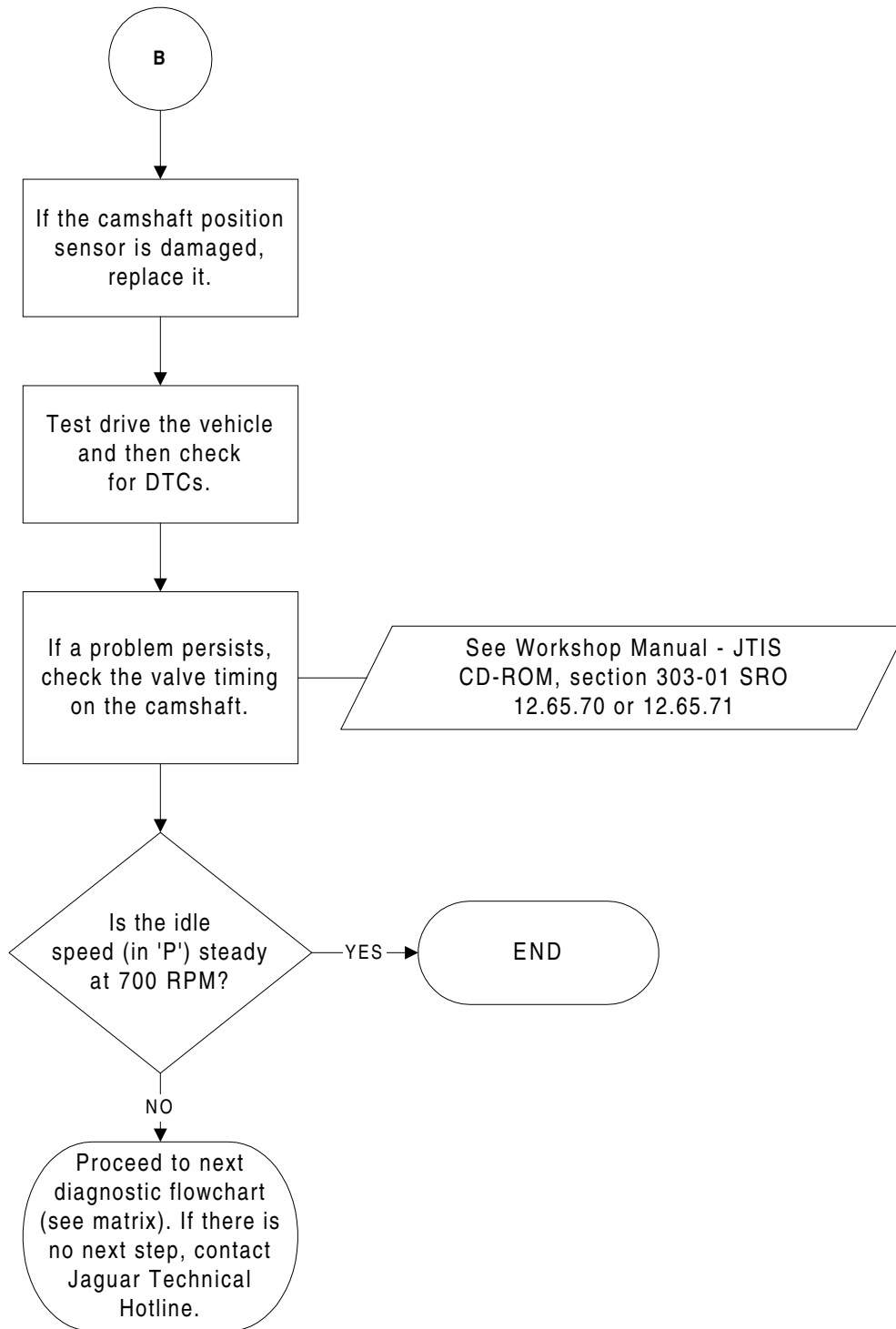
P5 - DTC 1336 DIAGNOSTIC FLOW CHART



P5 - DTC 1336 DIAGNOSTIC FLOW CHART - CONT.



P5 - DTC 1336 DIAGNOSTIC FLOW CHART - CONT.



P5 - DTC 1336 - ADDITIONAL INFORMATION

Component	Part Number	+ 20 °C	+10 ~ +50 °C	+50 ~ +100 °C
Crankshaft Position Sensor	LCA 1640AE	950 ~ 1250 Ohms	835 ~ 1400 Ohms	1060 ~ 1645 Ohms
Camshaft Position Sensor	LCA 1646AD	1850 ~ 2450 Ohms	1630 ~ 2740 Ohms	2065 ~ 3225 Ohms

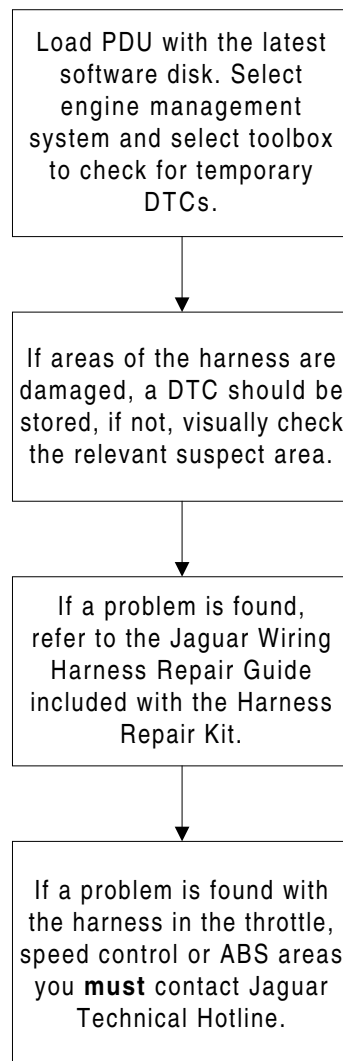
Resistance is in ohms at the engine management connector EM013 for the crankshaft position sensor.

- Disconnect the engine management connector EM013.
- Check the resistance between Pins 19 and pin 28 (sensor ground).
- The reading should be between the parameters above for the relative temperature.

Resistance is in ohms at the engine management connector EM013 for the camshaft position sensor.

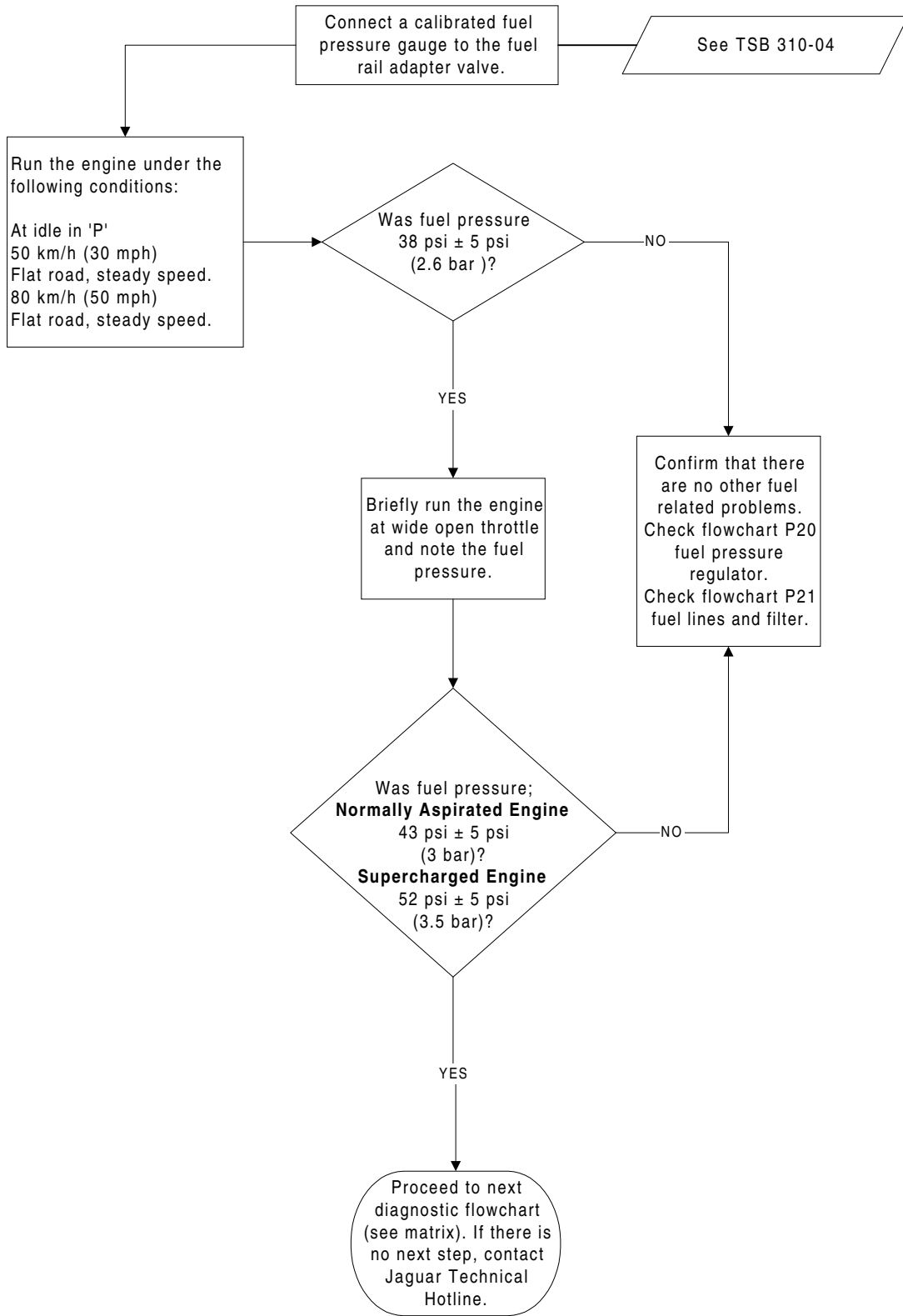
- Disconnect the engine management connector EM013.
- Check the resistance between Pins 20 and pin 29 (sensor ground).
- The reading should be between the parameters above for the relative temperature.

P14 - ENGINE HARNESS DIAGNOSTIC FLOW CHART

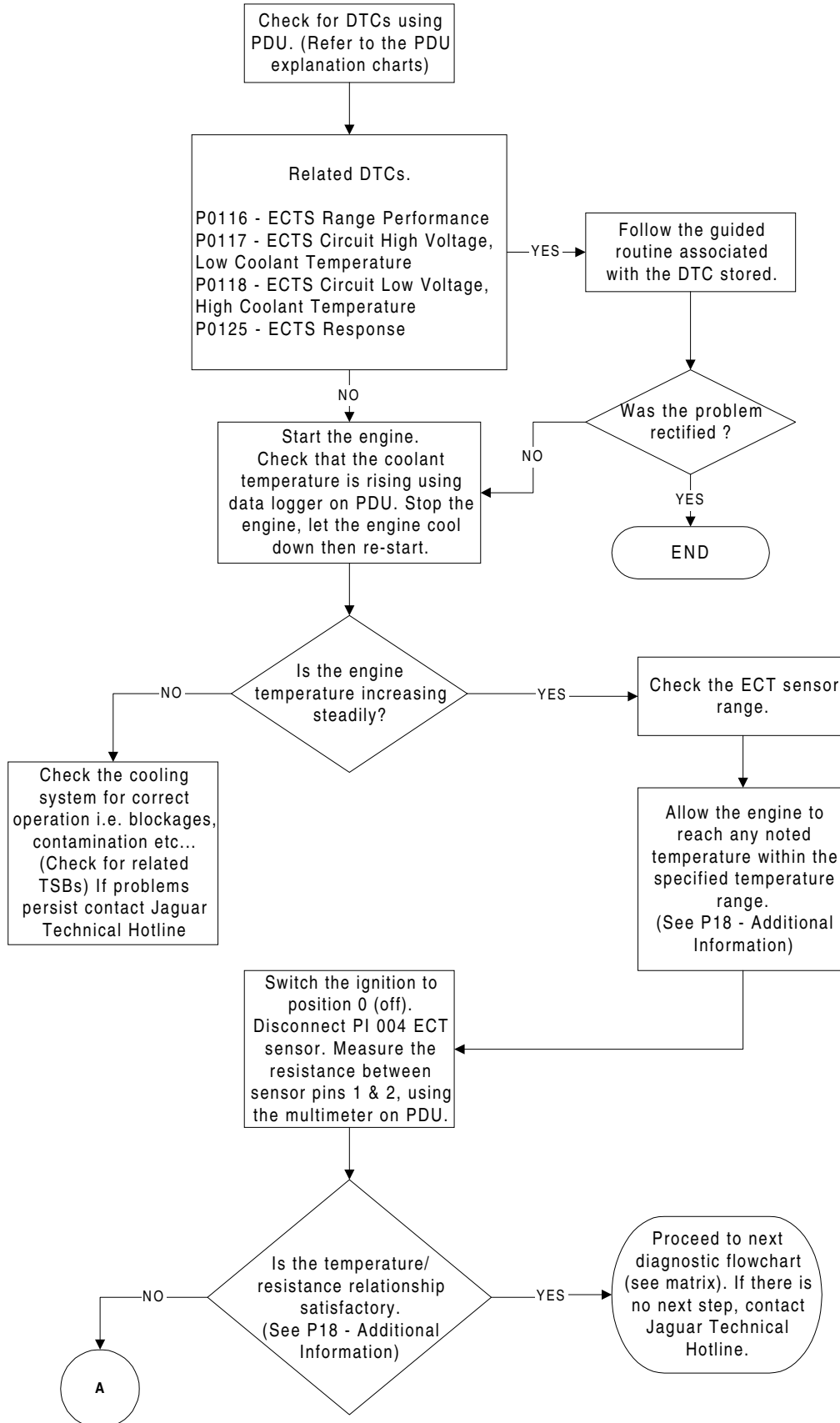


Caution! Use care when probing pins. Use the correct adaptors and tools as defined in the harness repair guide.

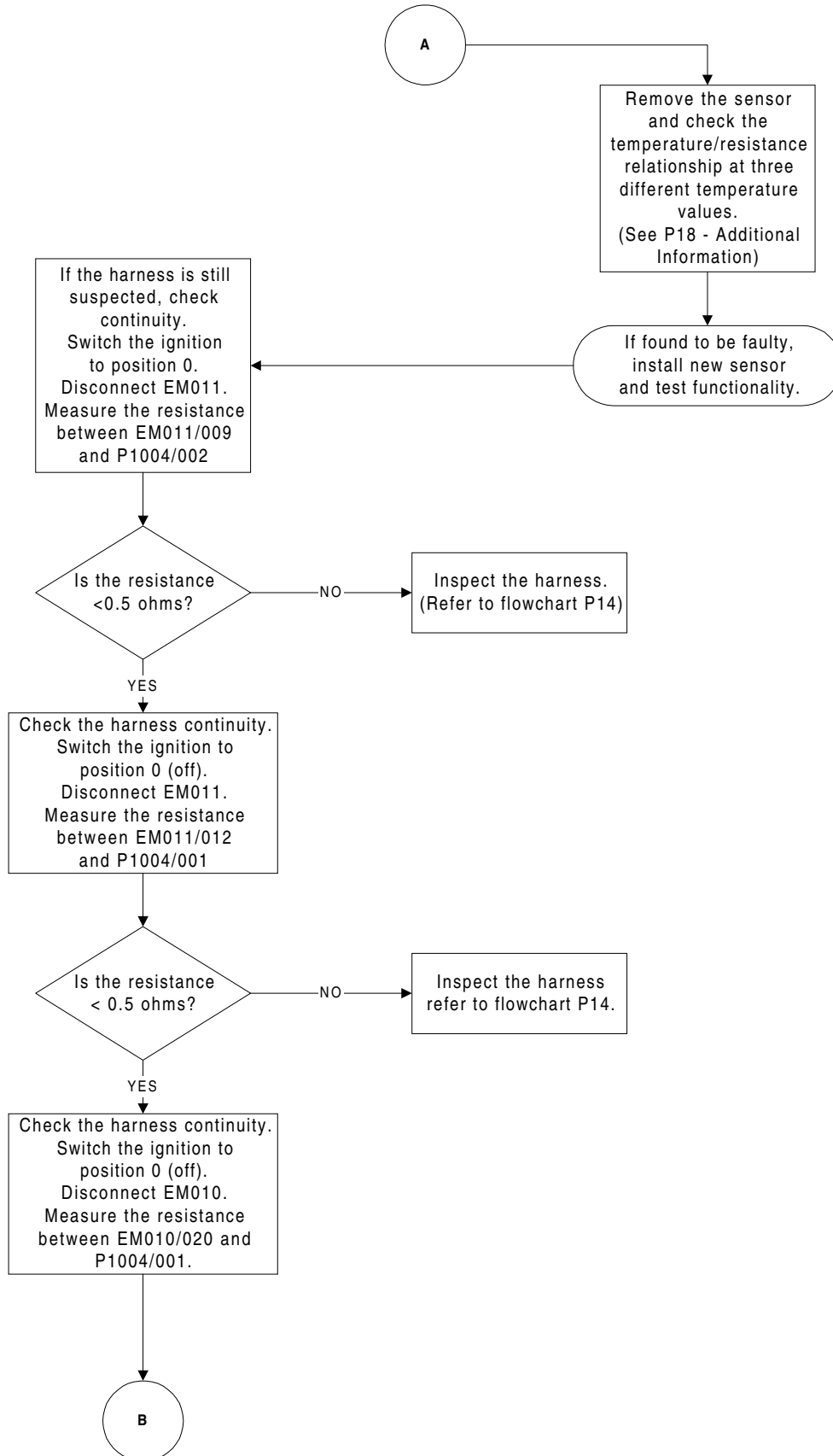
P17 - FUEL PUMP DIAGNOSTIC FLOW CHART



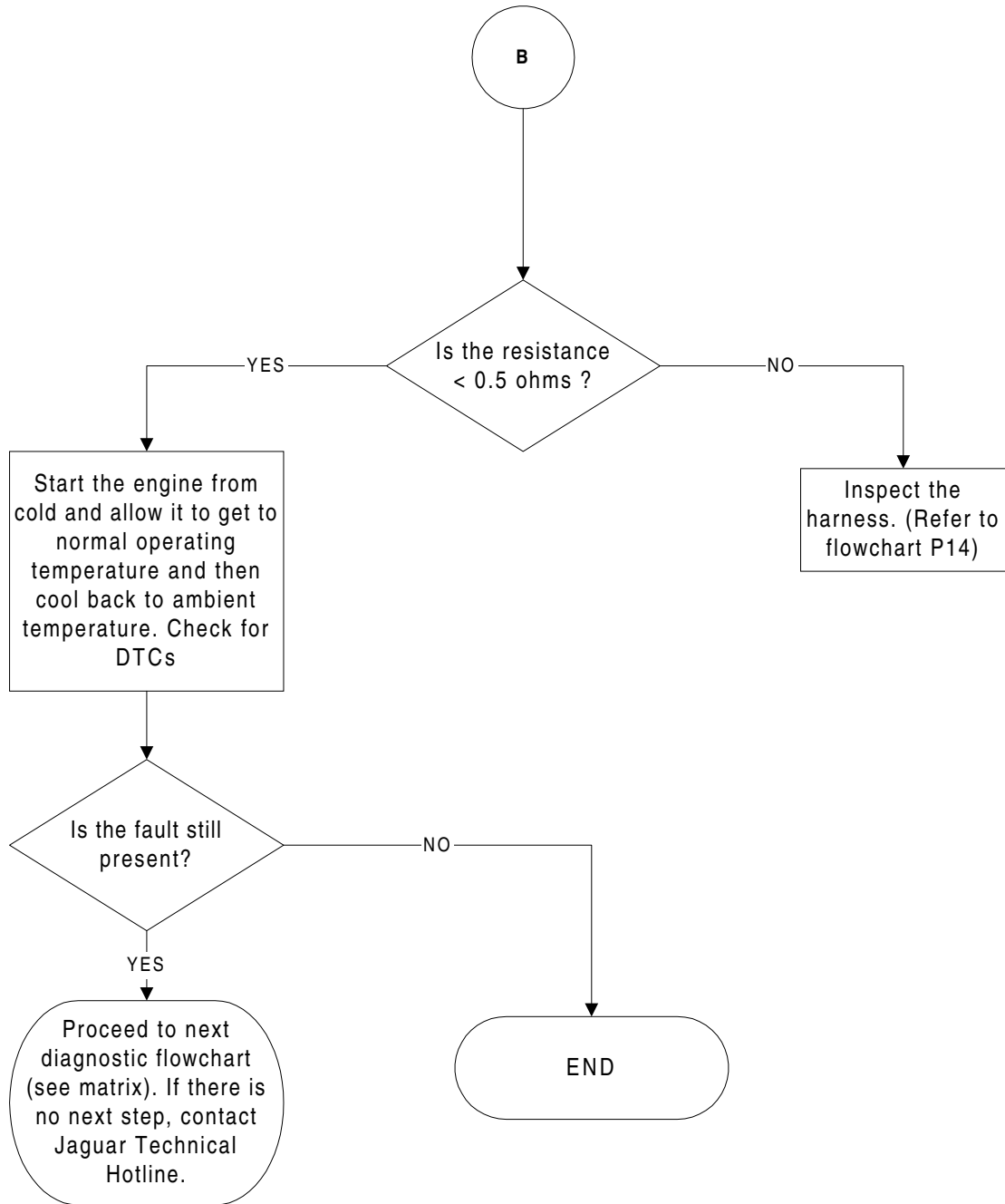
P18 - ENGINE COOLANT TEMPERATURE SENSOR DIAGNOSTIC FLOW CHART



P18 - ENGINE COOLANT TEMPERATURE SENSOR DIAGNOSTIC FLOW CHART - CONT.



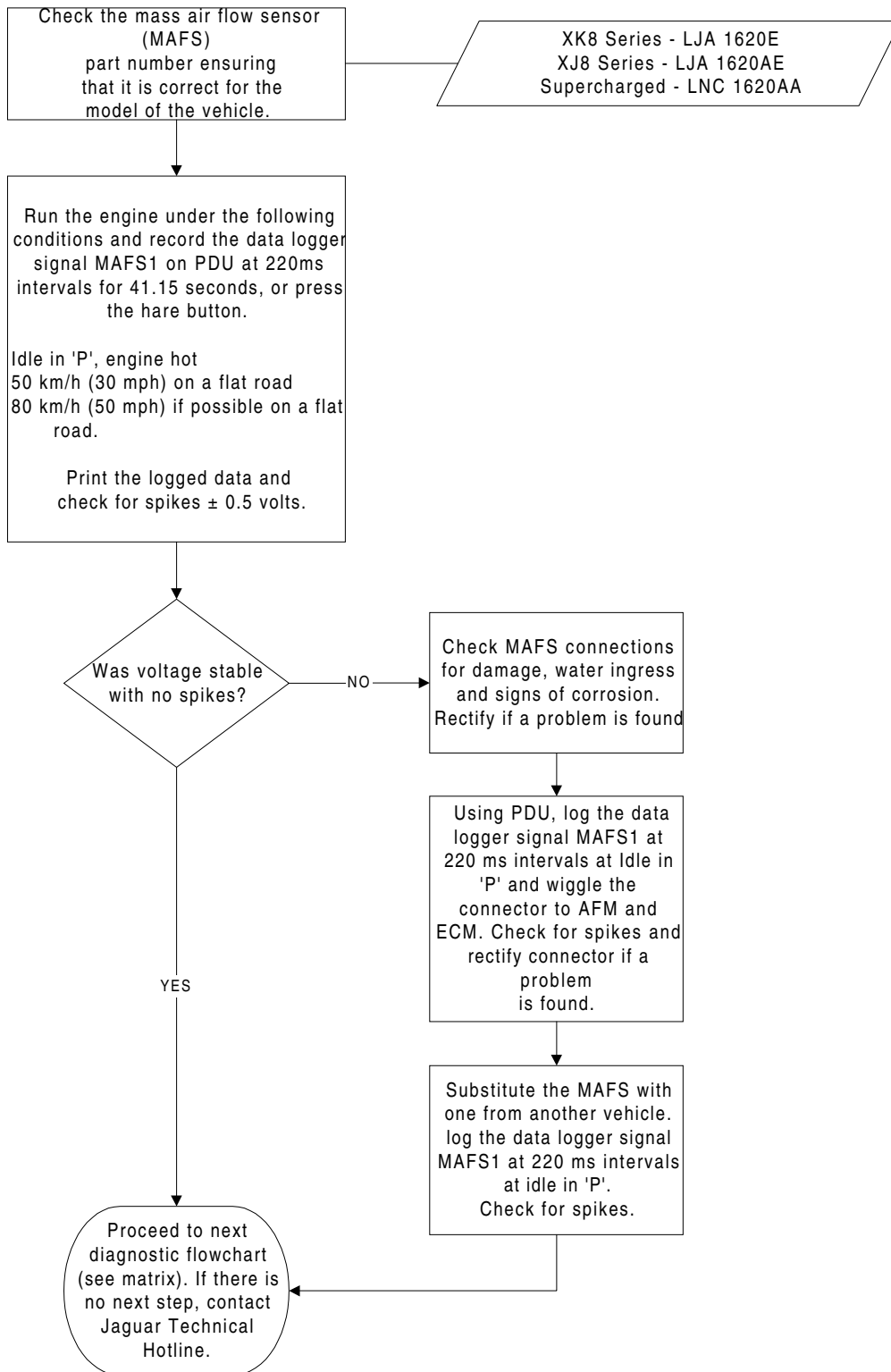
P18 - ENGINE COOLANT TEMPERATURE SENSOR DIAGNOSTIC FLOW CHART - CONT.



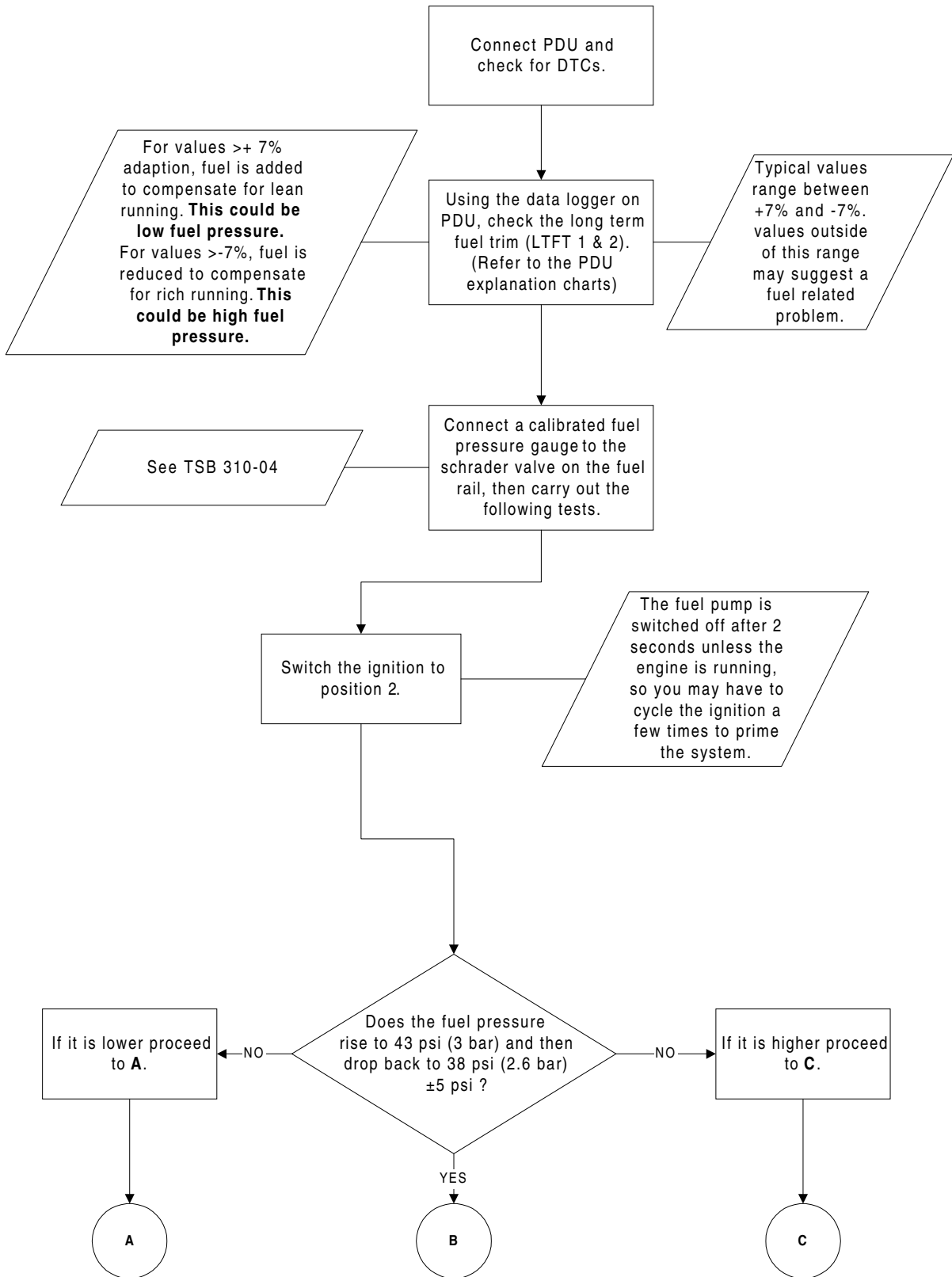
P18 - ENGINE COOLANT TEMPERATURE SENSOR - RESISTANCE VALUES

Temperature °C	Resistance K Ohms	Voltage V
- 10	9.20	4.05
0	5.90	3.64
10	3.70	2.89
20	2.50	2.42
30	1.70	2.20
40	1.18	1.78
50	0.84	1.44
60	0.60	1.17
70	0.435	0.95
80	0.325	0.78
90	0.25	0.65
100	0.19	0.55

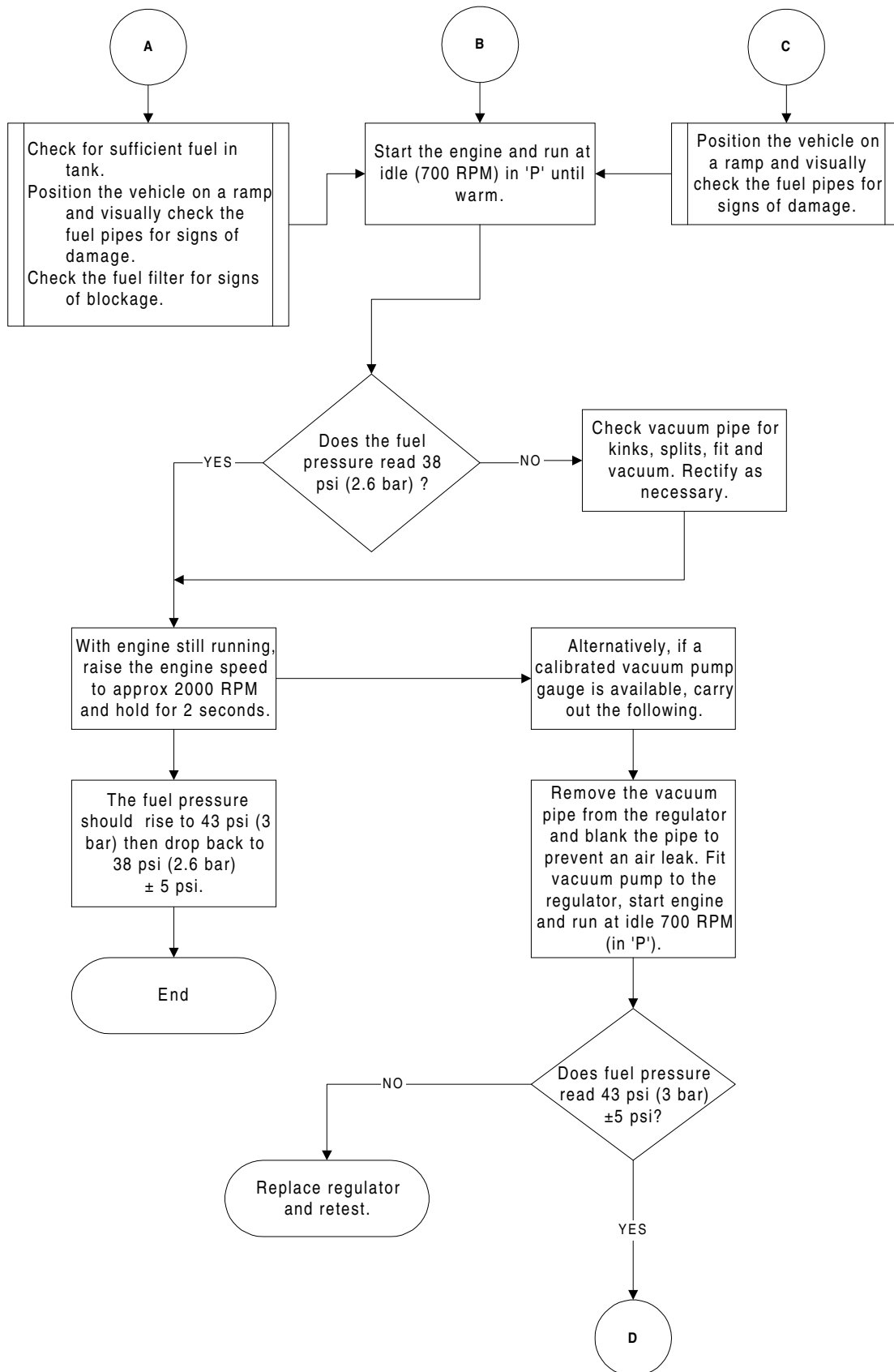
P19 - MASS AIR FLOW SENSOR DIAGNOSTIC FLOW CHART



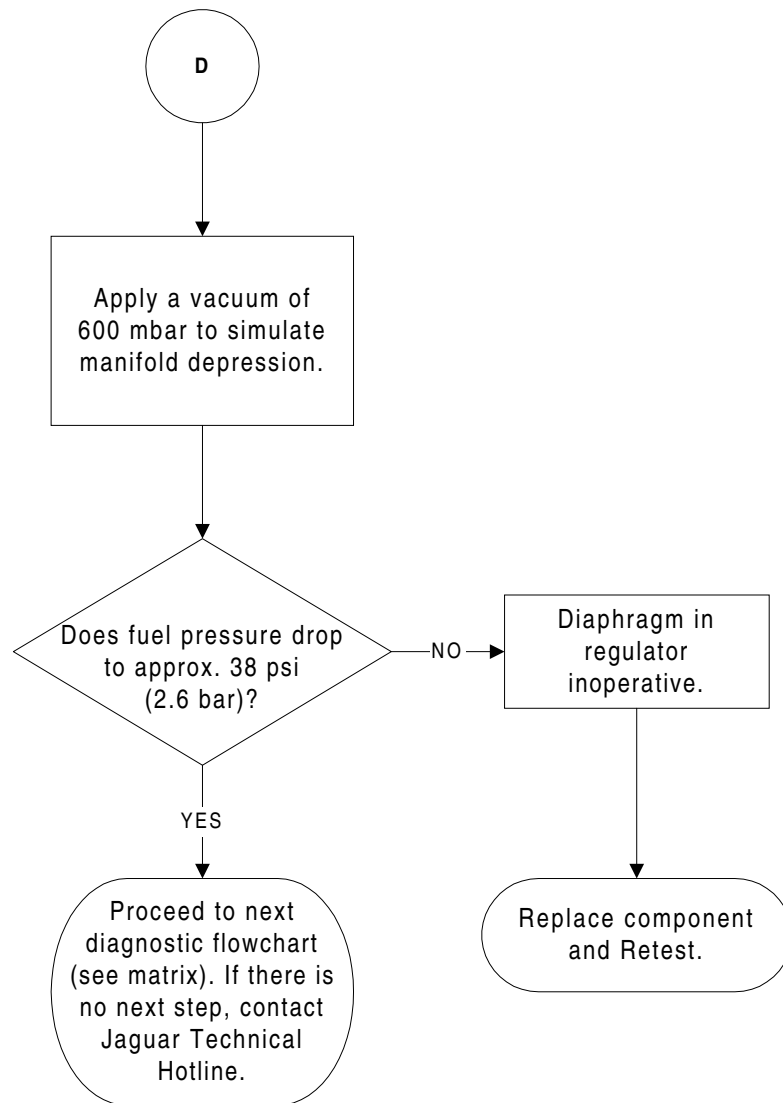
P20 - FUEL PRESSURE REGULATOR DIAGNOSTIC FLOW CHART



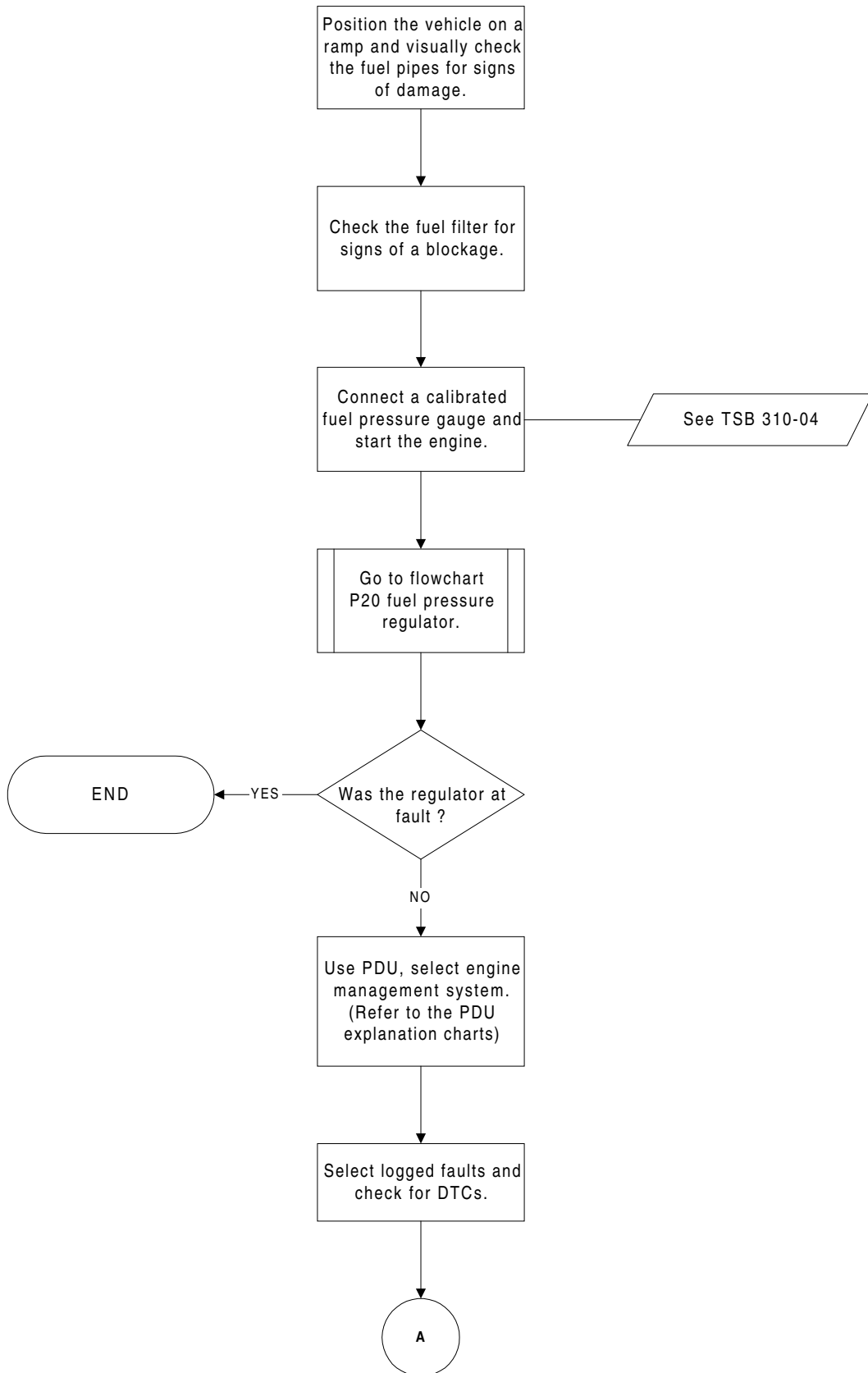
P20 - FUEL PRESSURE REGULATOR DIAGNOSTIC FLOW CHART - CONT.



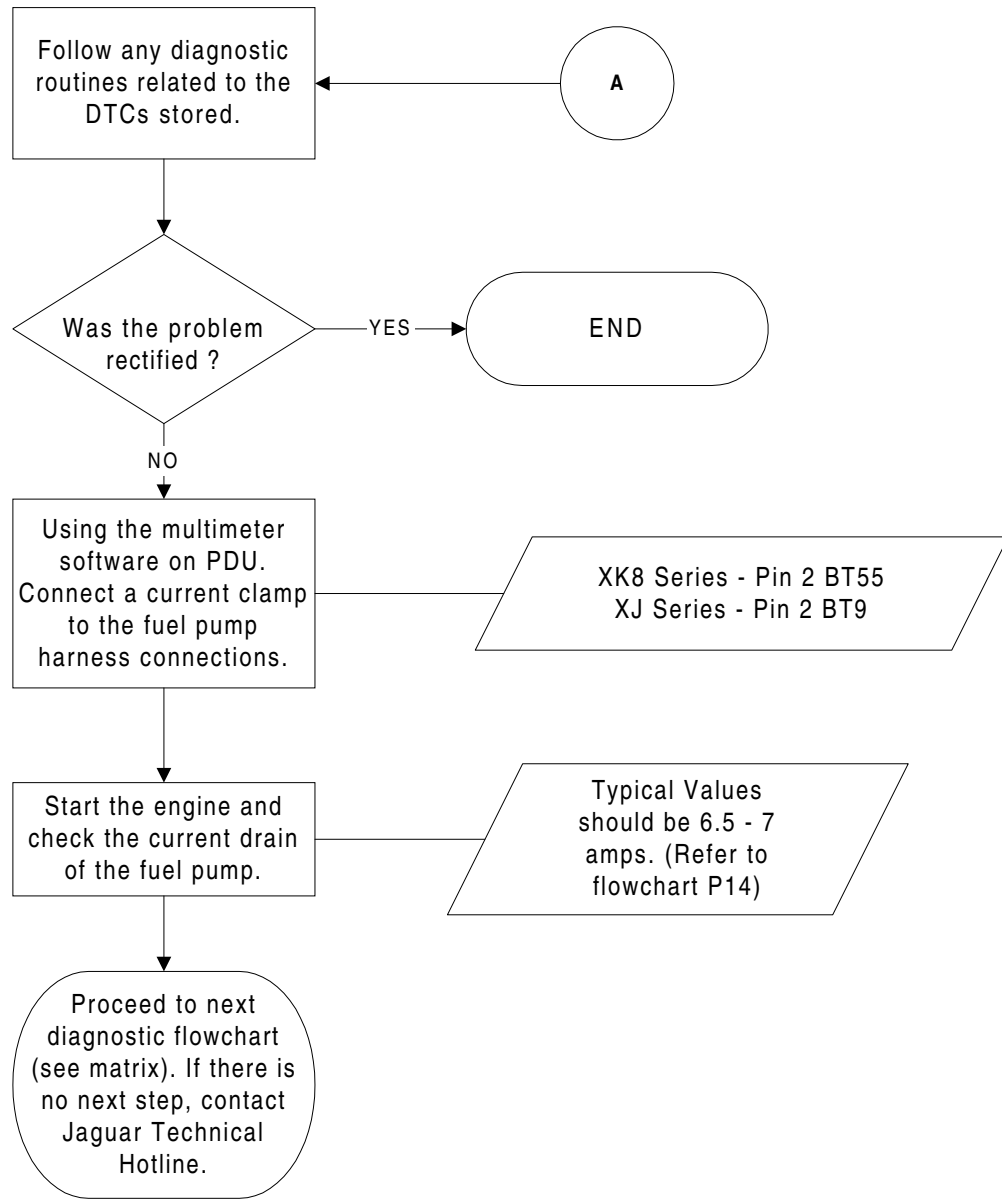
P20 - FUEL PRESSURE REGULATOR DIAGNOSTIC FLOW CHART - CONT.



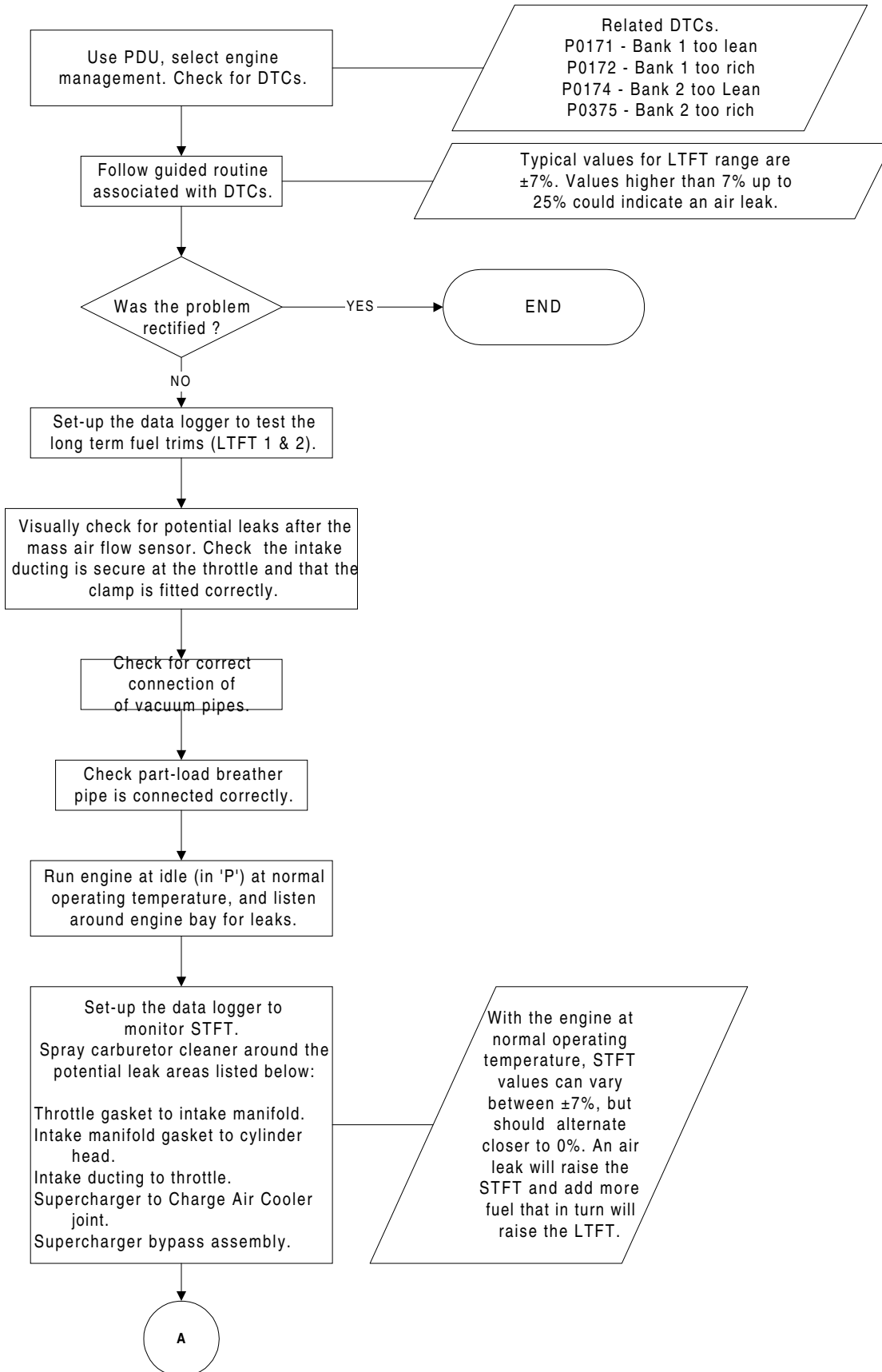
P21 - FUEL LINES DIAGNOSTIC FLOW CHART



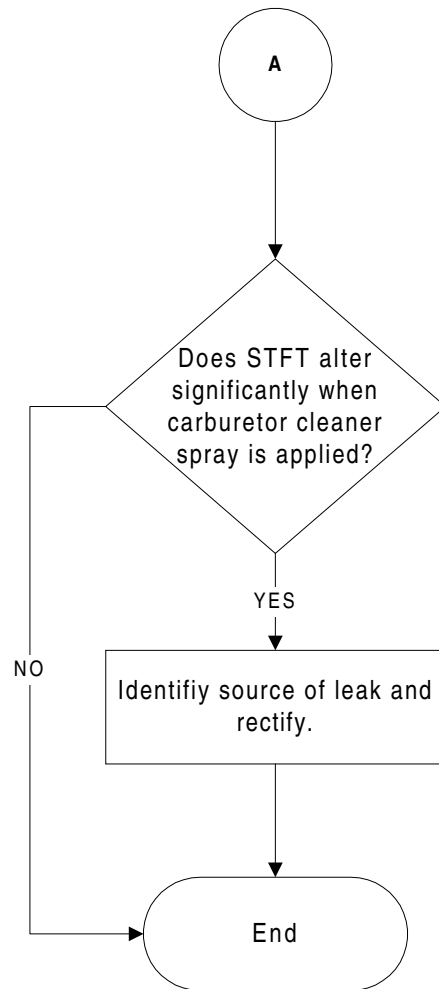
P21 - FUEL LINES DIAGNOSTIC FLOW CHART - CONT.



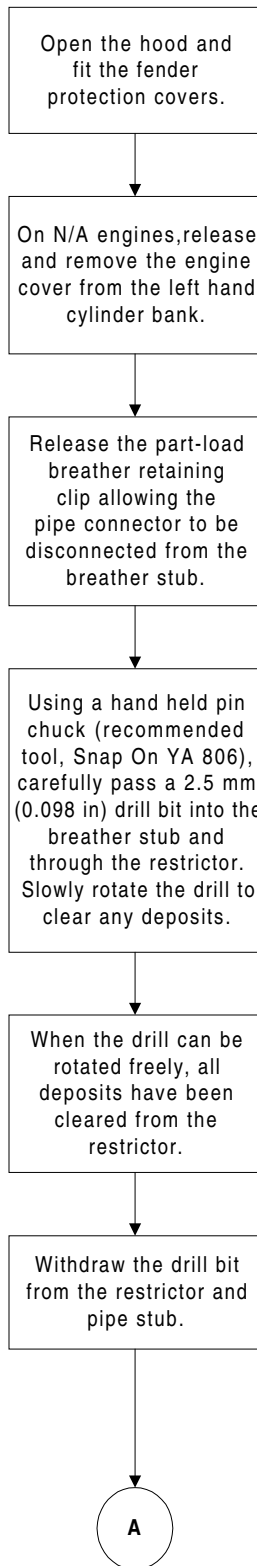
P23 - AIR LEAKAGE DIAGNOSTIC FLOW CHART



P23 - AIR LEAKAGE DIAGNOSTIC FLOW CHART - CONT.

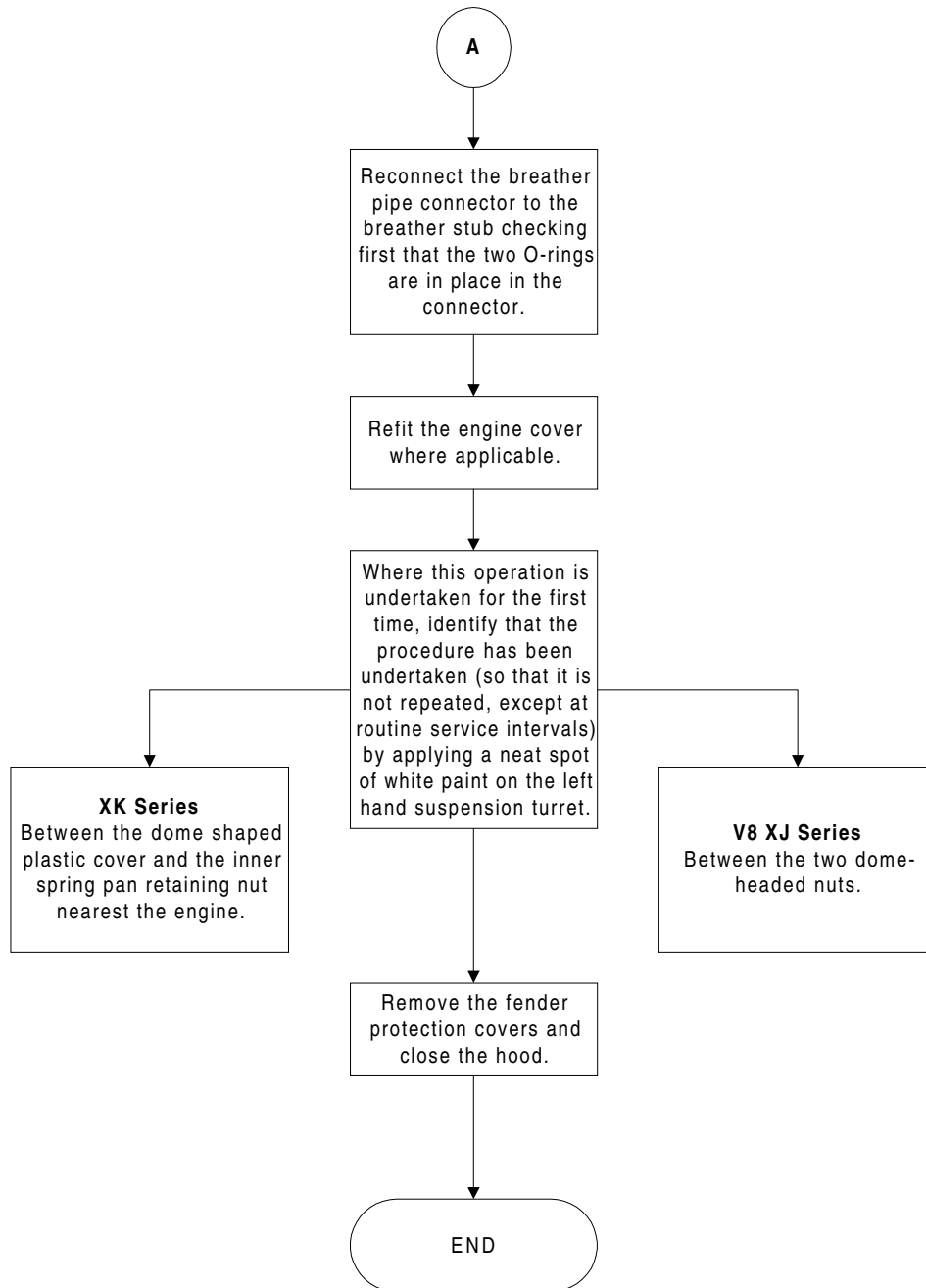


P29 - BLOCKED PART LOAD BREATHER CLEANING PROCEDURE



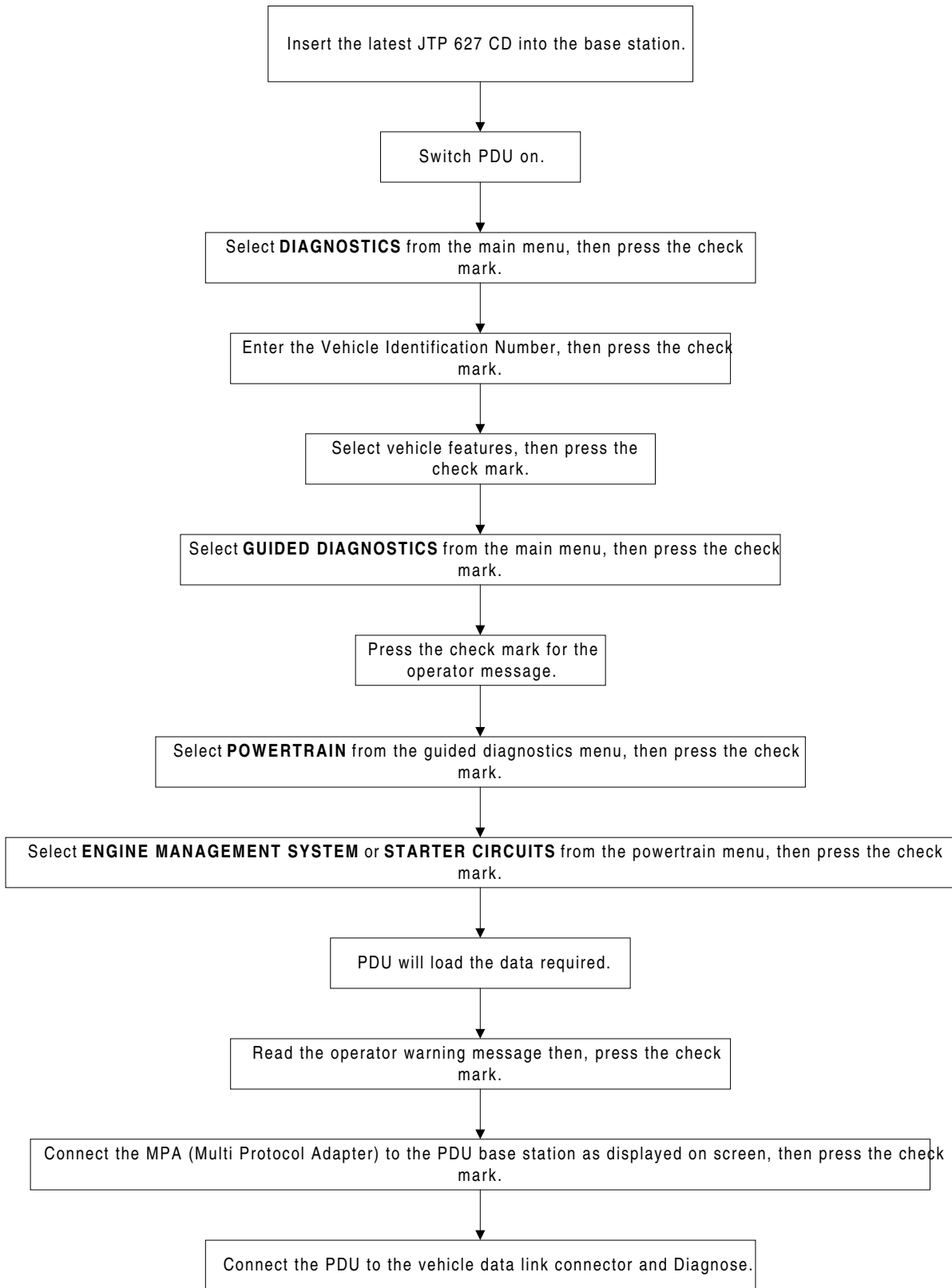
Note: In no circumstances must a power drill be used, it should always be rotated by hand. The drill bit should never exceed 2.5 mm (0.098 in)

P29 - BLOCKED PART LOAD BREATHER CLEANING PROCEDURE - CONT.

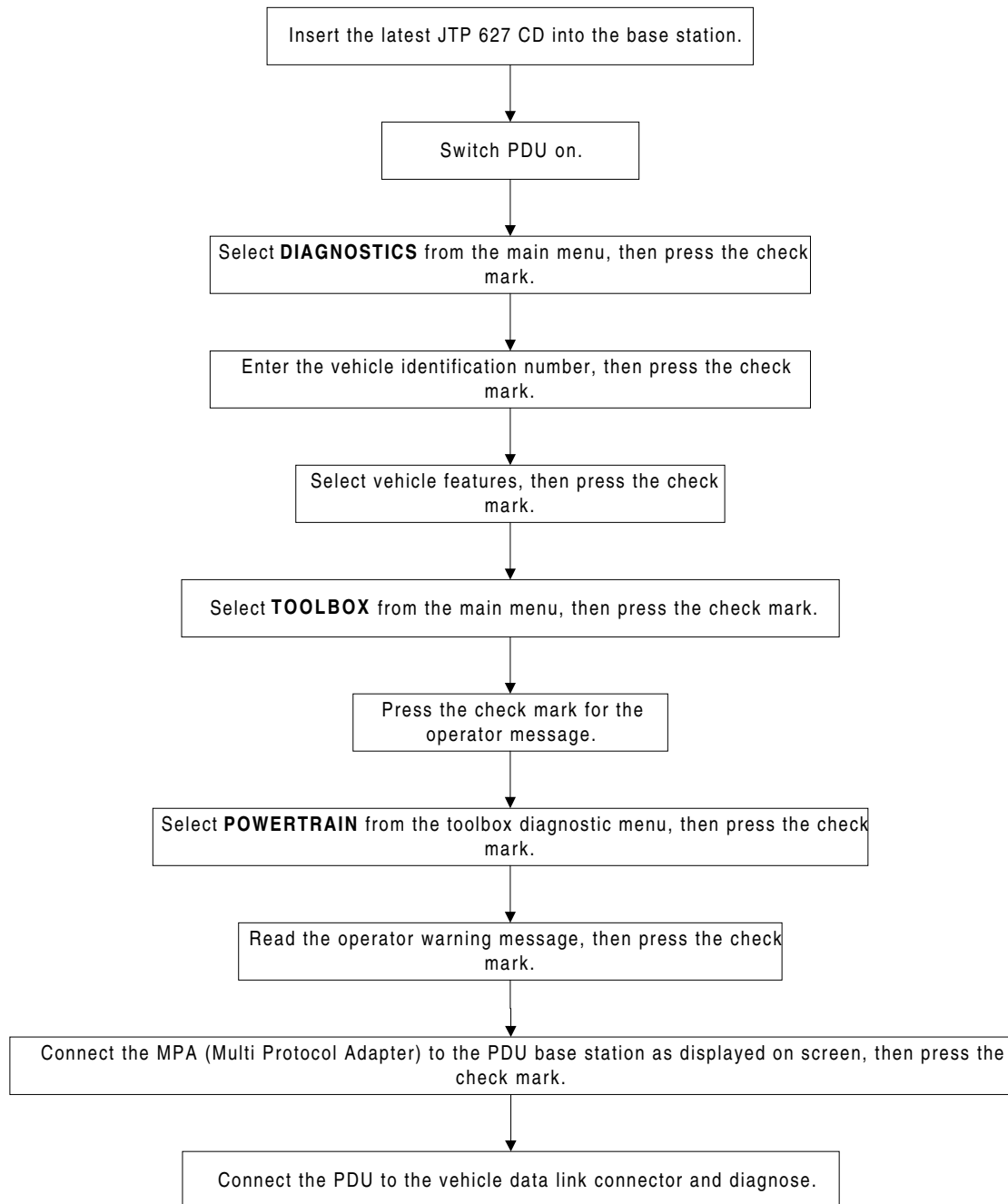


Note: The information in this flowchart has been taken from Technical Bulletin 600-03 (Service Action S474). Use the chart in conjunction with Technical Bulletin 600-03.

PDU EXPLANATION FLOW CHART GUIDED - DIAGNOSTICS



PDU EXPLANATION FLOW CHART - TOOLBOX



PDU EXPLANATION FLOW CHART - MULTIMETER

