RENAULT

Workshop Repair Manual

N.T. 2863A

All types

Basic manual: M.R. 302 - M.R. 307 - M.R. 311 - M.R. 312
M.R. 291 - M.R. 293

INSTRUMENT PANEL

77 11 196 407 OCTOBER 1997 **Edition Anglaise**

Contents

FAULT FINDING - INTRODUCTION

PRECAUTION

When carrying out checks using a multimeter, avoid using a contact point on the connectors the size of which could damage the clips and result in poor contact.

For all checks and measurements carried out on the 30-way connector of certain instrument panels, always use bornier Elé**. 1302**.

Bornier **Elé. 1302** enables:

- continuities to be checked. To do this, simply connect the bornier to the 30-way instrument panel connector or to the connector at the vehicle wiring end,

- voltages or frequencies to be measured, frequencies to be generated, etc... To do this, connect the bornier in series between the instrument panel unit and the connector at the vehicle wiring end.

FAULT FINDING - CUSTOMER COMPLAINTS

NOTES	Refer to the "Fault finding - Introduction" section before beginning this fault finding procedure.

DIESEL REV COUNTER PROBLEM

- No needle movement or needle vibrates or oscillates — CHART 1

PETROL REV COUNTER PROBLEM

- No needle movement or needle vibrates or oscillates — CHART 2

SPEEDOMETER PROBLEM (vehicles fitted with a speedometer cable)

- Needle oscillates or total mileage recorder is noisy — CHART 3
- No needle movement and total mileage recorder does not operate — CHART 4
- Needle sticks (for example: at 80 km / h) but total mileage recorder operates — CHART 5
- No needle movement but total mileage recorder operates or needle movement correct but total mileage recorder does not operate — CHART 6

SPEEDOMETER PROBLEM (vehicles fitted with an electric speedometer)

- Needle vibrates or oscillates or no needle movement and total mileage recorder does not operate — CHART 7
- No needle movement, but total mileage recorder operates or needle movement correct but total mileage recorder does not operate — CHART 8

FUEL LEVEL RECEIVER PROBLEM

- No fuel level information on needle receiver (tank not empty) — CHART 9
- Fuel level receiver needle remains stuck in the maximum position (ignition on) when the tank is not full — CHART 10

FAULT FINDING - CUSTOMER COMPLAINTS

NOTES	Refer to the "Fault finding - Introduction" section before beginning this fault finding procedure.

OIL LEVEL RECEIVER PROBLEM

- No needle movement and no lighting of the level and temperature scale — CHART 11
- Needle operates correctly but scale does not light up — CHART 12
- Lighting of the scale correct but no needle movement — CHART 13
- Graduation of combined oil level indicator does not light up when ignition is switched on and display passes straight to general total mileage recorder (MEGANE except Scénic) — CHART 14

COOLANT TEMPERATURE RECEIVER PROBLEM

- No needle movement — CHART 15

FAULT FINDING CHARTS

CHART 1	DIESEL REV COUNTER PROBLEM No rev counter needle movement or needle vibrates or oscillates on the instrument panel

NOTES	Check that the system connectors are engaged correctly. Take care not to damage the connectors during checks. Check that the engine earth is in good condition.

Is the vehicle concerned a SAFRANE with engine G8T ?

no → A

yes ↓

Disconnect the injection computer connector which includes the "rev counter" information. Connect the XR25.
Use the frequency generation function (key **G**, output terminal **G**). Connect the frequency generator wire to the "**rev counter**" **information track** of the connector (connector wiring end).
With the ignition on, enter on the XR25 :

- G 4 , the rev counter should indicate ~ **860 rpm**.
- G 6 , the rev counter should indicate ~ **1250 rpm**.
- G 8 , the rev counter should indicate ~ **1700 rpm**.

Does the rev counter needle indicate these values?

yes → Refer to the "Diesel injection" fault finding procedure which corresponds to the vehicle.

no ↓

Check the continuity and absence of short circuits of the electrical wiring between the injection computer "**rev counter**" **output** and the **instrument panel**.
Is the electrical wiring in good condition?

no → Repair the electrical wiring.

yes ↓

Change the rev counter or the instrument panel depending on instrument panel model.

AFTER REPAIR	Connect the XR25 and use the diesel injection fault finding fiche. With the engine running, check that the engine speed value read on the rev counter corresponds to the value displayed on the XR25. Check that all the instrument panel functions operate correctly.

ntt1106.0

FAULT FINDING CHARTS

CHART 1
CONT

A

Check whether the "**rev counter**" output connector located on the alternator is connected correctly.
Is the connector connected correctly?

no → Connect the connector on the alternator correctly.

yes

Disconnect the "**rev counter information**" connector located on the alternator.
Connect the XR25.
Use the frequency generation function (key **G**, output terminal **G**). Connect the frequency generator wire to the "**rev counter**" **information track** of the connector (connector wiring end).
With the ignition on, enter on the XR25 :

- G 4 , the rev counter should indicate ~ **860 rpm**.
- G 6 , the rev counter should indicate ~ **1250 rpm**.
- G 8 , the rev counter should indicate ~ **1700 rpm**.

Does the rev counter needle indicate these values?

yes → Change the alternator.

no

Check the continuity and absence of short circuits of the electrical wiring between the alternator "**rev counter**" **output** and the **instrument panel**.
Is the electrical wiring in good condition?

no → Repair the electrical wiring.

yes

Change the rev counter or the instrument panel depending on instrument panel model.

AFTER REPAIR	Adjust the various instrument panel functions (clock, etc...) if necessary. Check that all the instrument panel functions operate correctly.

ntt1106.0

FAULT FINDING CHARTS

CHART 2	PETROL REV COUNTER PROBLEM No rev counter needle movement or needle vibrates or oscillates on the instrument panel

NOTES	Check that the system connectors are engaged correctly. Take care not to damage the connectors during checks. Check that the engine earth is in good condition.

Connect the XR25. Disconnect the injection computer connector and connect the corresponding bornier in its place.
Use the frequency generation function (key **G**, output terminal **G**). Connect the frequency generator wire to the "rev counter information" output on the bornier.
With the ignition on, enter on the XR25 :

- G 1 , the rev counter should indicate: ~ **1500 rpm** for 4, 5 and 6 cylinder engines (L7X).
  ~ **1000 rpm** for 6 cylinder engines (Z7X).
- G 3 , the rev counter should indicate: ~ **4500 rpm** for 4, 5 and 6 cylinder engines (L7X).
  ~ **3000 rpm** for 6 cylinder engines (Z7X).
- G 5 , the rev counter should indicate: ~ **7500 rpm** for 4, 5 and 6 cylinder engines (L7X).
  ~ **5000 rpm** for 6 cylinder engines (Z7X).

Does the rev counter needle indicate these values?

yes → Refer to the "Petrol injection" fault finding procedure which corresponds to the vehicle or change the electronic ignition module depending on the vehicle.

no ↓

Check the continuity and absence of short circuits of the electrical wiring between the injection computer "**rev counter**" **output** and the **instrument panel**.
Is the electrical wiring in good condition?

no → Repair the electrical wiring.

yes ↓

Change the rev counter or the instrument panel depending on instrument panel model.

AFTER REPAIR	Adjust the various instrument panel functions (clock, etc...) if necessary. Check that all the instrument panel functions operate correctly.

ntt1106.0

FAULT FINDING CHARTS

CHART 3	SPEEDOMETER PROBLEM (vehicles fitted with a speedometer cable) Needle oscillates or total mileage recorder is noisy

NOTES	Check that the system connectors are engaged correctly. Before beginning this fault finding procedure, set the trip recorder to zero then check whether the customer complaint persists.

Check that the whole length of the cable is free (no stress) with the largest radii of curvature possible.
Repair or change the speedometer cable if necessary.
Reminder: the addition of grease to the cable at the speedometer end is prohibited as grease rises and causes the needle to stick.

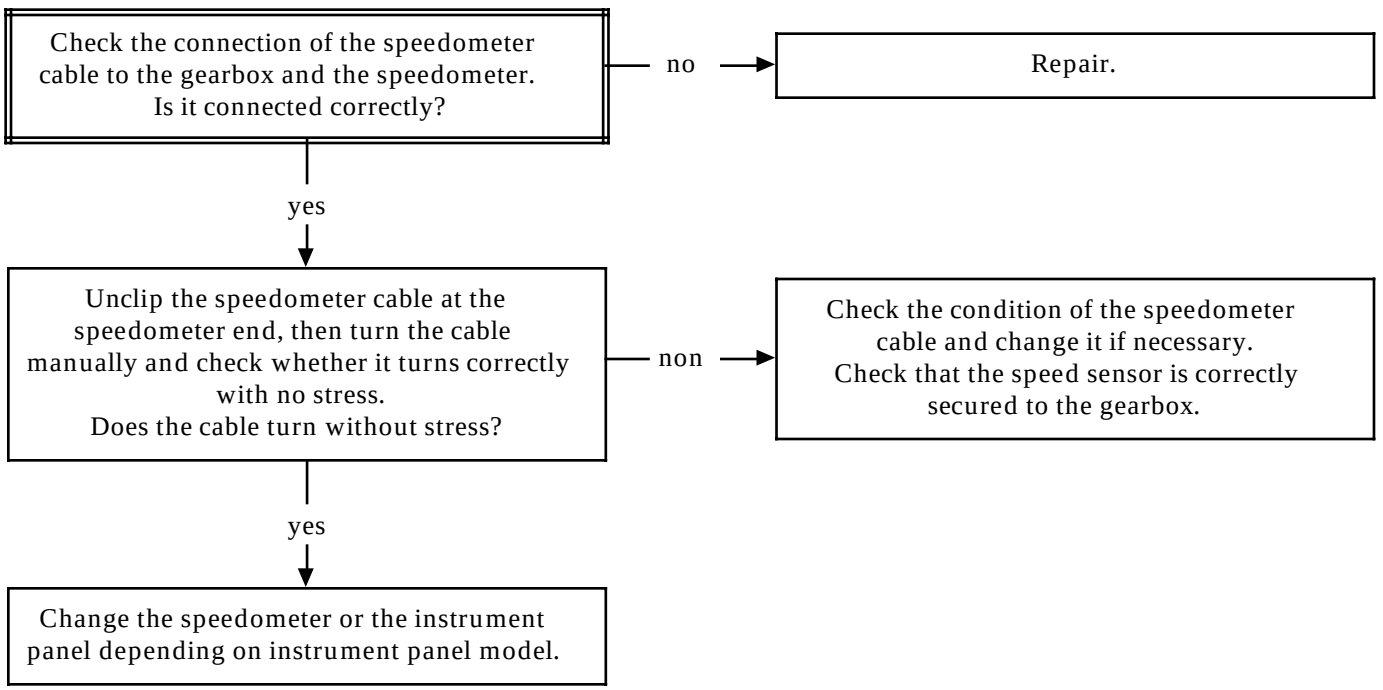
If the customer complaint persists, change the speedometer or the instrument panel depending on instrument panel model.

AFTER REPAIR	Adjust the various instrument panel functions (clock, etc...) if necessary. Check that all the instrument panel functions operate correctly.

FAULT FINDING CHARTS

CHART 4	SPEEDOMETER PROBLEM (vehicles fitted with a speedometer cable) No needle movement and total mileage recorder does not operate

NOTES	Check that the system connectors are engaged correctly. Before beginning this fault finding procedure, set the trip recorder to zero then check whether the customer complaint persists.



AFTER REPAIR	Adjust the various instrument panel functions (clock, etc...) if necessary. Check that all the instrument panel functions operate correctly.

ntt1106.0

FAULT FINDING CHARTS

CHART 5	SPEEDOMETER PROBLEM (vehicles fitted with a speedometer cable) Needle sticks (eg.: at 80 km/h) but total mileage recorder operates

NOTES	Check that the system connectors are engaged correctly. Before beginning this fault finding procedure, set the trip recorder to zero then check whether the customer complaint persists.

Check that the whole length of the cable is free (no stress) with the largest radii of curvature possible.
Repair or change the speedometer cable if necessary.
Reminder: the addition of grease to the cable at the speedometer end is prohibited as grease rises and causes the needle to stick.

If the customer complaint persists, change the speedometer or the instrument panel depending on instrument panel model.

AFTER REPAIR	Adjust the various instrument panel functions (clock, etc...) if necessary. Check that all the instrument panel functions operate correctly.

ntt1106.0

FAULT FINDING CHARTS

CHART 6	**SPEEDOMETER PROBLEM (vehicles fitted with a speedometer cable). No needle movement, but total mileage recorder operates or needle movement correct but total mileage recorder does not operate**

NOTES	Check that the system connectors are engaged correctly. **Reminder**: the addition of grease to the cable at the speedometer end is prohibited as grease rises and causes the needle to stick.

If the customer complaint persists, change the speedometer or the instrument panel depending on instrument panel model.

AFTER REPAIR	Adjust the various instrument panel functions (clock, etc...) if necessary. Check that all the instrument panel functions operate correctly.

ntt1106.0

FAULT FINDING CHARTS

CHART 7	**SPEEDOMETER PROBLEM (vehicles fitted with an electric speedometer). Needle vibrates or oscillates or no needle movement and total mileage recorder does not operate**

NOTES	Check that the system connectors are engaged correctly. Take care not to damage the connectors during checks.

Check that the speed sensor is connected and secured correctly.
Is the speed sensor secured correctly?

no → Secure the speed sensor correctly.

yes ↓

Disconnect the speed sensor connector.
Connect the XR25.
Use the frequency generation function (key **G**, output terminal **G**). Connect the frequency generator wire to the "**vehicle speed**" input of the connector (connector wiring end).
With the ignition on, enter on the XR25:

- G 1 , the rev counter should indicate ~ **36 rpm**.
- G 3 , the rev counter should indicate ~ **108 rpm**.
- G 5 , the rev counter should indicate ~ **180 rpm**.

Does the rev counter needle indicate these values without vibrating or oscillating?

yes → Change the speed sensor.

no ↓

Check the condition of the electrical wiring between the **speed sensor and the "vehicle speed" input** on the instrument panel.
Is the electrical wiring in good condition?

no → Repair the electrical wiring between the instrument panel and the speed sensor.

yes ↓

Change the speedometer or the instrument panel depending on instrument panel model.

AFTER REPAIR	Adjust the various instrument panel functions (clock, etc...) if necessary. Check that all the instrument panel functions operate correctly.

ntt1106.0

FAULT FINDING CHARTS

CHART 8	**SPEEDOMETER PROBLEM (vehicles fitted with an electric speedometer). No needle movement, but total mileage recorder operates or needle movement correct but total mileage recorder does not operate.**

NOTES	Check that the system connectors are engaged correctly. Take care not to damage the connectors during checks.

Check that the speed sensor is connected and secured correctly.
Is the speed sensor secured correctly?

no → Secure the speed sensor correctly.

yes ↓

Disconnect the speed sensor connector.
Connect the XR25.
Use the frequency generation function (key **G**, output terminal **G**). Connect the frequency generator wire to the "**vehicle speed**" input of the connector (connector wiring end).
With the ignition on, enter on the XR25:

- G 1 , the rev counter should indicate ~ **36 rpm**.
- G 3 , the rev counter should indicate ~ **108 rpm**.
- G 5 , the rev counter should indicate ~ **180 rpm**.

Does the rev counter needle indicate these values without vibrating or oscillating?

yes → Change the speed sensor.

no ↓

Check the condition of the electrical wiring between the **speed sensor and the "vehicle speed" input** on the instrument panel.
Is the electrical wiring in good condition?

no → Repair the electrical wiring between the instrument panel and the speed sensor.

yes ↓

Change the speedometer or the instrument panel depending on instrument panel model.

AFTER REPAIR	Adjust the various instrument panel functions (clock, etc...) if necessary. Check that all the instrument panel functions operate correctly.

ntt1106.0

FAULT FINDING CHARTS

CHART 9	FUEL LEVEL PROBLEM No fuel level information on needle receiver (tank not empty)

NOTES	Check that the system connectors are engaged correctly. Take care not to damage the connectors during checks.

Check that the gauge connector is connected correctly.
Is the connector connected correctly?

no → Connect the connector correctly.

yes ↓

With the gauge connector disconnected and the ignition on, shunt the tracks of the connector which correspond to **earth** and "**gauge information**" to the instrument panel (wiring end of the connector).
Does the receiver needle rise to maximum?

yes → Check the condition of the fuel gauge and change it if necessary.

no ↓

Check the continuity of the electrical wiring which corresponds to:
- the **gauge earth**,
- the "**gauge information**" to the instrument panel.

Is the electrical wiring in good condition?

no → Repair the faulty electrical wiring.

yes ↓

Check the condition of the connector on the instrument panel and its pins.
Is the connector in good condition?

no → Change the connector.

yes ↓

Change the fuel level receiver or the instrument panel depending on instrument panel model.

AFTER REPAIR	Adjust the various instrument panel functions (clock, etc...) if necessary. Check that all the instrument panel functions operate correctly.

ntt1106.0

FAULT FINDING CHARTS

CHART 10	FUEL LEVEL PROBLEM Fuel level receiver needle remains stuck in the maximum position..... (ignition on), tank not full

NOTES	Check that the system connectors are engaged correctly. Take care not to damage the connectors during checks.

Check that the gauge connector is connected correctly.
Is the connector connected correctly?

no → Connect the connector correctly.

yes ↓

With the ignition on, disconnect the fuel gauge connector. Does the needle fall to the minimum position?

yes → Check the condition of the fuel gauge and change it if necessary.

no ↓

Check that there are no short circuits of the electrical wiring which corresponds to:
- the **gauge earth**,
- the "**gauge information**" to the instrument panel.

Is the electrical wiring in good condition?

no → Repair the faulty electrical wiring.

yes ↓

Check the condition of the connector on the instrument panel and its pins.
Is the connector in good condition?

no → Change the connector.

yes ↓

Change the fuel level receiver or the instrument panel depending on instrument panel model.

AFTER REPAIR	Adjust the various instrument panel functions (clock, etc...) if necessary. Check that all the instrument panel functions operate correctly.

ntt1106.0

FAULT FINDING CHARTS

CHART 11	OIL LEVEL RECEIVER PROBLEM No needle movement and no lighting of the level and temperature scale

NOTES	None

Change the oil level receiver or the instrument panel depending on instrument panel model.

AFTER REPAIR	Adjust the various instrument panel functions (clock, etc...) if necessary. Check that all the instrument panel functions operate correctly.

ntt1106.0

FAULT FINDING CHARTS

CHART 12	OIL LEVEL RECEIVER PROBLEM Needle operates correctly, but scale does not light up

NOTES	None

Check the condition of the bulb on the instrument panel (only in the case of instrument panels fitted with bulbs). Is the bulb in good condition?

no → Change the bulb.

yes ↓

Change the oil level receiver or the instrument panel depending on instrument panel model.

AFTER REPAIR	Adjust the various instrument panel functions (clock, etc...) if necessary. Check that all the instrument panel functions operate correctly.

ntt1106.0

FAULT FINDING CHARTS

CHART 13	OIL LEVEL RECEIVER PROBLEM Lighting of the scale correct, but no needle movement

NOTES	Take care not to damage the connectors during checks.

Check that the oil level sensor is connected correctly.
Is the connector connected correctly?

- no → Connect the connector correctly.
- yes ↓

Disconnect the oil level sensor connector, then measure the **resistance at its terminals**.
The resistance measured should be **5 ohms < R < 19 ohms**.
Is the resistance measured between these values?

- no → Change the oil level sensor.
- yes ↓

Leave the oil level sensor connector disconnected. Check whether there is a short circuit to earth on the terminals of the oil level sensor connector.
Is there a short circuit?

- yes → Change the oil level sensor.
- no ↓

Check the continuity and absence of short circuits between the electrical wiring of the oil level sensor connector and the instrument panel.
Is the electrical wiring in good condition?

- no → Repair the faulty electrical wiring.
- yes ↓

Change the oil level receiver or the instrument panel depending on instrument panel model.

AFTER REPAIR	Adjust the various instrument panel functions (clock, etc...) if necessary. Check that all the instrument panel functions operate correctly.

ntt1106.0

FAULT FINDING CHARTS

CHART 14	OIL LEVEL RECEIVER PROBLEM **Graduation of combined oil level indicator does not light up when ignition is switched on and display passes straight to general total mileage recorder**

NOTES	The fault finding procedure which follows only applies to Mégane vehicles. Take care not to damage the connectors during checks.

Check that the oil level sensor is connected correctly.
Is the connector connected correctly?

no → Connect the connector correctly.

yes ↓

Disconnect the oil level sensor connector, then measure the **resistance at its terminals**.
The resistance measured should be **4 ohms < R < 22 ohms**.
Is the resistance measured between these values?

no → Change the oil level sensor.

yes ↓

Disconnect the oil level sensor connector.
Check whether there is a short circuit to earth on the terminals of the oil level sensor connector.
Is there a short circuit?

yes → Change the oil level sensor.

no ↓

Check the continuity and absence of short circuits between the electrical wiring of the oil level sensor connector and the instrument panel.
Is the electrical wiring in good condition?

no → Repair the faulty electrical wiring.

yes ↓

Change the instrument panel.

AFTER REPAIR	Adjust the various instrument panel functions (clock, etc...) if necessary. Check that all the instrument panel functions operate correctly.

ntt1106.0

FAULT FINDING CHARTS

CHART 15	COOLANT TEMPERATURE RECEIVER PROBLEM No needle movement

NOTES	Take care not to damage the connectors during checks.

Check that the coolant temperature sensor connector is connected correctly.
Is the connector connected?

no → Connect the connector correctly.

yes ↓

Check that there are no short circuits of the electrical wiring which corresponds to:
- the **coolant temperature sensor earth**,
- the **sensor coolant temperature information output**.

Is the electrical wiring in good condition?

no → Repair the faulty electrical wiring.

yes ↓

With the ignition on, connect the sensor "**coolant temperature information**" **output** to earth and check that the needle rises to the maximum position. Leave the ignition on and disconnect the coolant temperature sensor and check that the needle falls to the minimum position.
Does the needle rise to the maximum position and fall to the minimum position during these tests?

no → A

yes ↓

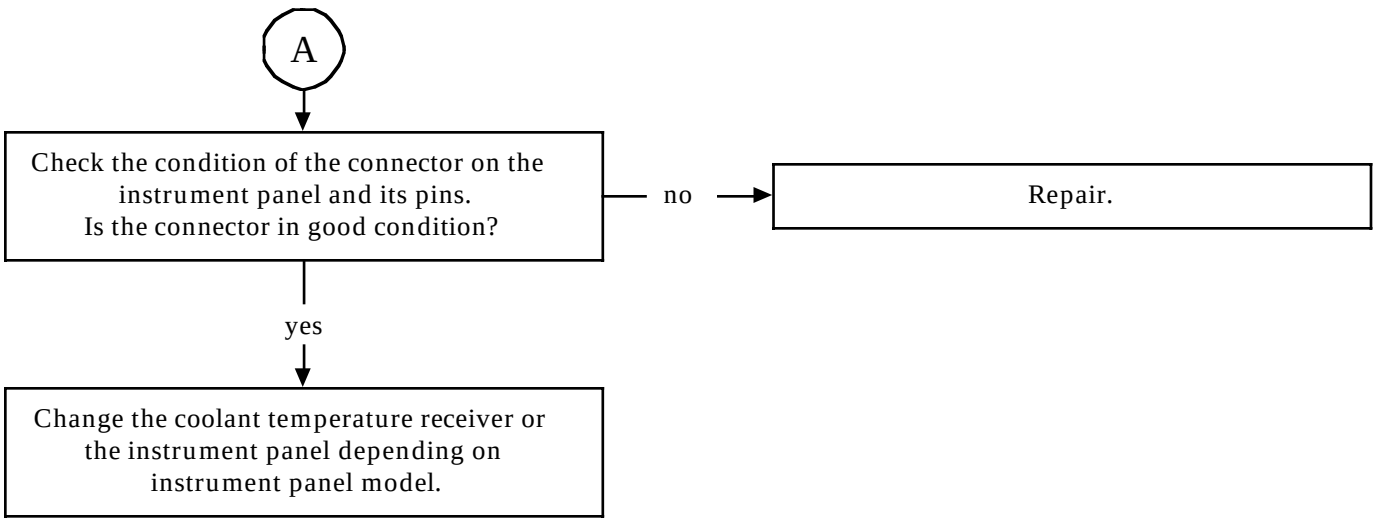
Change the coolant temperature sensor.

AFTER REPAIR	Adjust the various instrument panel functions (clock, etc...) if necessary. Check that all the instrument panel functions operate correctly.

ntt1106.0

FAULT FINDING CHARTS

CHART 15 CONT	



AFTER REPAIR	Adjust the various instrument panel functions (clock, etc...) if necessary. Check that all the instrument panel functions operate correctly.

ntt1106.0

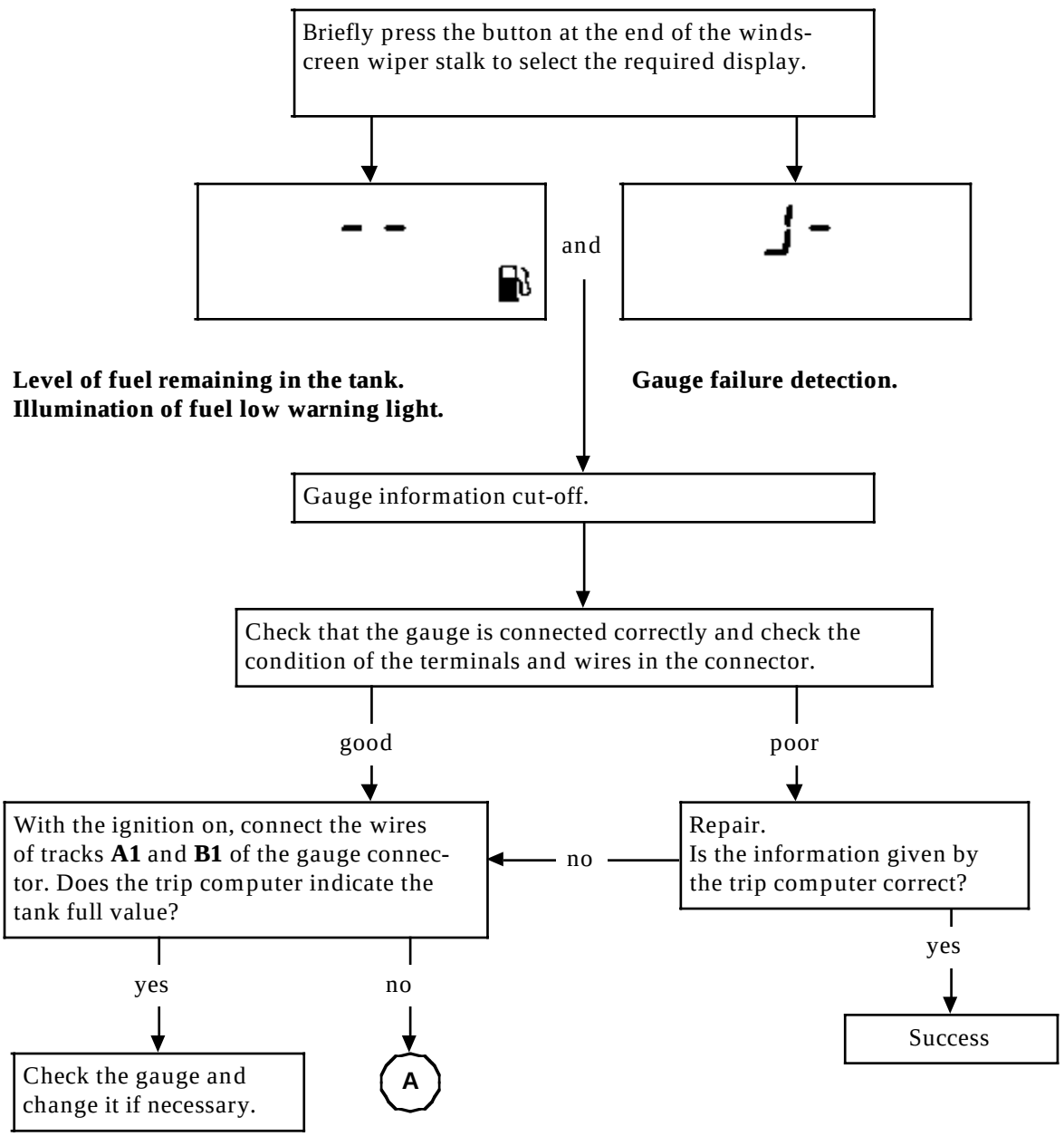
FAULT FINDING - CUSTOMER COMPLAINTS

NOTES	Refer to the "Fault finding - Introduction" section before beginning this fault finding procedure.

FAULT FINDING CHARTS

CHART 1	FLASHING DASHES DISPLAYED IN PLACE OF RANGE

NOTES	Instrument panel fault finding procedures are carried out with the ignition on. Change to fault finding sequence: - keep the zero reset / reset / trip computer advance button at the end of the windscreen wiper stalk pressed and switch on the ignition.

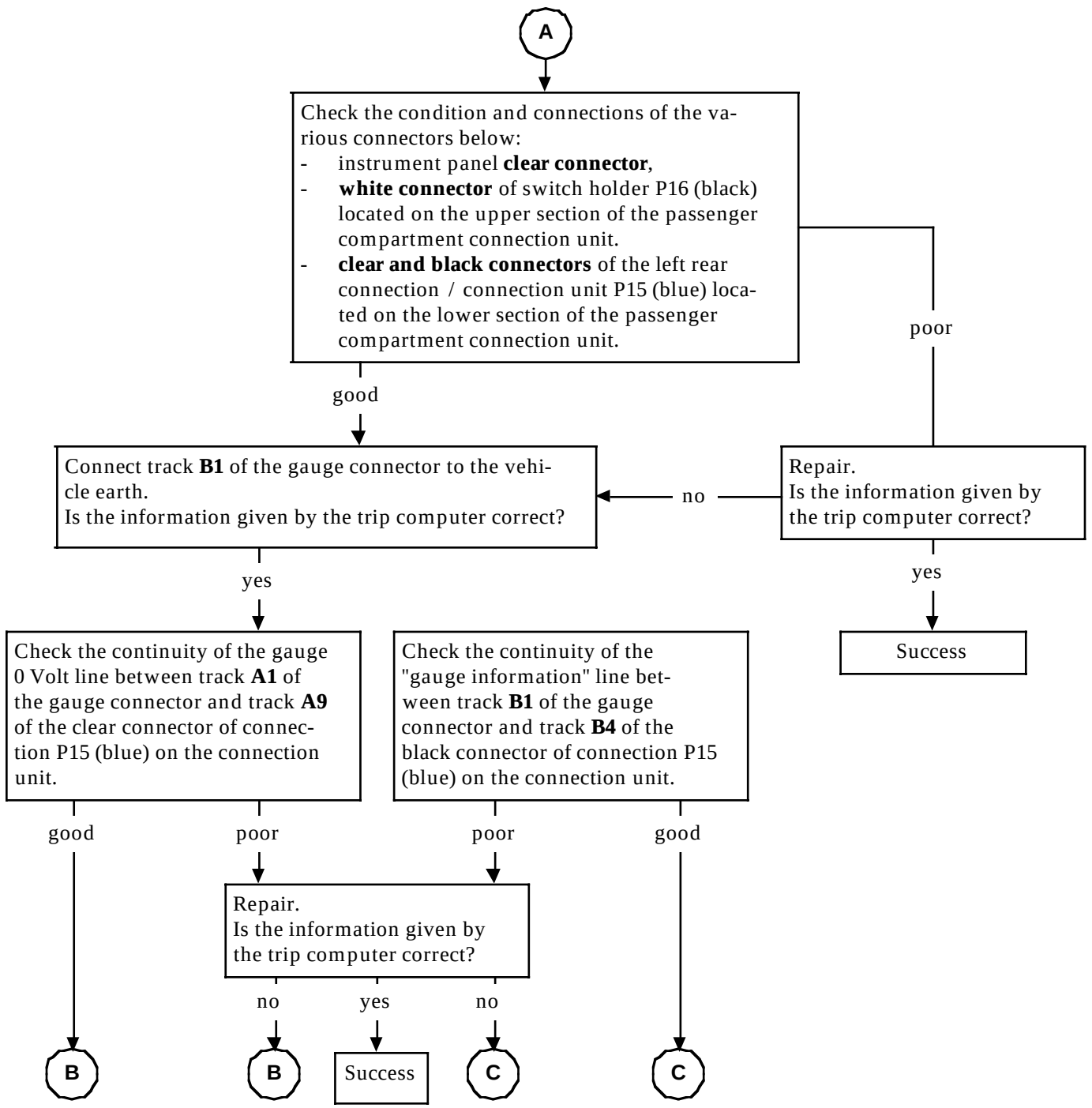


AFTER REPAIR	Adjust the various instrument panel functions (clock, etc...) if necessary. Check that all the instrument panel functions operate correctly.

ntt1106.0

FAULT FINDING CHARTS

CHART 1
CONT 1

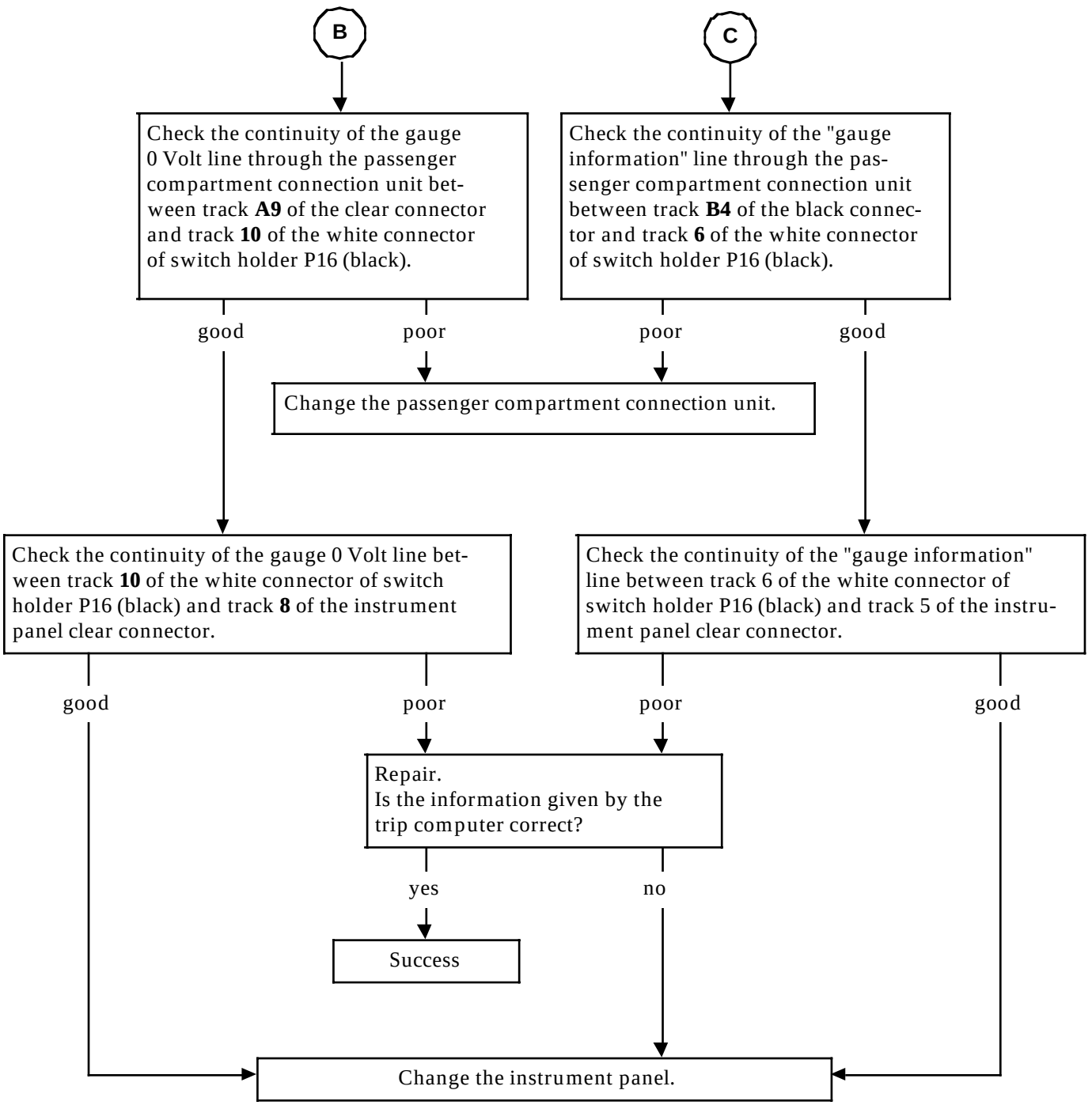


AFTER REPAIR	Adjust the various instrument panel functions (clock, etc...) if necessary. Check that all the instrument panel functions operate correctly.

ntt1106.0

FAULT FINDING CHARTS

CHART 1
CONT 2



AFTER REPAIR	Adjust the various instrument panel functions (clock, etc...) if necessary. Check that all the instrument panel functions operate correctly.

ntt1106.0

FAULT FINDING CHARTS

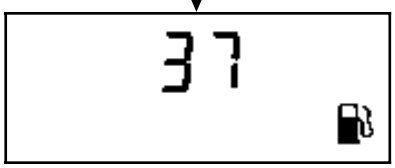
CHART 2	FLASHING DASHES SOMETIMES DISPLAYED IN PLACE OF RANGE

NOTES	Instrument panel fault finding procedures are carried out with the ignition on. Change to fault finding sequence: - keep the zero reset / reset / trip computer advance button at the end of the windscreen wiper stalk pressed and switch on the ignition.

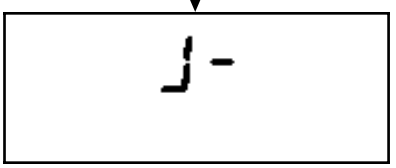
FLASHING DASHES SOMETIMES DISPLAYED IN PLACE OF RANGE

Change to fault finding sequence { keep the zero reset / reset / trip computer advance button at the end of the windscreen wiper stalk pressed and switch on the ignition.

Briefly press the button at the end of the windscreen wiper stalk to select the required display.



and



The value displayed (quantity of fuel remaining) should be the conversion of gauge resistance R.

If **280 Ω < R < 352 Ω** (reserve), 5 is displayed and the warning light is illuminated.

Gauge failure detection.

Intermittent failure.
Gauge information fault for more than 100 consecutive seconds.

Follow the procedure described above in CHART 1.

AFTER REPAIR	Adjust the various instrument panel functions (clock, etc...) if necessary. Check that all the instrument panel functions operate correctly.

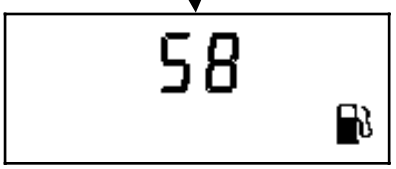
ntt1106.0

FAULT FINDING CHARTS

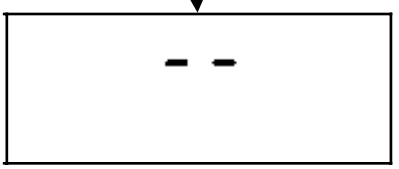
CHART 3	INCORRECT RANGE DISPLAY

NOTES	Instrument panel fault finding procedures are carried out with the ignition on. Change to fault finding sequence: - keep the zero reset / reset / trip computer advance button at the end of the windscreen wiper stalk pressed and switch on the ignition.

Briefly press the button at the end of the windscreen wiper stalk to select the required display.



...



Maximum fuel level displayed when the tank is not full.

No gauge failure detection.

Gauge information short circuit.

Disconnect the gauge.
Is the information given by the trip computer correct?

yes

Change the gauge.

no

yes

Check the insulation of track **B1** of the gauge connector from earth (wiring end).
Is track **B1** insulated?

no

yes → (A)

no → (B)

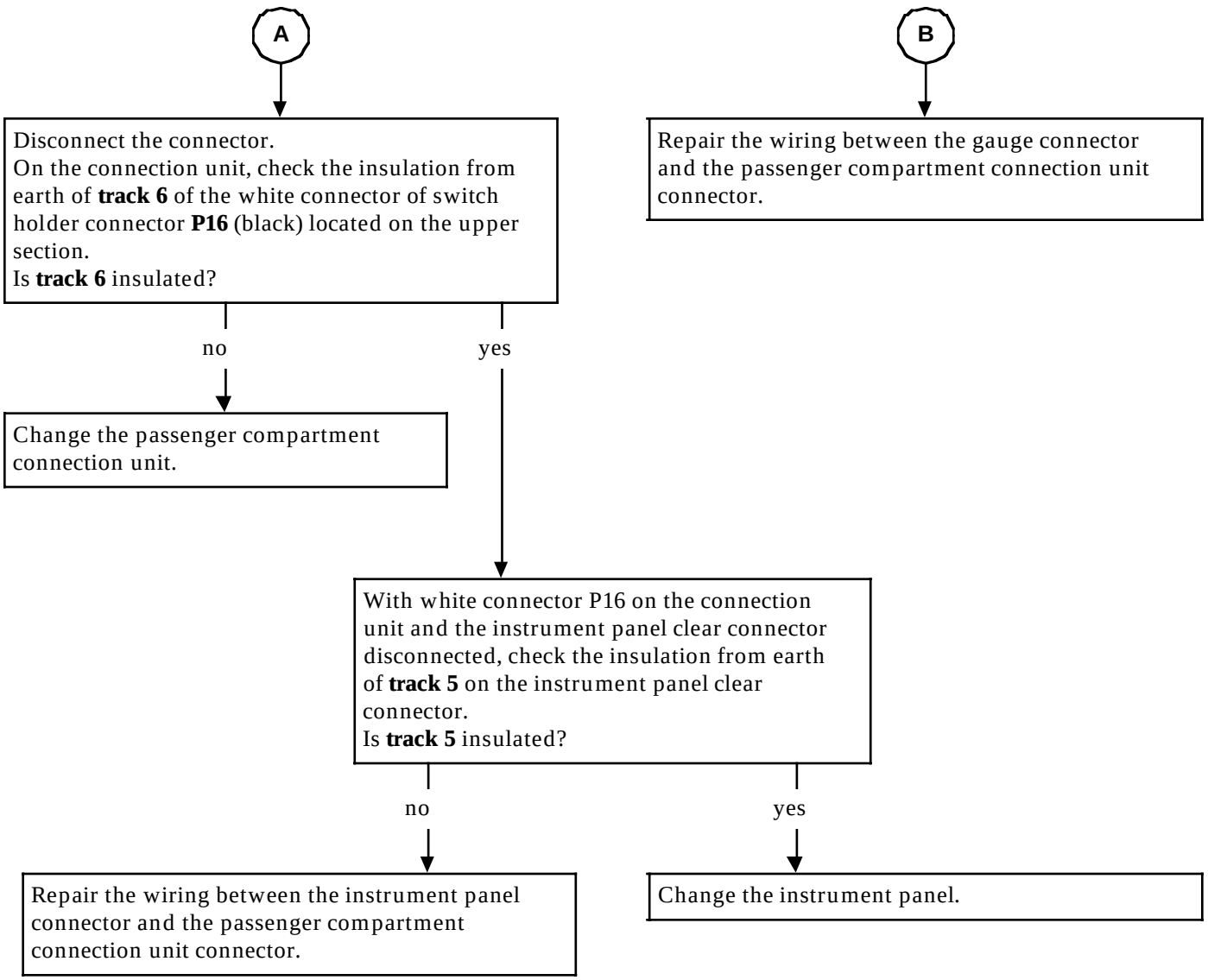
With the connector disconnected, check the insulation from earth of track **B4** on the black connector of connection P15 (blue) located on the lower section of the passenger compartment connection unit.
Is track **B4** insulated?

AFTER REPAIR	Adjust the various instrument panel functions (clock, etc...) if necessary. Check that all the instrument panel functions operate correctly.

ntt1106.0

FAULT FINDING CHARTS

CHART 3
CONT



AFTER REPAIR	Adjust the various instrument panel functions (clock, etc...) if necessary. Check that all the instrument panel functions operate correctly.

ntt1106.0

FAULT FINDING CHARTS

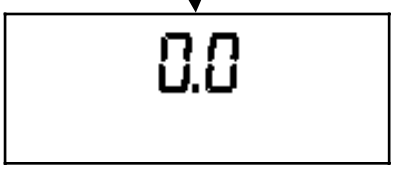
CHART 4	SEVERAL FUNCTIONS REPLACED BY FLASHING DASHES (except diesel)

NOTES	Instrument panel fault finding procedures are carried out with the ignition on. Change to fault finding sequence: - keep the zero reset / reset / trip computer advance button at the end of the windscreen wiper stalk pressed and switch on the ignition.

1st EXAMPLE	NOTES	None

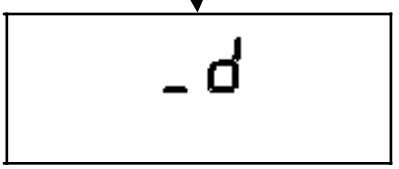
Briefly press the button at the end of the windscreen wiper stalk to select the required display.

Engine running



Current flow in litres/hour

and



Flow information failure detection

Flow information cut-off.

Check the condition of the connector on the injection computer and the clear connector on the instrument panel and check their connections.

Check the continuity and insulation of the flow information line between the injection computer and the clear connector on the instrument panel.

AFTER REPAIR	Adjust the various instrument panel functions (clock, etc...) if necessary. Check that all the instrument panel functions operate correctly.

ntt1106.0

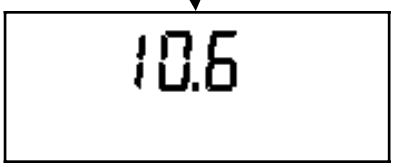
FAULT FINDING CHARTS

CHART 4 CONT	

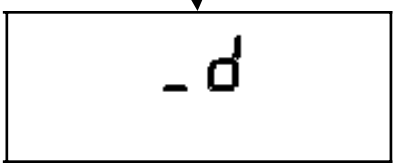
2nd EXAMPLE	NOTES	None

Briefly press the button at the end of the windscreen wiper stalk to select the required display.

Engine running



and



Current flow in litres/hour

Flow information failure detection

Intermittent failure. Flow information fault for more than 16 consecutive kilometres.

Check the condition of the connector on the injection computer and the clear connector on the instrument panel and check their connections.

Check the continuity and insulation of the flow information line between the injection computer and the clear connector on the instrument panel.

AFTER REPAIR	Adjust the various instrument panel functions (clock, etc...) if necessary. Check that all the instrument panel functions operate correctly.

ntt1106.0

FAULT FINDING CHARTS

CHART 5	OIL LEVEL DISPLAY INCORRECT BUT TOTAL DISTANCE DISPLAYED

NOTES	Instrument panel fault finding procedures are carried out with the ignition on. Change to fault finding sequence: - keep the zero reset / reset / trip computer advance button at the end of the windscreen wiper stalk pressed and switch on the ignition.

Check the connection of the sensor and its connectors. Are the connection and the connectors correct?

no → Connect the sensor correctly.

yes ↓

Disconnect the sensor connector and measure the resistance of the sensor.
The value should be: **5 Ω < R < 15 Ω**
Is this the resistance measured?

no → Change the sensor.

yes ↓

Check the continuity and insulation from **12 volts** and **earth** of the wiring between the sensor connector and the instrument panel.
Are the connections in good condition?

no → Repair the faulty wiring.

yes ↓

Change the instrument panel.

AFTER REPAIR	Adjust the various instrument panel functions (clock, etc...) if necessary. Check that all the instrument panel functions operate correctly.

ntt1106.0

FAULT FINDING CHARTS

CHART 6	NEITHER OIL LEVEL NOR TOTAL DISTANCE DISPLAYED

NOTES	Instrument panel fault finding procedures are carried out with the ignition on. Change to fault finding sequence: - keep the zero reset / reset / trip computer advance button at the end of the windscreen wiper stalk pressed and switch on the ignition.

Check the connection of the sensor and its connectors. Are the connection and the connectors correct?

no → Connect the sensor correctly.

yes ↓

Check the condition of the instrument panel bulb. Is the bulb in good condition?

no → Change the bulb.

yes ↓

Check that the warning lights are present.
Are the warning lights present?

no → Check the presence of the **+ after ignition supplies.**

yes ↓

Change the instrument panel.

AFTER REPAIR	Adjust the various instrument panel functions (clock, etc...) if necessary. Check that all the instrument panel functions operate correctly.

ntt1106.0

FAULT FINDING - CUSTOMER COMPLAINTS

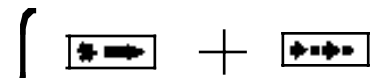
NOTES	Refer to the "Fault finding - Introduction" section starting the fault finding procedure.

SAFRANE EXCEPT GB VERSION

For vehicles fitted with an automatic gearbox:

CHART 1	SPEEDOMETER DOES NOT OPERATE AND INCORRECT TRIP COMPUTER AND TOTAL DISTANCE RECORDER DISPLAYS

NOTES	Instrument panel fault finding procedures are carried out with the ignition on.

Change to fault finding sequence:  For more than **2 seconds**

Check the movement of the needle to **40** at **40 km/h**

GOOD

Check:

- connection of the sensor cable to the gearbox,
- correct connection of the connector on the sensor,
- **+ after ignition** supply on **track A** and **earth** on **track C** on the sensor connector.

POOR

Change the instrument panel

POOR

Repair

GOOD

Check:

- the continuity and insulation of the wiring between the speed sensor and the instrument panel.

POOR

Repair

GOOD

Check that the instrument panel connector and its pins are in good condition.

GOOD

A

AFTER REPAIR	Adjust the various instrument panel functions (clock, etc...) if necessary. Check that all the instrument panel functions operate correctly.

ntt1106.0

FAULT FINDING CHARTS

CHART 1 CONT	

A

GOOD

Press key

to change to the second fault finding phase

Press key to select

Current speed in kilometres/hour (vehicle moving)

If O

Change the
speed sensor.

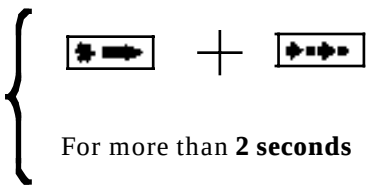
AFTER REPAIR	Adjust the various instrument panel functions (clock, etc...) if necessary. Check that all the instrument panel functions operate correctly.

ntt1106.0

FAULT FINDING CHARTS

CHART 2	REV COUNTER DOES NOT OPERATE

NOTES	Instrument panel fault finding procedures are carried out with the ignition on. Check the condition of the engine earth.

Change to fault finding sequence: 

For more than **2 seconds**

Check the movement of the needle to **1 000** at **1 000 rpm**

GOOD

Check the continuity and insulation of the rev counter information wire between the injection computer and the instrument panel or between the alternator and the instrument panel depending on the engine installed in the vehicle.

GOOD

Change the injection computer or the alternator depending on the engine.

POOR

Change the instrument panel

AFTER REPAIR	Adjust the various instrument panel functions (clock, etc...) if necessary. Check that all the instrument panel functions operate correctly.

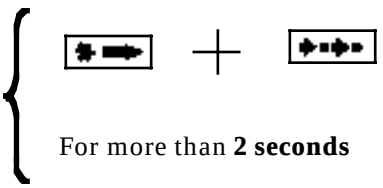
ntt1106.0

FAULT FINDING CHARTS

CHART 3	FLASHING OF THE OIL DRAIN RANGE

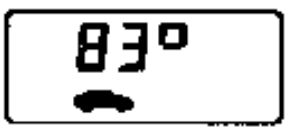
NOTES	Instrument panel fault finding procedures are carried out with the ignition on.

1st EXAMPLE	NOTES	None

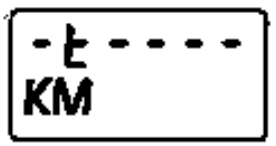
Change to fault finding sequence: 

For more than **2 seconds**

Press key  to select



Current oil temperature



Oil temperature failure detection

Intermittent fault

Oil temperature sensor information fault for more than **10 seconds**

Check:
- condition of the sensor connector and the instrument panel red connector and check their connections.

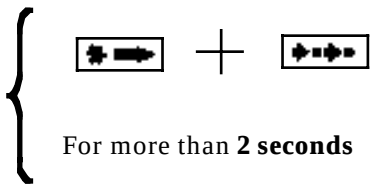
AFTER REPAIR	Adjust the various instrument panel functions (clock, etc...) if necessary. Check that all the instrument panel functions operate correctly.

ntt1106.0

FAULT FINDING CHARTS

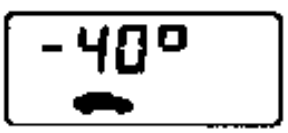
CHART 3 CONT 1	

2nd EXAMPLE	NOTES	None

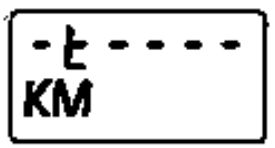
Change to fault finding sequence: 

For more than **2 seconds**

Press key  to select



Current oil temperature



Oil temperature failure detection

Oil temperature sensor information cut-off
(minimum **10 seconds**)

Check:
- condition of the sensor connector and the instrument panel red connector and check their connections,
- continuity of the oil temperature lines between the oil temperature sensor connector and the instrument panel red connector.
- continuity of the oil temperature sensor.

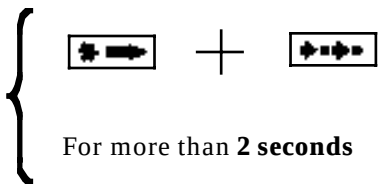
AFTER REPAIR	Adjust the various instrument panel functions (clock, etc...) if necessary. Check that all the instrument panel functions operate correctly.

ntt1106.0

FAULT FINDING CHARTS

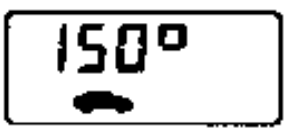
CHART 3 CONT 2	

3rd EXAMPLE	NOTES	None

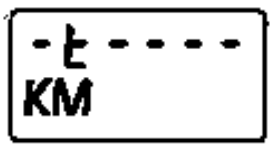
Change to fault finding sequence:  +

For more than **2 seconds**

Press key  to select



Current oil temperature



Oil temperature failure detection

Oil temperature sensor information short circuit (minimum **10 seconds**)

Check:
- condition of the sensor connector and the instrument panel red connector and check their connections,
- insulation of the oil temperature line between the instrument panel red connector and the oil temperature sensor connector,
- presence of a resistance on the oil temperature sensor.

AFTER REPAIR	Adjust the various instrument panel functions (clock, etc...) if necessary. Check that all the instrument panel functions operate correctly.

ntt1106.0

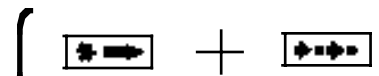
FAULT FINDING CHARTS

CHART 4	FLASHING OF RANGE

NOTES	Instrument panel fault finding procedures are carried out with the ignition on.

1st EXAMPLE	NOTES	None

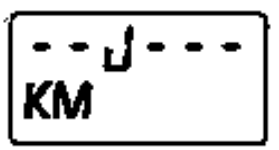
Change to fault finding sequence:



For more than **2 seconds**

Press key  to select

The value displayed (quantity of fuel remaining) **should be the conversion of the gauge resistance.**
If the display is less than or equal to **5 litres** the fuel low signal is transmitted.



Gauge failure detection

Intermittent fault
Gauge information fault for more than
100 seconds

Check:
- condition of the fuel gauge connector and the instrument panel blue connector and check their connections,
- continuity of the fuel gauge throughout its range of operation (**- 5 Ω/l**).

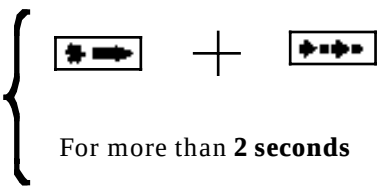
AFTER REPAIR	Adjust the various instrument panel functions (clock, etc...) if necessary. Check that all the instrument panel functions operate correctly.

ntt1106.0

FAULT FINDING CHARTS

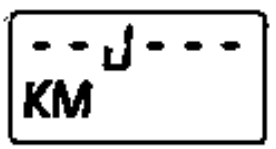
CHART 4 CONT	

2nd EXAMPLE	NOTES	None

Change to fault finding sequence:  For more than **2 seconds**

Press key  to select

Current fuel level.
Illumination of the fuel low warning light and transmission of the voice synthesiser message.



Gauge failure detection

Gauge information cut-off

Check:
- continuity of the fuel gauge (**- 5 Ω/l**),
- continuity of the fuel lines between the instrument panel blue connector and the gauge connector.

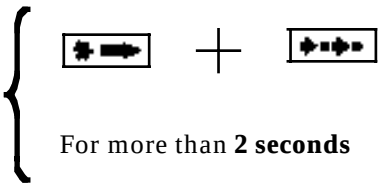
AFTER REPAIR	Adjust the various instrument panel functions (clock, etc...) if necessary. Check that all the instrument panel functions operate correctly.

ntt1106.0

FAULT FINDING CHARTS

CHART 5	INCORRECT DISPLAY OF RANGE WITH NO FLASHING OF DISPLAY

NOTES	Instrument panel fault finding procedures are carried out with the ignition on.

Change to fault finding sequence:  For more than **2 seconds**

Press key  to select

Maximum fuel level displayed when the tank is not full

No gauge failure detection

Gauge information short circuit

Check:
- resistance of the fuel gauge (**- 5 Ω/l**),
- insulation of the gauge line between the instrument panel blue connector and the gauge connector.

AFTER REPAIR	Adjust the various instrument panel functions (clock, etc...) if necessary. Check that all the instrument panel functions operate correctly.

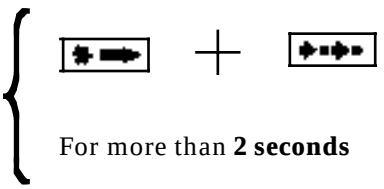
ntt1106.0

FAULT FINDING CHARTS

CHART 6	FLASHING OF SEVERAL FUNCTIONS NO CURRENT CONSUMPTION

NOTES	Instrument panel fault finding procedures are carried out with the ignition on.

1st EXAMPLE	NOTES	None

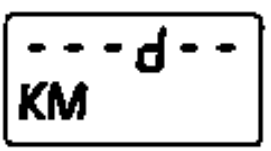
Change to fault finding sequence:  +

For more than **2 seconds**

Press key  to select

Engine running

Current flow in litres/hour



Flow information failure detection

Intermittent failure

Flow information fault for more than **16 km**.

Check the condition of the connector on the injection computer and the instrument panel connector and check their connections.

AFTER REPAIR	Adjust the various instrument panel functions (clock, etc...) if necessary. Check that all the instrument panel functions operate correctly.

ntt1106.0

FAULT FINDING CHARTS

CHART 6 CONT	

2nd EXAMPLE	NOTES	None

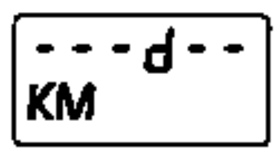
Change to fault finding sequence:

For more than **2 seconds**

Press key  to select

Engine running

Current flow in litres/hour



Flow information failure detection

Flow information cut-off

Check the continuity and insulation of the flow information line between the injection computer and the instrument panel red connector.

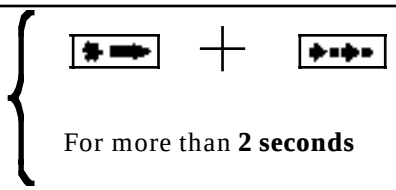
AFTER REPAIR	Adjust the various instrument panel functions (clock, etc...) if necessary. Check that all the instrument panel functions operate correctly.

ntt1106.0

FAULT FINDING CHARTS

CHART 7	INCORRECT OPERATION OF THE OIL PRESSURE LEVEL RECEIVER

NOTES	Instrument panel fault finding procedures are carried out with the ignition on.

Change to fault finding sequence:  For more than **2 seconds**

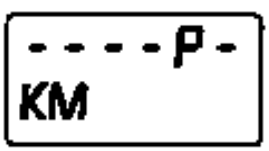
Check the movement of the needle (rest, minimum level, maximum level, maximum deviation).

GOOD

POOR

Change the instrument panel

Press key  to select



Oil pressure failure detection

Oil pressure failure detection

Oil pressure sensor disconnected

If not

Using an ohmmeter, check:
- continuity of the oil pressure sensor,
- continuity and insulation of the oil pressure line.

Oil level sensor disconnected

If not

Using an ohmmeter, check:
- resistance of the oil level sensor,
- continuity and insulation of the oil level line.

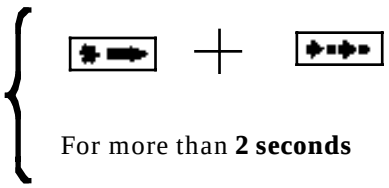
AFTER REPAIR	Adjust the various instrument panel functions (clock, etc...) if necessary. Check that all the instrument panel functions operate correctly.

ntt1106.0

FAULT FINDING CHARTS

CHART 8	INCORRECT OPERATION OF OIL PRESSURE LEVEL RECEIVER IN PRESSURE MODE (NEEDLE AT MAXIMUM, IGNITION ON)

NOTES	Instrument panel fault finding procedures are carried out with the ignition on.

Change to fault finding sequence: 

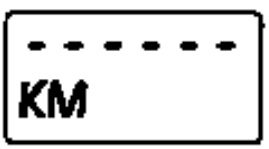
Check the movement of the needle (rest, minimum level, maximum level, maximum deviation).

GOOD

POOR

Change the instrument panel

Press key 



No failure detection

Oil pressure line short circuit

Using an ohmmeter, check:
- resistance of the oil pressure sensor,
- insulation of the oil pressure line.

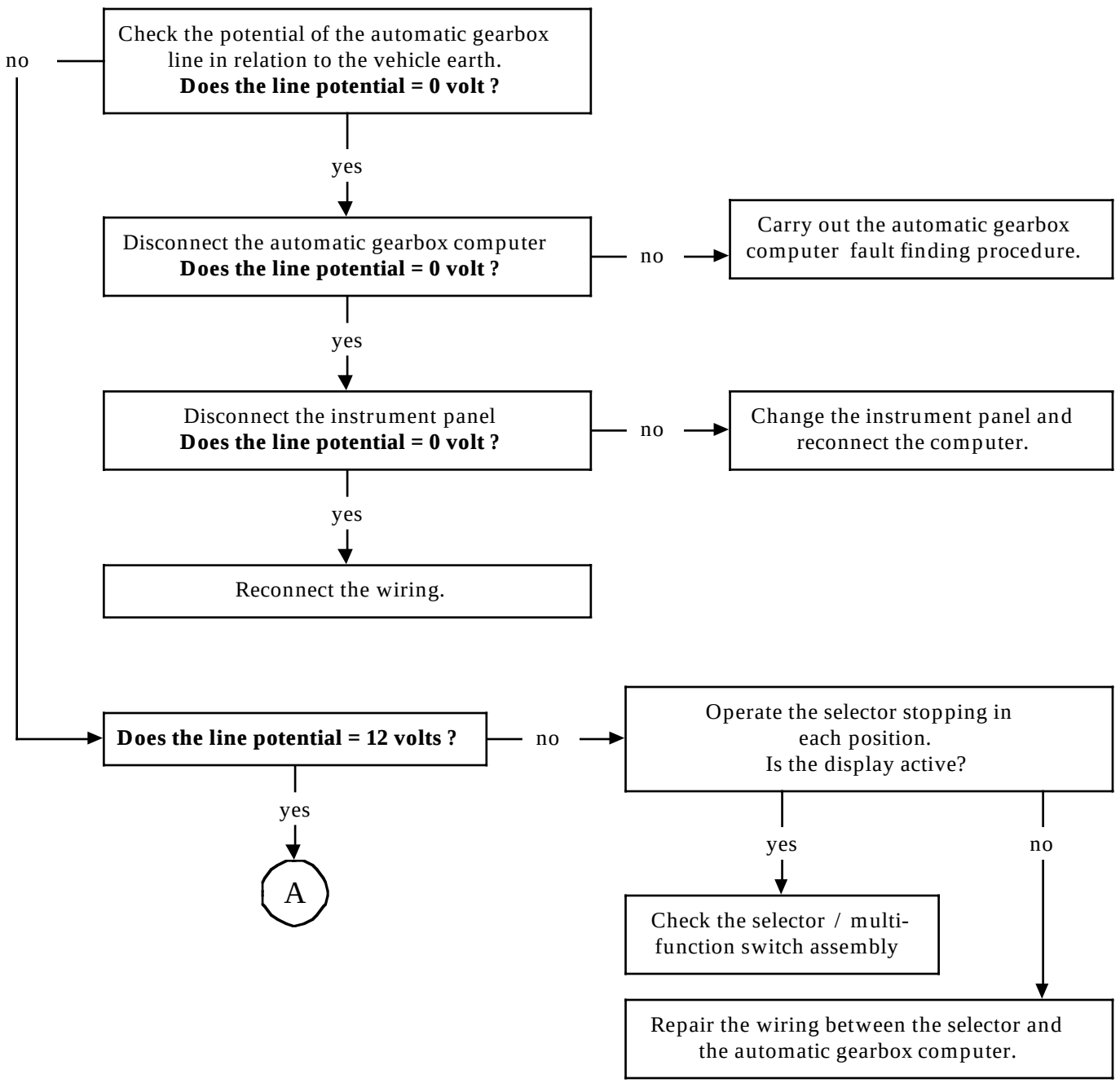
AFTER REPAIR	Adjust the various instrument panel functions (clock, etc...) if necessary. Check that all the instrument panel functions operate correctly.

ntt1106.0

FAULT FINDING CHARTS

CHART 9	NO MODE AND POSITION DISPLAY, FAULT WARNING LIGHT ILLUMINATED OR FLASHING

NOTES	Fault finding procedure for vehicles fitted with an automatic gearbox (BVA).

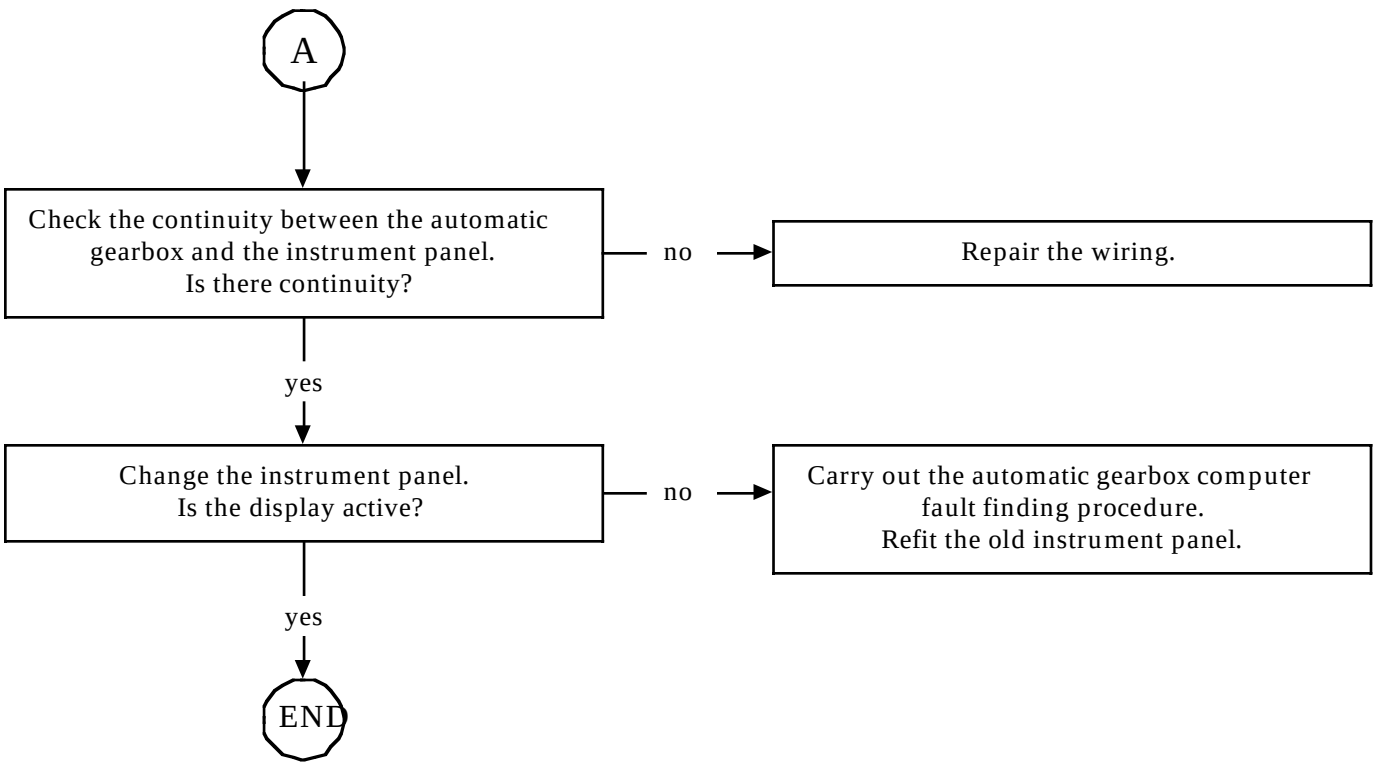


AFTER REPAIR	Adjust the various instrument panel functions (clock, etc...) if necessary. Check that all the instrument panel functions operate correctly.

ntt1106.0

FAULT FINDING CHARTS

CHART 9
CONT



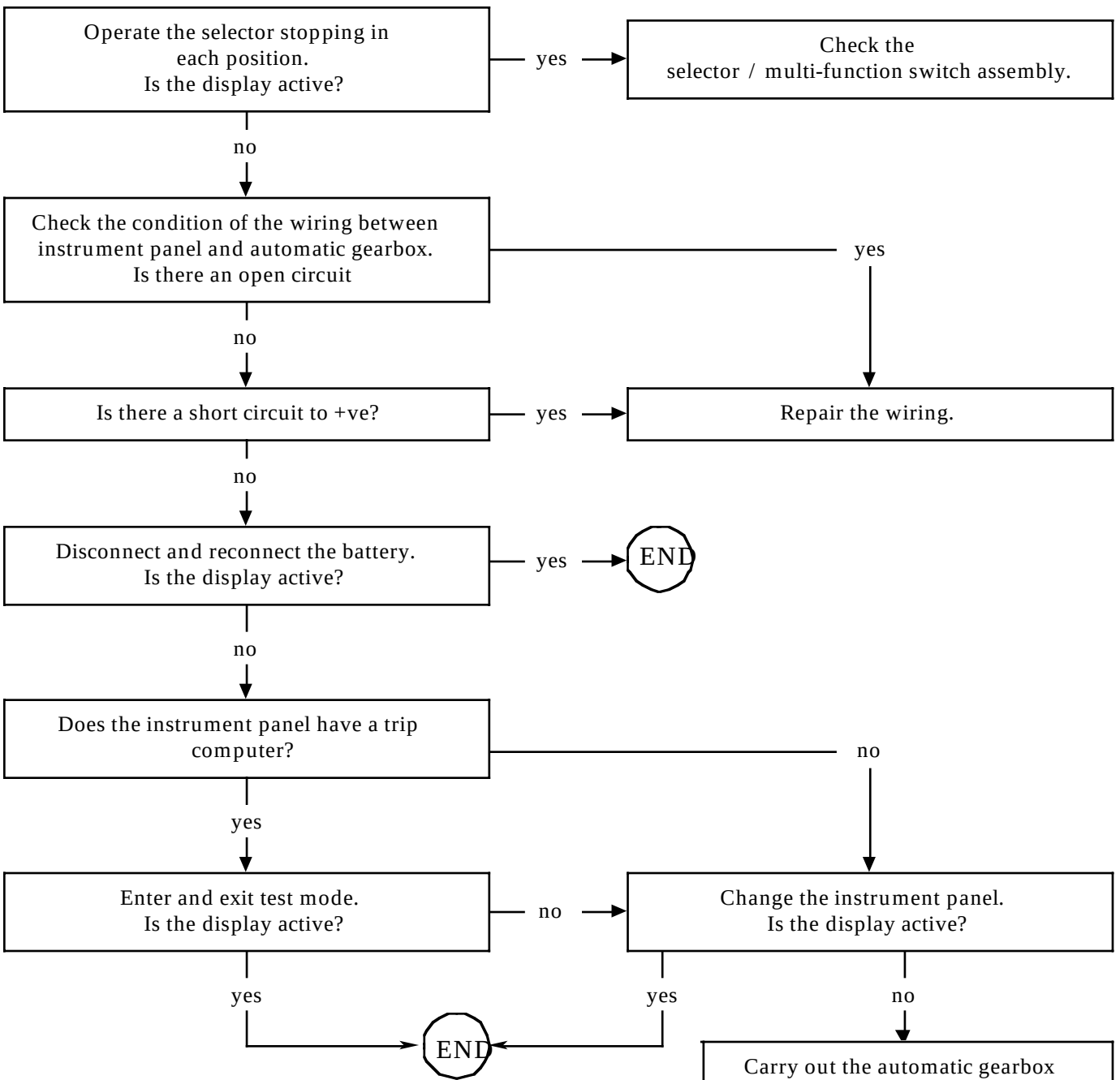
AFTER REPAIR	Adjust the various instrument panel functions (clock, etc...) if necessary. Check that all the instrument panel functions operate correctly.

ntt1106.0

FAULT FINDING CHARTS

CHART 10	NO DISPLAY (LEVER POSITION, PROGRAMME) FAULT WARNING LIGHT EXTINGUISHED

NOTES	Fault finding procedure for vehicles fitted with an automatic gearbox (BVA).



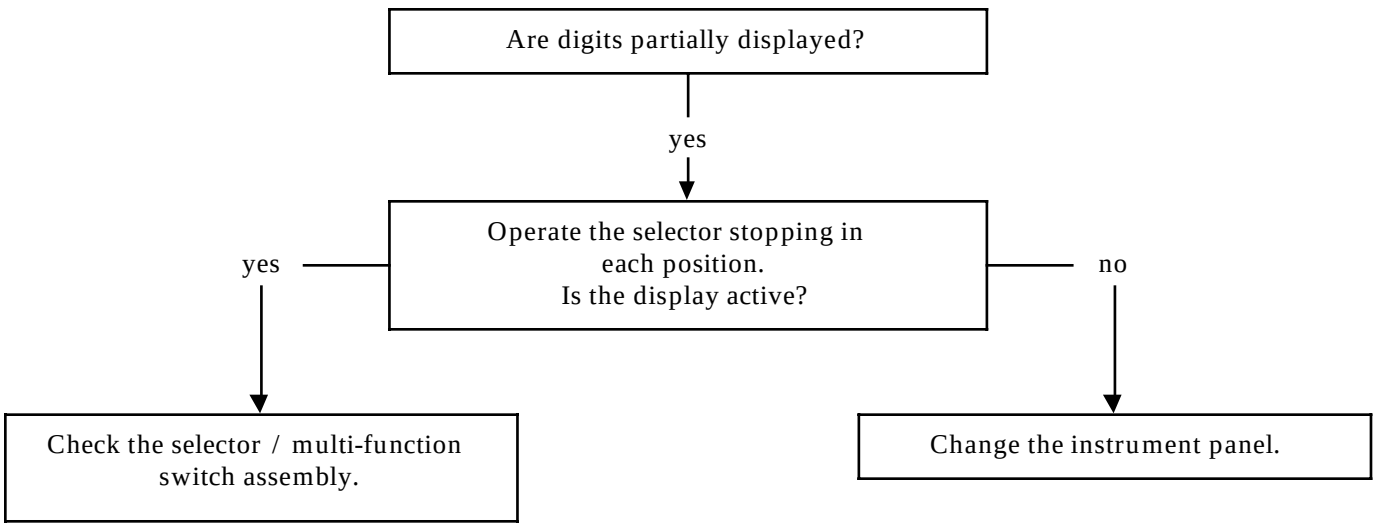
AFTER REPAIR	Adjust the various instrument panel functions (clock, etc...) if necessary. Check that all the instrument panel functions operate correctly.

ntt1106.0

FAULT FINDING CHARTS

CHART 11	DIGITS PARTIALLY DISPLAYED

NOTES	Fault finding procedure for vehicles fitted with an automatic gearbox (BVA).



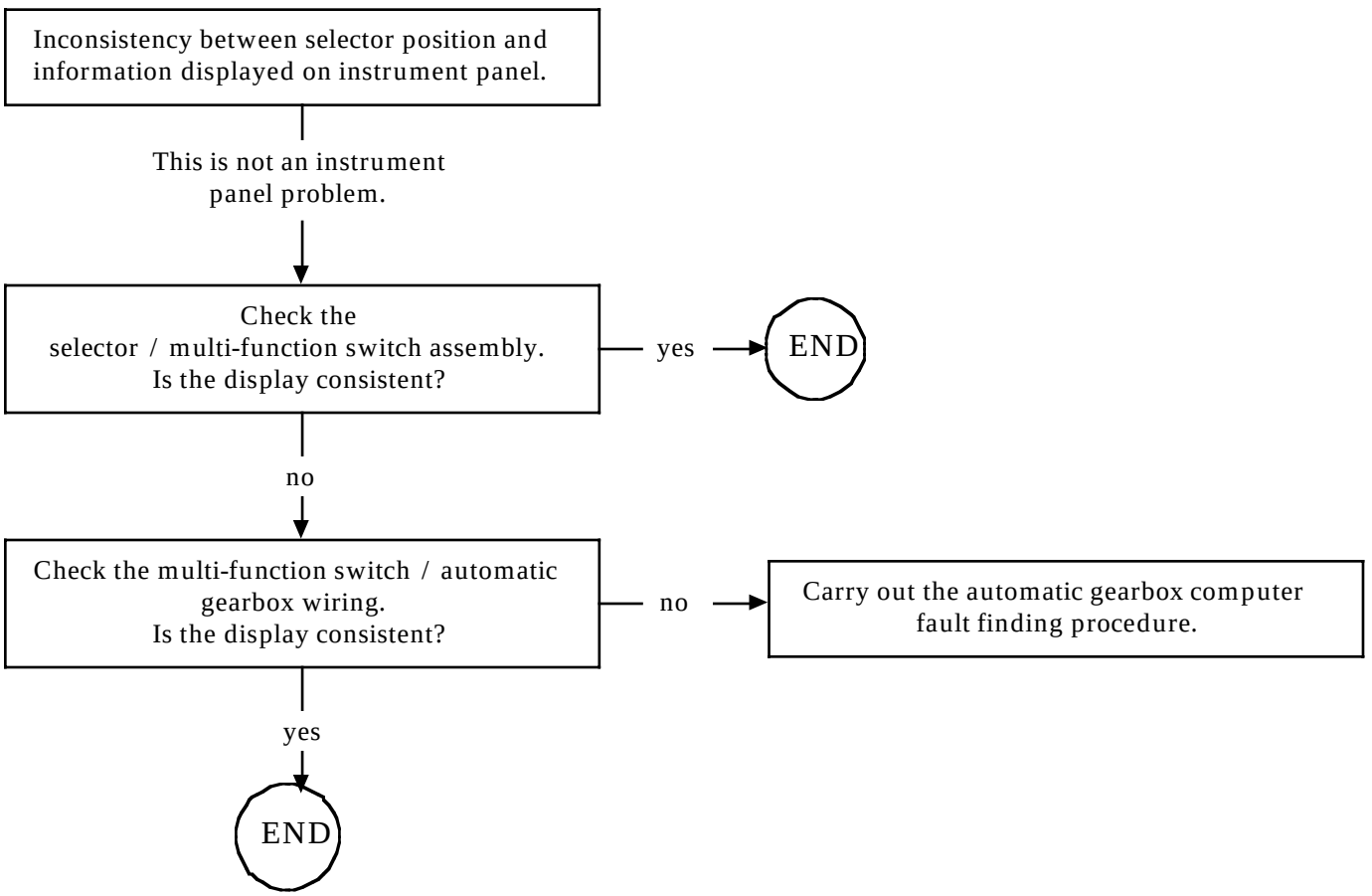
AFTER REPAIR	Adjust the various instrument panel functions (clock, etc...) if necessary. Check that all the instrument panel functions operate correctly.

ntt1106.0

FAULT FINDING CHARTS

CHART 12	INCONSISTENCY BETWEEN SELECTOR POSITION AND INFORMATION DISPLAYED ON INSTRUMENT PANEL

NOTES	Fault finding procedure for vehicles fitted with an automatic gearbox (BVA).



AFTER REPAIR	Adjust the various instrument panel functions (clock, etc...) if necessary. Check that all the instrument panel functions operate correctly.

ntt1106.0

FAULT FINDING - CUSTOMER COMPLAINTS

NOTES	Refer to the "Fault finding - Introduction" section before beginning this fault finding procedure.

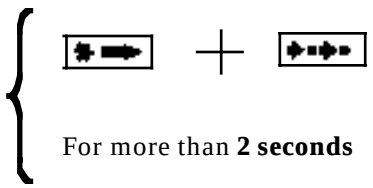
SAFRANE GB VERSION

For vehicles fitted with an automatic gearbox:

FAULT FINDING CHARTS

CHART 1	SPEEDOMETER DOES NOT OPERATE AND INCORRECT TRIP COMPUTER AND TOTAL DISTANCE RECORDER DISPLAYS

NOTES	Instrument panel fault finding procedures are carried out with the ignition on.

Change to fault finding sequence:  +

For more than **2 seconds**

Check the movement of the needle to **40** at **40 mph/h**

GOOD

POOR

Change the instrument panel

Check:
- connection of the sensor cable to the gearbox,
- correct connection of the connector on the sensor,
- **+ after ignition** supply on **track A** and **earth** on **track C** on the sensor connector.

POOR → Repair

GOOD

POOR

Check:
- the continuity and insulation of the wiring between the speed sensor and the instrument panel.

GOOD

Repair ← POOR ← Check that the instrument panel connector and its pins are in good condition.

GOOD

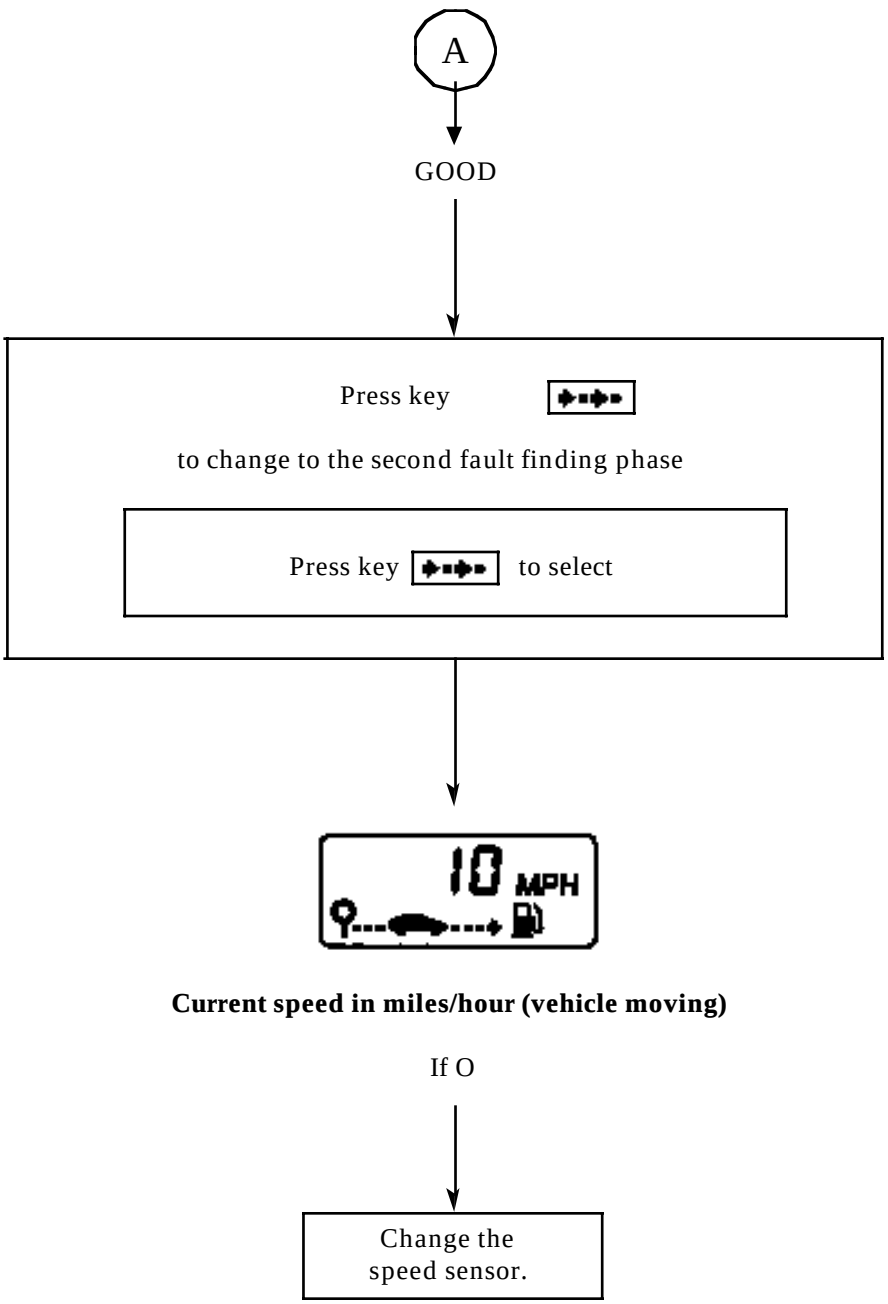
A

AFTER REPAIR	Adjust the various instrument panel functions (clock, etc...) if necessary. Check that all the instrument panel functions operate correctly.

ntt1106.0

FAULT FINDING CHARTS

CHART 1 CONT	



Current speed in miles/hour (vehicle moving)

If O

Change the
speed sensor.

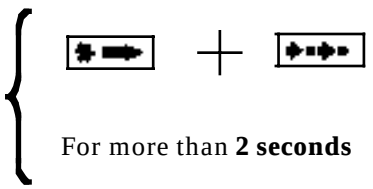
AFTER REPAIR	Adjust the various instrument panel functions (clock, etc...) if necessary. Check that all the instrument panel functions operate correctly.

ntt1106.0

FAULT FINDING CHARTS

CHART 2	REV COUNTER DOES NOT OPERATE

NOTES	Instrument panel fault finding procedures are carried out with the ignition on. Check the condition of the engine earth.

Change to fault finding sequence: 

For more than **2 seconds**

Check the movement of the needle to **1 000** at **1 000 rpm**

GOOD

Check the continuity and insulation of the rev counter information wire between the injection computer and the instrument panel or between the alternator and the instrument panel depending on the engine installed in the vehicle.

GOOD

Change the injection computer or the alternator depending on the engine.

POOR

Change the instrument panel

AFTER REPAIR	Adjust the various instrument panel functions (clock, etc...) if necessary. Check that all the instrument panel functions operate correctly.

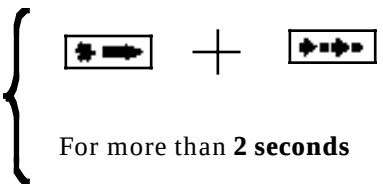
ntt1106.0

FAULT FINDING CHARTS

CHART 3	FLASHING OF THE OIL DRAIN RANGE

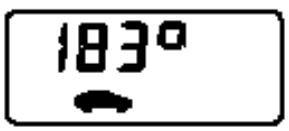
NOTES	Instrument panel fault finding procedures are carried out with the ignition on.

1st EXAMPLE	NOTES	None

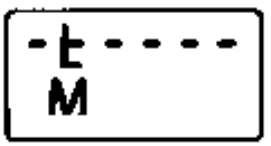
Change to fault finding sequence: 

For more than **2 seconds**

Press key  to select



Current oil temperature



Oil temperature failure detection

Intermittent fault

Oil temperature sensor information fault for more than **10 seconds**

Check:
- condition of the sensor connector and the instrument panel red connector and check their connections.

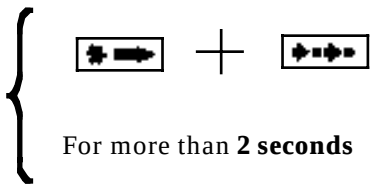
AFTER REPAIR	Adjust the various instrument panel functions (clock, etc...) if necessary. Check that all the instrument panel functions operate correctly.

ntt1106.0

FAULT FINDING CHARTS

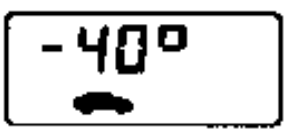
CHART 3 CONT 1	

2nd EXAMPLE	*NOTES*	None

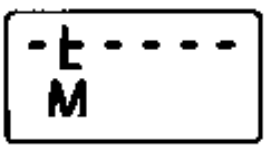
Change to fault finding sequence: 

For more than **2 seconds**

Press key  to select



Current oil temperature



Oil temperature failure detection

Oil temperature sensor information cut-off
(minimum **10 seconds**).

Check:
- condition of the sensor connector and the instrument panel red connector and check their connections,
- continuity of the oil temperature lines between the oil temperature sensor connector and the instrument panel red connector.
- continuity of the oil temperature sensor.

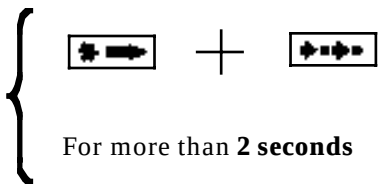
AFTER REPAIR	Adjust the various instrument panel functions (clock, etc...) if necessary. Check that all the instrument panel functions operate correctly.

ntt1106.0

FAULT FINDING CHARTS

CHART 3 CONT 2	

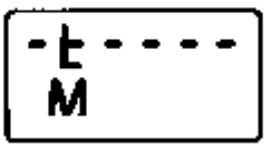
3rd EXAMPLE	*NOTES*	None

Change to fault finding sequence:  +

For more than **2 seconds**

Press key  to select

Current oil temperature



Oil temperature failure detection

Oil temperature sensor information short circuit (minimum **10 seconds**)

Check:
- condition of the sensor connector and the instrument panel red connector and check their connections,
- insulation of the oil temperature line between the instrument panel red connector and the oil temperature sensor connector,
- presence of a resistance on the oil temperature sensor.

AFTER REPAIR	Adjust the various instrument panel functions (clock, etc...) if necessary. Check that all the instrument panel functions operate correctly.

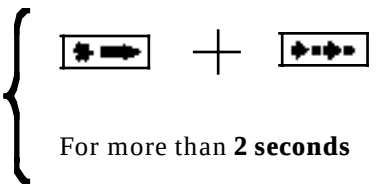
ntt1106.0

FAULT FINDING CHARTS

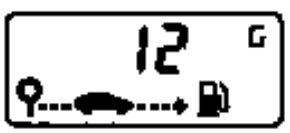
CHART 4	FLASHING OF RANGE

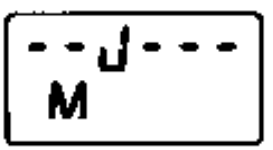
NOTES	

1st EXAMPLE	NOTES	None

Change to fault finding sequence:  + For more than **2 seconds**

Press key  to select





The value displayed (quantity of fuel remaining) **should be the conversion of the gauge resistance.**
If the display is less than or equal to **1.1 gallons** the fuel low signal is transmitted.

Gauge failure detection

Intermittent fault
Gauge information fault for more than
100 seconds

Check:
- condition of the fuel gauge connector and the instrument panel blue connector and check their connections,
- continuity of the fuel gauge throughout its range of operation (**- 5 Ω/l**).

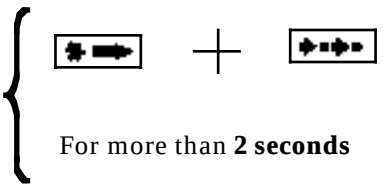
AFTER REPAIR	Adjust the various instrument panel functions (clock, etc...) if necessary. Check that all the instrument panel functions operate correctly.

ntt1106.0

FAULT FINDING CHARTS

CHART 4 CONT	

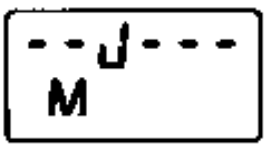
2nd EXAMPLE	NOTES	None

Change to fault finding sequence:  +

For more than **2 seconds**

Press key  to select

Current fuel level.
Illumination of the fuel low warning light and transmission of the voice synthesiser message.



Gauge failure detection

Gauge information cut-off

Check:
- continuity of the fuel gauge (**- 22.5 Ω/G**),
- continuity of the fuel lines between the instrument panel blue connector and the gauge connector.

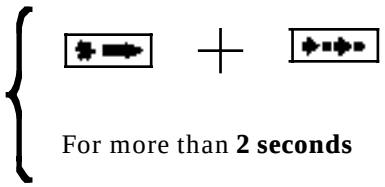
AFTER REPAIR	Adjust the various instrument panel functions (clock, etc...) if necessary. Check that all the instrument panel functions operate correctly.

ntt1106.0

FAULT FINDING CHARTS

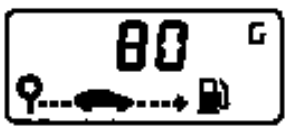
CHART 5	INCORRECT RANGE DISPLAY WITH NO FLASHING OF DISPLAY

NOTES	Instrument panel fault finding procedures are carried out with the ignition on.

Change to fault finding sequence:  +

For more than **2 seconds**

Press key  to select



Maximum fuel level displayed when the tank is not full

No gauge failure detection

Gauge information short circuit

Check:
- resistance of the fuel gauge (**- 22.5 Ω/G**),
- insulation of the gauge line between the instrument panel blue connector and the gauge connector.

AFTER REPAIR	Adjust the various instrument panel functions (clock, etc...) if necessary. Check that all the instrument panel functions operate correctly.

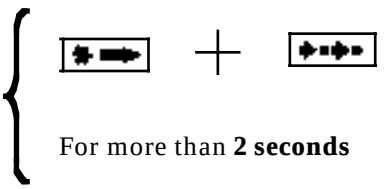
ntt1106.0

FAULT FINDING CHARTS

CHART 6	FLASHING OF SEVERAL FUNCTIONS

NOTES	Instrument panel fault finding procedures are carried out with the ignition on.

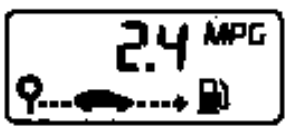
1st EXAMPLE	NOTES	None

Change to fault finding sequence:  +

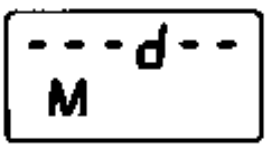
For more than **2 seconds**

Press key  to select

Engine running



Current flow in gallons/hour



Flow information failure detection

Intermittent failure
Flow information fault for more than **10 miles**.

Check the condition of the connector on the injection computer and the instrument panel connector and check their connections.

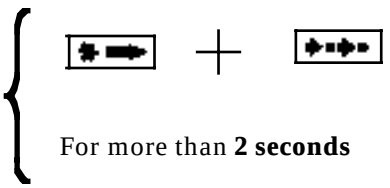
AFTER REPAIR	Adjust the various instrument panel functions (clock, etc...) if necessary. Check that all the instrument panel functions operate correctly.

ntt1106.0

FAULT FINDING CHARTS

CHART 6 CONT	

2nd EXAMPLE	NOTES	None

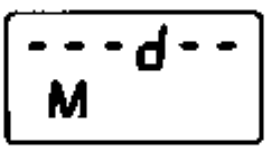
Change to fault finding sequence:  +

For more than **2 seconds**

Press key  to select

Engine running

Current flow in gallons/hour



Flow information failure detection

Flow information cut-off

Check the continuity and insulation of the flow information line between the injection computer and the instrument panel red connector.

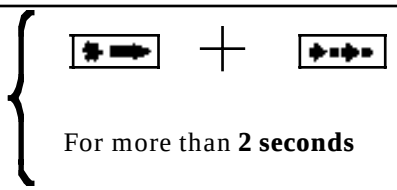
AFTER REPAIR	Adjust the various instrument panel functions (clock, etc...) if necessary. Check that all the instrument panel functions operate correctly.

ntt1106.0

FAULT FINDING CHARTS

CHART 7	INCORRECT OPERATION OF OIL PRESSURE LEVEL RECEIVER

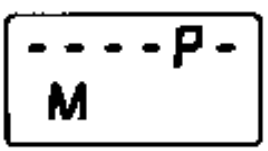
NOTES	Instrument panel fault finding procedures are carried out with the ignition on.

Change to fault finding sequence:  For more than **2 seconds**

Check the movement of the needle (rest, minimum level, maximum level, maximum deviation).

GOOD

Press key  to select



Oil pressure failure detection

Oil pressure sensor disconnected

If not

Using an ohmmeter, check:
- continuity of the oil pressure sensor,
- continuity and insulation of the oil pressure line.

POOR

Change the instrument panel

Oil level failure detection

Oil level sensor disconnected

If not

Using an ohmmeter, check:
- resistance of the oil level sensor,
- continuity and insulation of the oil level line.

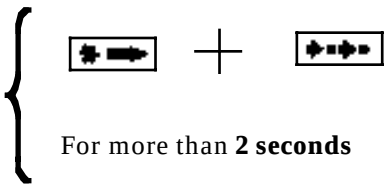
AFTER REPAIR	Adjust the various instrument panel functions (clock, etc...) if necessary. Check that all the instrument panel functions operate correctly.

ntt1106.0

FAULT FINDING CHARTS

CHART 8	INCORRECT OPERATION OF OIL PRESSURE LEVEL RECEIVER IN PRESSURE MODE (NEEDLE AT MAXIMUM, IGNITION ON)

NOTES	Instrument panel fault finding procedures are carried out with the ignition on.

Change to fault finding sequence:  For more than **2 seconds**

Check the movement of the needle (rest, minimum level, maximum level, maximum deviation).

GOOD

POOR

Change the instrument panel

Press key 

No failure detection

Oil pressure line short circuit

Using an ohmmeter, check:
- resistance of the oil pressure sensor,
- insulation of the oil pressure line.

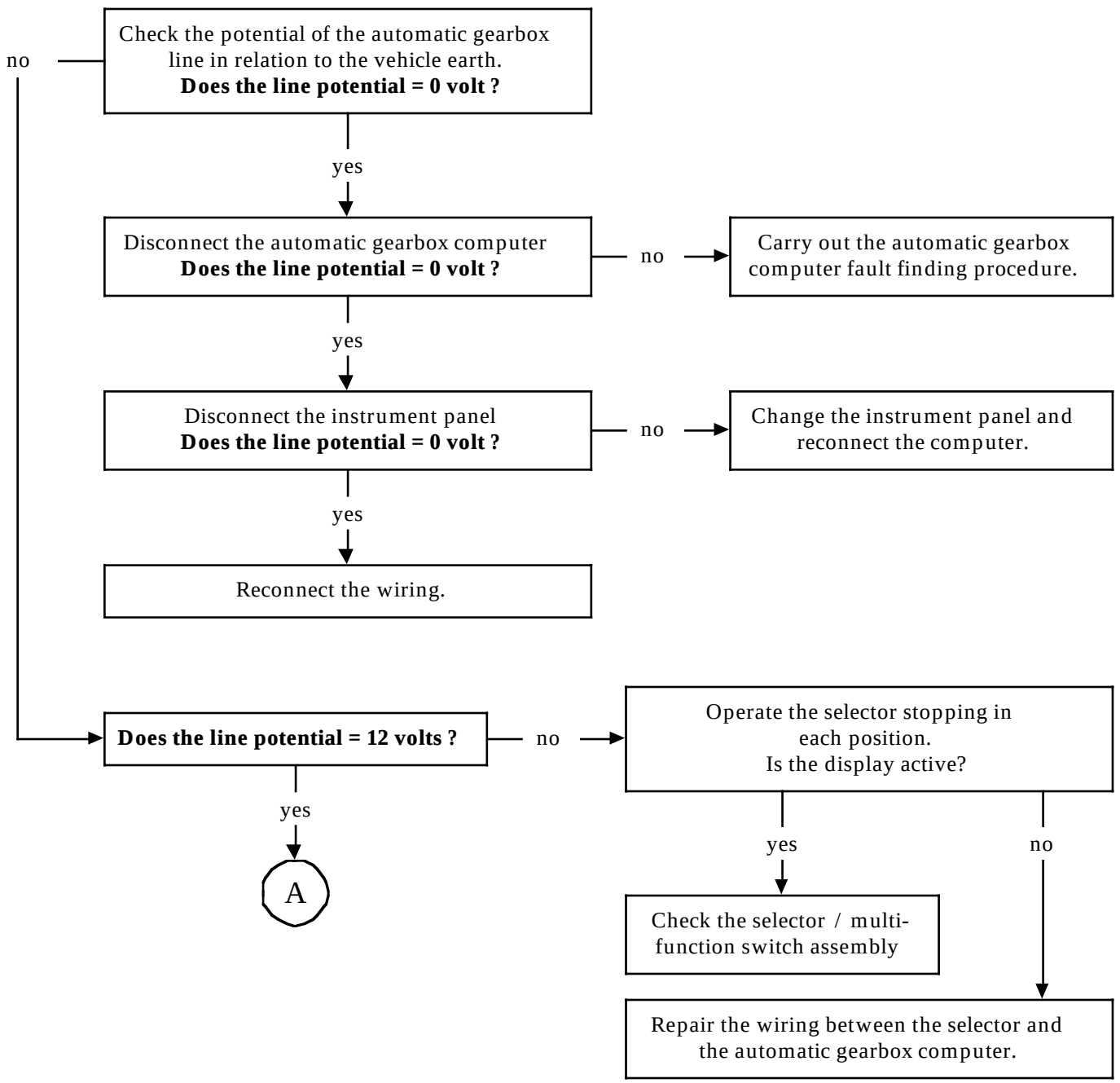
AFTER REPAIR	Adjust the various instrument panel functions (clock, etc...) if necessary. Check that all the instrument panel functions operate correctly.

ntt1106.0

FAULT FINDING CHARTS

CHART 9	NO MODE AND POSITION DISPLAY, WARNING LIGHT ILLUMINATED OR FLASHING

NOTES	Fault finding procedure for vehicles fitted with an automatic gearbox (BVA).

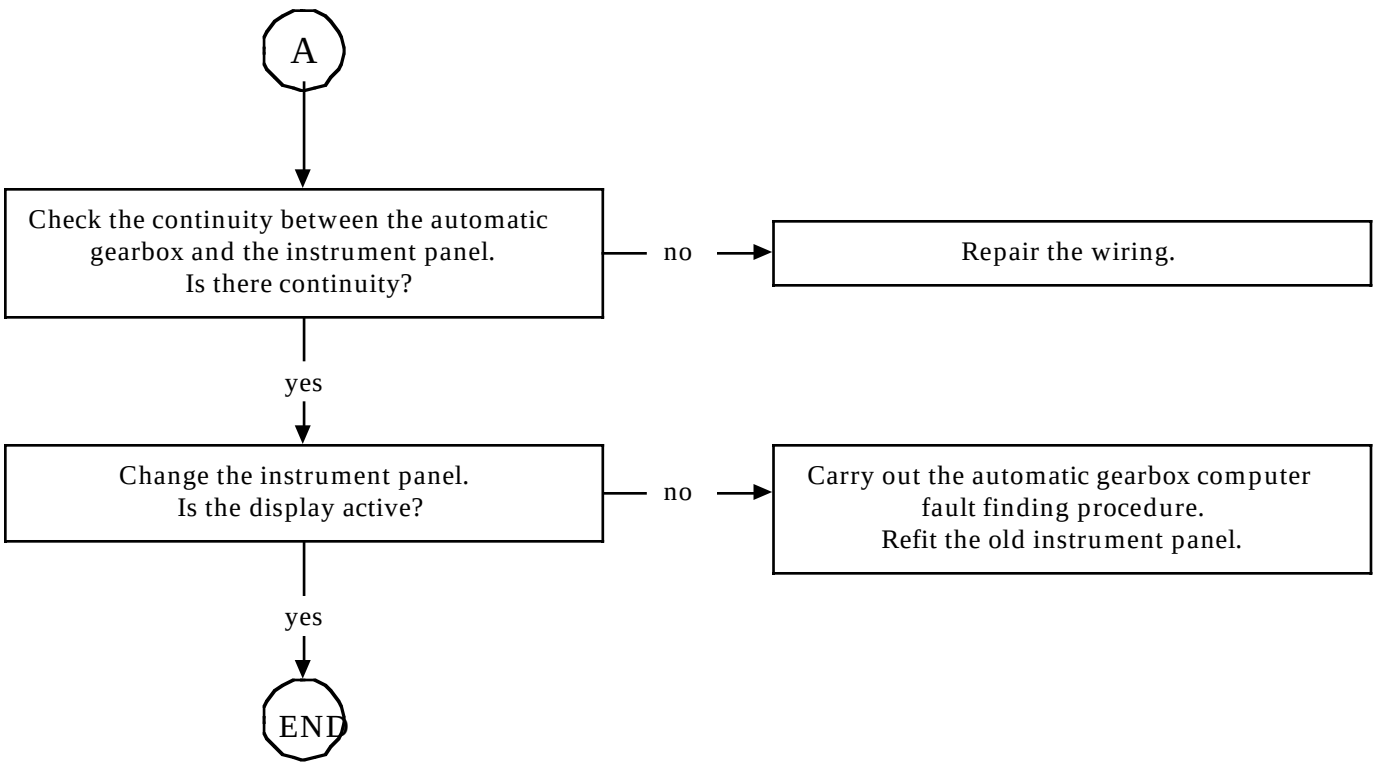


AFTER REPAIR	Adjust the various instrument panel functions (clock, etc...) if necessary. Check that all the instrument panel functions operate correctly.

ntt1106.0

FAULT FINDING CHARTS

CHART 9 CONT	



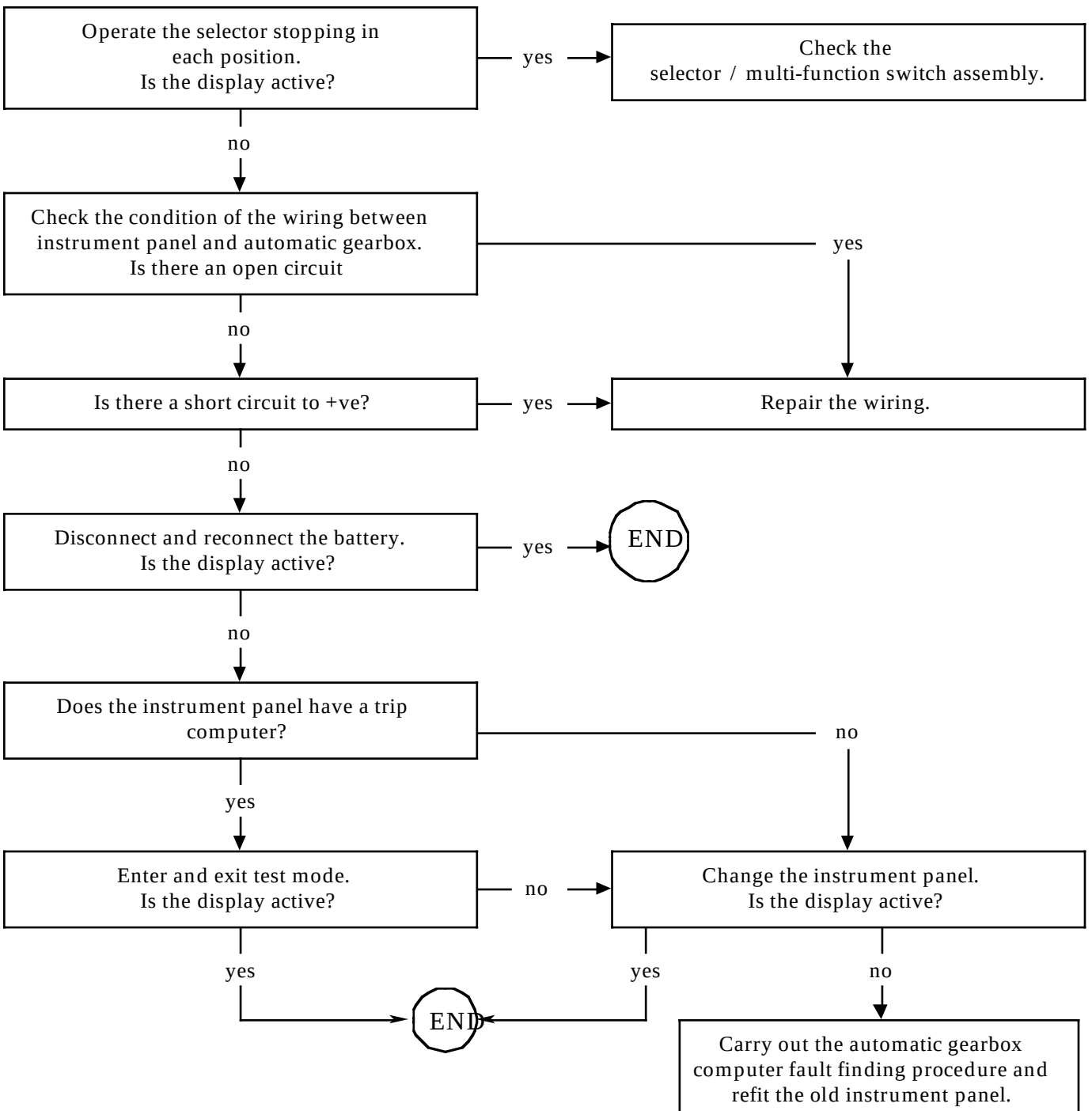
AFTER REPAIR	Adjust the various instrument panel functions (clock, etc...) if necessary. Check that all the instrument panel functions operate correctly.

ntt1106.0

FAULT FINDING CHARTS

CHART 10	NO DISPLAY (LEVER POSITION, PROGRAMME) FAULT WARNING LIGHT EXTINGUISHED

NOTES	Fault finding procedure for vehicles fitted with an automatic gearbox (BVA).



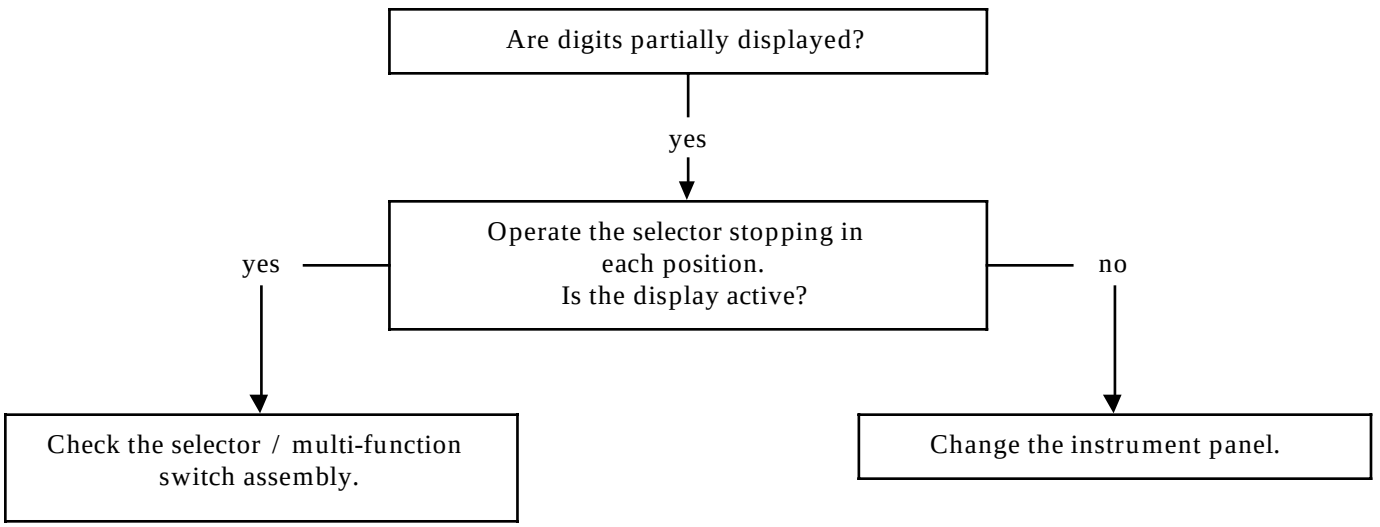
AFTER REPAIR	Adjust the various instrument panel functions (clock, etc...) if necessary. Check that all the instrument panel functions operate correctly.

ntt1106.0

FAULT FINDING CHARTS

CHART 11	DIGITS PARTIALLY DISPLAYED

NOTES	Fault finding procedure for vehicles fitted with an automatic gearbox (BVA).



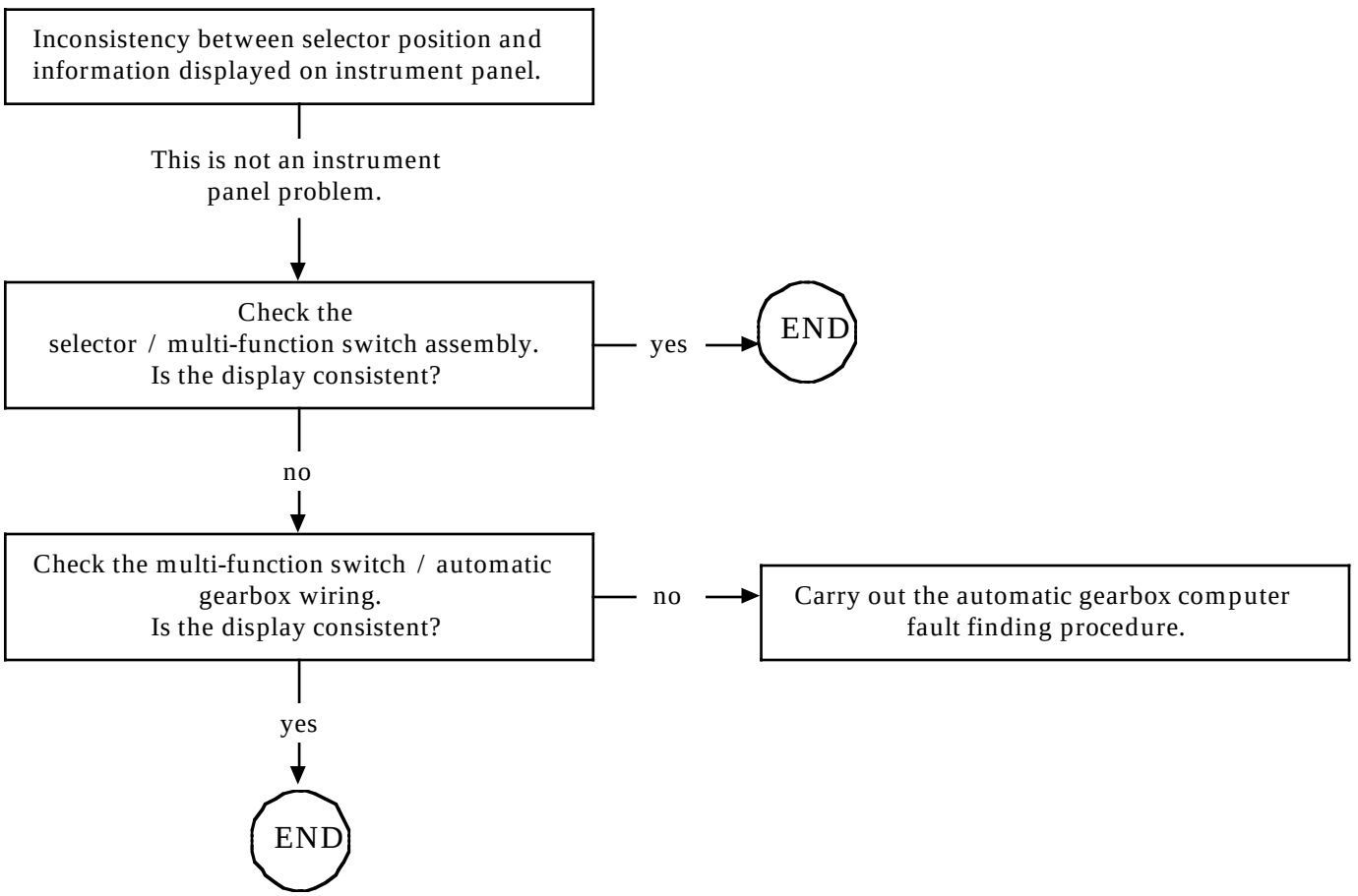
AFTER REPAIR	Adjust the various instrument panel functions (clock, etc...) if necessary. Check that all the instrument panel functions operate correctly.

ntt1106.0

FAULT FINDING CHARTS

CHART 12	INCONSISTENCY BETWEEN SELECTOR POSITION AND INFORMATION DISPLAYED ON INSTRUMENT PANEL

NOTES	Fault finding procedure for vehicles fitted with an automatic gearbox (BVA).



AFTER REPAIR	Adjust the various instrument panel functions (clock, etc...) if necessary. Check that all the instrument panel functions operate correctly.

ntt1106.0

FAULT FINDING -CUSTOMER COMPLAINTS

NOTES	Refer to the "Fault finding - Introduction" section before starting the fault finding procedure.

For vehicles fitted with an automatic gearbox:

*** : if vehicle manufactured before 30/09/96**

FAULT FINDING CHARTS

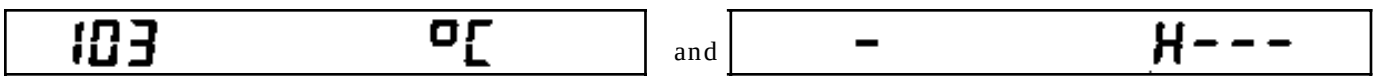
CHART 1	OIL DRAIN RANGE DECREASE CORRESPONDING EXACTLY TO THE DISTANCE COVERED

NOTES	This fault finding procedure only applies to vehicles manufactured before 30/09/97. Instrument panel fault finding procedures are carried out with the ignition on.

1st EXAMPLE	NOTES	None

Change to fault finding sequence { **Simultaneous pressing** of the trip computer advance key at the end of the wiper stalk and the zero reset / reset button **for more than 2 seconds.**

Press key ☐ to select the display required.



Current oil temperature — **Oil temperature failure detection**

Intermittent failure.
Oil temperature sensor information fault **for more than 100 seconds.**

Check the condition of the sensor connector and the instrument panel red connector and check their connections.

AFTER REPAIR	Adjust the various instrument panel functions (clock, etc, ...) if necessary. Check that all the instrument panel functions operate correctly.

ntt1106.0

FAULT FINDING CHARTS

CHART 1
CONT 1

2nd EXAMPLE

NOTES None

Change to fault finding sequence { **Simultaneous pressing for more than 2 seconds** of the trip computer advance key at the end of the wiper stalk and the zero reset / reset button.

Press key to select the display required.

--- °C and - H---

Current oil temperature **Oil temperature failure detection**

Oil temperature sensor information cut-off or short circuit **for more than 100 seconds.**

Check the condition of the oil temperature sensor connector and the instrument panel red connector and check their connections.

poor → Repair.

good

Check the continuity of the oil temperature sensor and the presence of a resistance of between 40 Ω and 2 kΩ

poor → Change the oil temperature sensor.

good

A

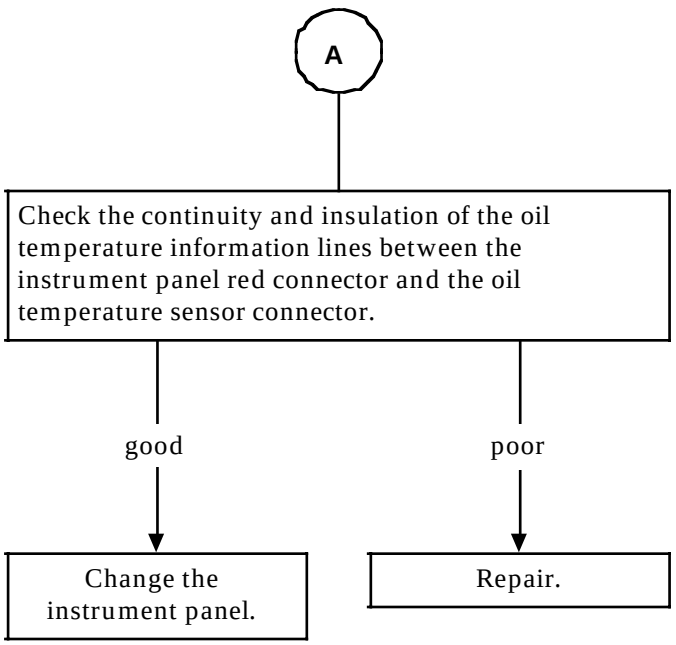
AFTER REPAIR

Adjust the various instrument panel functions (clock, etc, ...) if necessary.
Check that all the instrument panel functions operate correctly.

ntt1106.0

FAULT FINDING CHARTS

CHART 1 CONT 2	



AFTER REPAIR	Adjust the various instrument panel functions (clock, etc, ...) if necessary. Check that all the instrument panel functions operate correctly. New instrument panels must be configured (see Workshop Repair Manual MR 307 and Technical Note NT 2632A).

ntt1106.0

FAULT FINDING CHARTS

CHART 2	FLASHING DASHES SOMETIMES DISPLAYED IN PLACE OF RANGE

NOTES	This fault finding procedure only applies to vehicles manufactured before 30/09/97. Instrument panel fault finding procedures are carried out with the ignition on.

Change to fault finding sequence { **Simultaneous pressing for more than 2 seconds** of the trip computer advance key ▭ at the end of the wiper stalk and the zero reset / reset button.

Press key ▭ to select the display required.

and

The value displayed (quantity of fuel remaining) **should be the conversion of the gauge resistance.**
If the display is less than or equal to 6 litres, the fuel low signal is transmitted.

Gauge failure detection.

Intermittent fault.
Gauge information fault for more than 100 consecutive seconds.

Check :

- The condition of the fuel gauge connector and the instrument panel connector and check their connections.
- The continuity of the fuel gauge throughout its operating range (- 5 Ω / litre approximately).

AFTER REPAIR	Adjust the various instrument panel functions (clock, etc, ...) if necessary. Check that all the instrument panel functions operate correctly.

ntt1106.0

FAULT FINDING CHARTS

CHART 3	FLASHING DASHES DISPLAYED IN PLACE OF RANGE

NOTES	This fault finding procedure only applies to vehicles manufactured before 30/09/97. Instrument panel fault finding procedures are carried out with the ignition on.

Change to fault finding sequence { **Simultaneous pressing for more than 2 seconds** of the trip computer advance key ▭ at the end of the wiper stalk and the zero reset / reset button.

Press key ▭ to select the display required.

-- ⛽ L and ⏻ ----

Level of fuel remaining in the tank. Illumination of the fuel low warning light and transmission of the voice synthesiser message.

Gauge failure detection.

Gauge information cut-off.

Check the continuity of the fuel gauge. — poor → Change the gauge.

good

Check the condition of the instrument panel red connector and the gauge connector and check their connections. — poor → Repair.

good

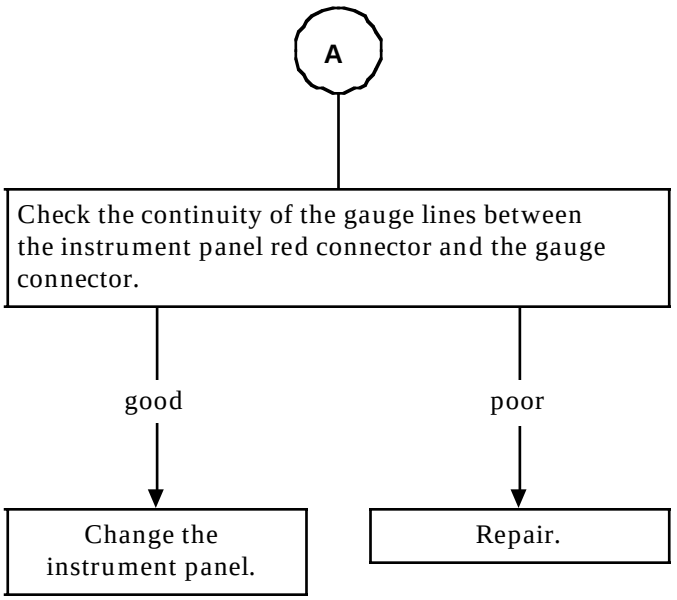
A

AFTER REPAIR	Adjust the various instrument panel functions (clock, etc, ...) if necessary. Check that all the instrument panel functions operate correctly.

ntt1106.0

FAULT FINDING CHARTS

CHART 3 CONT	



AFTER REPAIR	Adjust the various instrument panel functions (clock, etc, ...) if necessary. Check that all the instrument panel functions operate correctly. New instrument panels must be configured (see Workshop Repair Manual MR 307 and Technical Note NT 2632A).

ntt1106.0

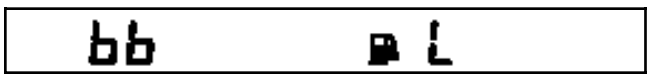
FAULT FINDING CHARTS

CHART 4	INCORRECT RANGE DISPLAY

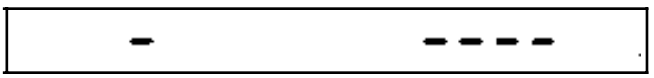
NOTES	This fault finding procedure only applies to vehicles manufactured before 30/09/97. Instrument panel fault finding procedures are carried out with the ignition on.

Change to fault finding sequence { **Simultaneous pressing for more than 2 seconds** of the trip computer advance key at the end of the wiper stalk and the zero reset / reset button.

Press key to select the display required.



and



Maximum fuel level displayed when the tank is not full.

No gauge failure detection.

Gauge information short circuit.

Check :

- The resistance of the fuel gauge.
- The insulation of the gauge line between the instrument panel red connector and the gauge connector.

AFTER REPAIR	Adjust the various instrument panel functions (clock, etc, ...) if necessary. Check that all the instrument panel functions operate correctly.

ntt1106.0

FAULT FINDING CHARTS

CHART 5	SEVERAL FUNCTION REPLACED BY FLASHING DASHES

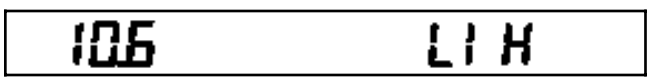
NOTES	Instrument panel fault finding procedures are carried out with the ignition on.

1st EXAMPLE	NOTES	None

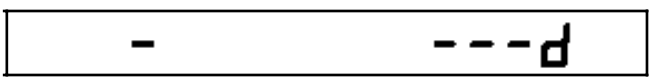
Change to fault finding sequence { **Simultaneous pressing for more than 2 seconds** of the trip computer advance key ☐ at the end of the wiper stalk and the zero reset / reset button.

Press key ☐ to select the display required.

Engine running



and



Current flow in litres/hour

Flow information failure detection.

Intermittent fault. Flow information fault for more than 16 kilometres.

Check the condition of the connector on the injection computer and the instrument panel blue connector and check their connections.

AFTER REPAIR	Adjust the various instrument panel functions (clock, etc, ...) if necessary. Check that all the instrument panel functions operate correctly.

ntt1106.0

FAULT FINDING CHARTS

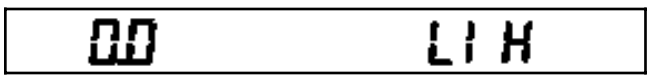
CHART 5 CONT	

2nd EXAMPLE	NOTES	None

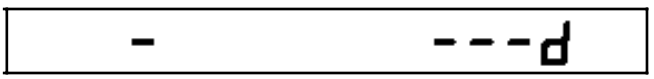
Change to fault finding sequence { **Simultaneous pressing for more than 2 seconds** of the trip computer advance key at the end of the wiper stalk and the zero reset / reset button.

Press key to select the display required.

Engine running



and



Current flow in litres/hour

Flow information failure detection.

Flow information cut-off.

Check the continuity and insulation of the flow information line between the injection computer and the instrument panel blue connector.

AFTER REPAIR	Adjust the various instrument panel functions (clock, etc, ...) if necessary. Check that all the instrument panel functions operate correctly.

ntt1106.0

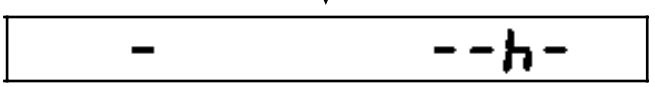
FAULT FINDING CHARTS

CHART 6	INCORRECT OPERATION OF OIL LEVEL RECEIVER

NOTES	Instrument panel fault finding procedures are carried out with the ignition on.

Change to fault finding sequence { **Simultaneous pressing for more than 2 seconds** of the trip computer advance key ▭ at the end of windscreen wiper stalk and the zero reset / reset button.

Press key ▭ to select the display required.



Oil level failure detection.

Oil level sensor disconnected or oil level sensor short circuit.

if not

Using an ohmmeter, check:

- The resistance of the oil level sensor.
- The continuity and insulation of the oil level lines between the sensor connector and the instrument panel red connector.

AFTER REPAIR	Adjust the various instrument panel function (clock, etc, ...) if necessary. Check that all the instrument panel functions operate correctly.

ntt1106.0

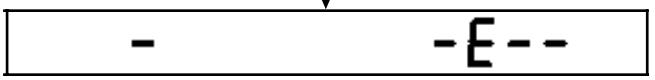
FAULT FINDING CHARTS

CHART 7	COOLANT TEMPERATURE INDICATOR NEEDLE REMAINS AT MAXIMUM (IGNITION ON) ENGINE COLD

NOTES	Instrument panel fault finding procedures are carried out with the ignition on.

Change to fault finding sequence { **Simultaneous pressing for more than 2 seconds** of the trip computer advance key ▭ at the end of windscreen wiper stalk and the zero reset / reset button.

Press key ▭ to select the display required.



Coolant temperature sensor failure detection.

Coolant temperature sensor short circuit by connection to earth.

Check that the sensor is connected correctly and that the terminals and wires in the connector are in good condition.

good

poor

Repair.

With the ignition on, disconnect the connector on the coolant temperature sensor.
Does the needle return to the engine cold position?

yes

Change the coolant temperature sensor.

no

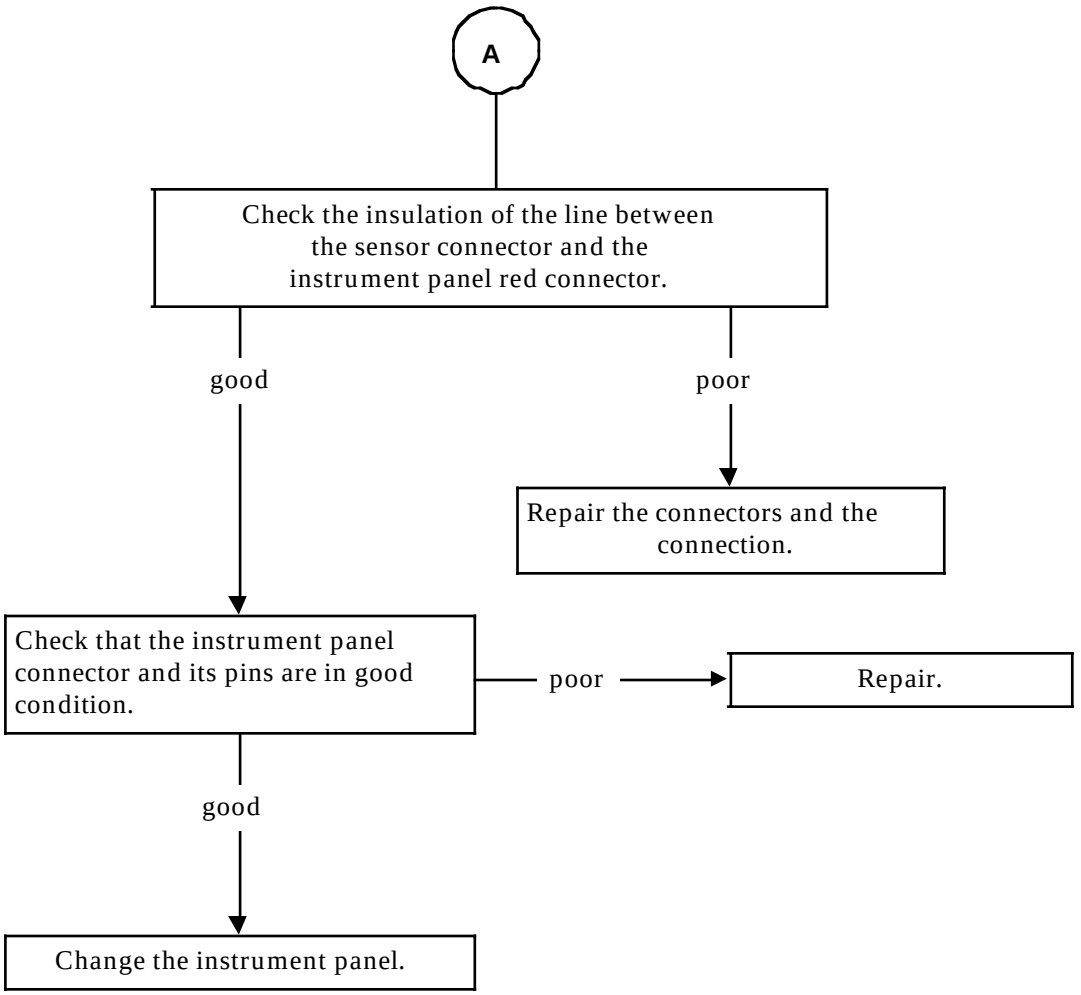
A

AFTER REPAIR	Adjust the various instrument panel function (clock, etc, ...) if necessary. Check that all the instrument panel functions operate correctly.

ntt1106.0

FAULT FINDING CHARTS

CHART 7 CONT	



AFTER REPAIR	Adjust the various instrument panel functions (clock, etc, ...) if necessary. Check that all the instrument panel functions operate correctly. New instrument panels must be configured (see Workshop Repair Manual MR 307 and Technical Note NT 2632A).

ntt1106.0

FAULT FINDING CHARTS

CHART 8	INCORRECT DISPLAY OF OIL LEVEL, BUT TOTAL DISTANCE DISPLAYED

NOTES	Instrument panel fault finding procedures are carried out with the ignition on. Change to fault finding sequence: - keep the zero reset / reset / trip computer advance button at the end of the windscreen wiper stalk pressed and switch on the ignition.

Check the connection of the sensor and its connectors.
Are the connection and connectors correct?

no → Connect the sensor correctly.

yes ↓

Disconnect the sensor connector and measure the resistance of the sensor.
The value should be: **5 Ω < R < 15 Ω**
Is this the resistance measured?

no → Change the sensor.

yes ↓

Check the continuity and insulation from **12 volts** and **earth** of the wiring between the sensor connector and the instrument panel.
Are the connections in good condition?

no → Repair the faulty wiring.

yes ↓

Change the instrument panel.

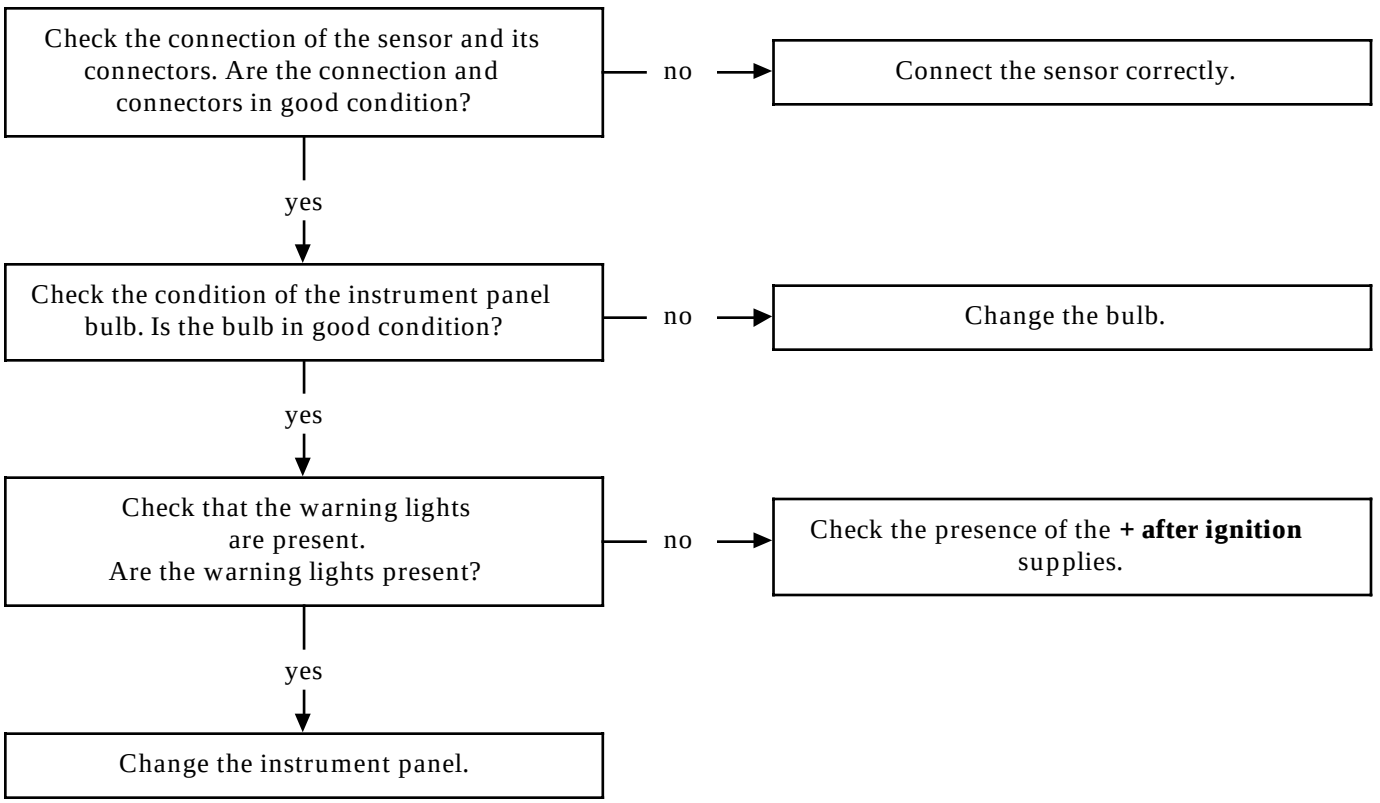
AFTER REPAIR	Adjust the various instrument panel function (clock, etc, ...) if necessary. Check that all the instrument panel functions operate correctly.

ntt1106.0

FAULT FINDING CHARTS

CHART 9	NEITHER OIL LEVEL NOR TOTAL DISTANCE DISPLAYED

NOTES	Instrument panel fault finding procedures are carried out with the ignition on. Change to fault finding sequence: - keep the zero reset / reset / trip computer advance button at the end of the windscreen wiper stalk pressed and switch on the ignition.



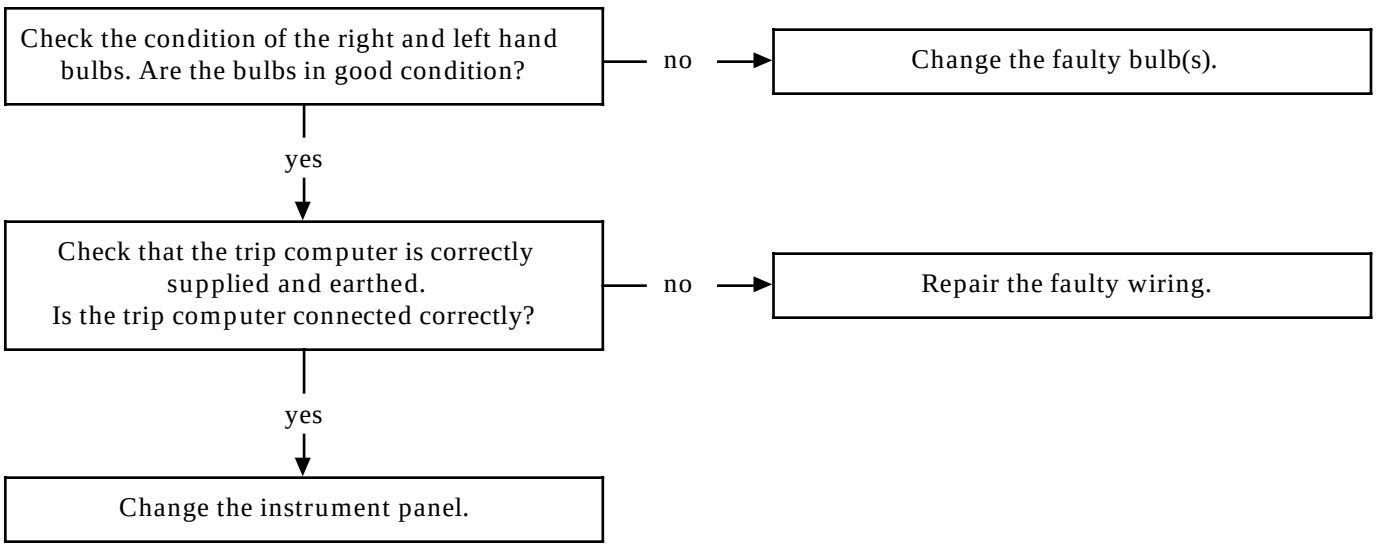
AFTER REPAIR	Adjust the various instrument panel function (clock, etc, ...) if necessary. Check that all the instrument panel functions operate correctly.

ntt1106.0

FAULT FINDING CHARTS

CHART 10	NO DISPLAY OF PARTIAL DISPLAY OF TRIP COMPUTER

NOTES	Instrument panel fault finding procedures are carried out with the ignition on. Change to fault finding sequence: - keep the zero reset / reset / trip computer advance button at the end of the windscreen wiper stalk pressed and switch on the ignition.



AFTER REPAIR	Adjust the various instrument panel function (clock, etc, ...) if necessary. Check that all the instrument panel functions operate correctly.

ntt1106.0

FAULT FINDING CHARTS

CHART 11	TRIP COMPUTER DISPLAY WITH PARTIAL LOSS OF SEGMENTS OR SEGMENTS AT HALF TONE

NOTES	Instrument panel fault finding procedures are carried out with the ignition on. Change to fault finding sequence: - keep the zero reset / reset / trip computer advance button at the end of the windscreen wiper stalk pressed and switch on the ignition.

Change the instrument panel.

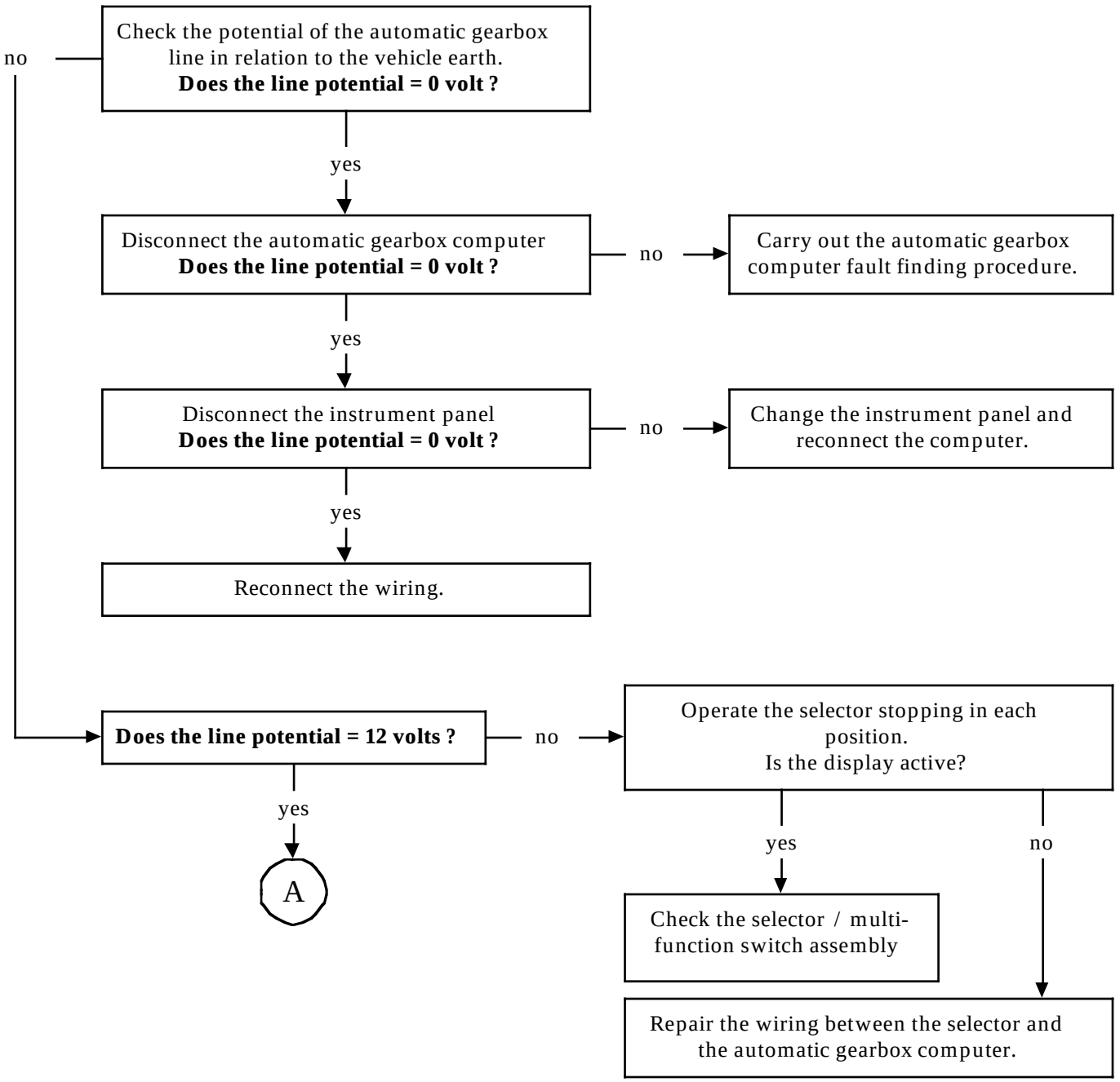
AFTER REPAIR	Adjust the various instrument panel function (clock, etc, ...) if necessary. Check that all the instrument panel functions operate correctly.

ntt1106.0

FAULT FINDING CHARTS

CHART 12	NO MODE AND POSITION DISPLAY FAULT WARNING LIGHT ILLUMINATED OR FLASHING

NOTES	Fault finding procedure for vehicles fitted with an automatic gearbox (BVA).

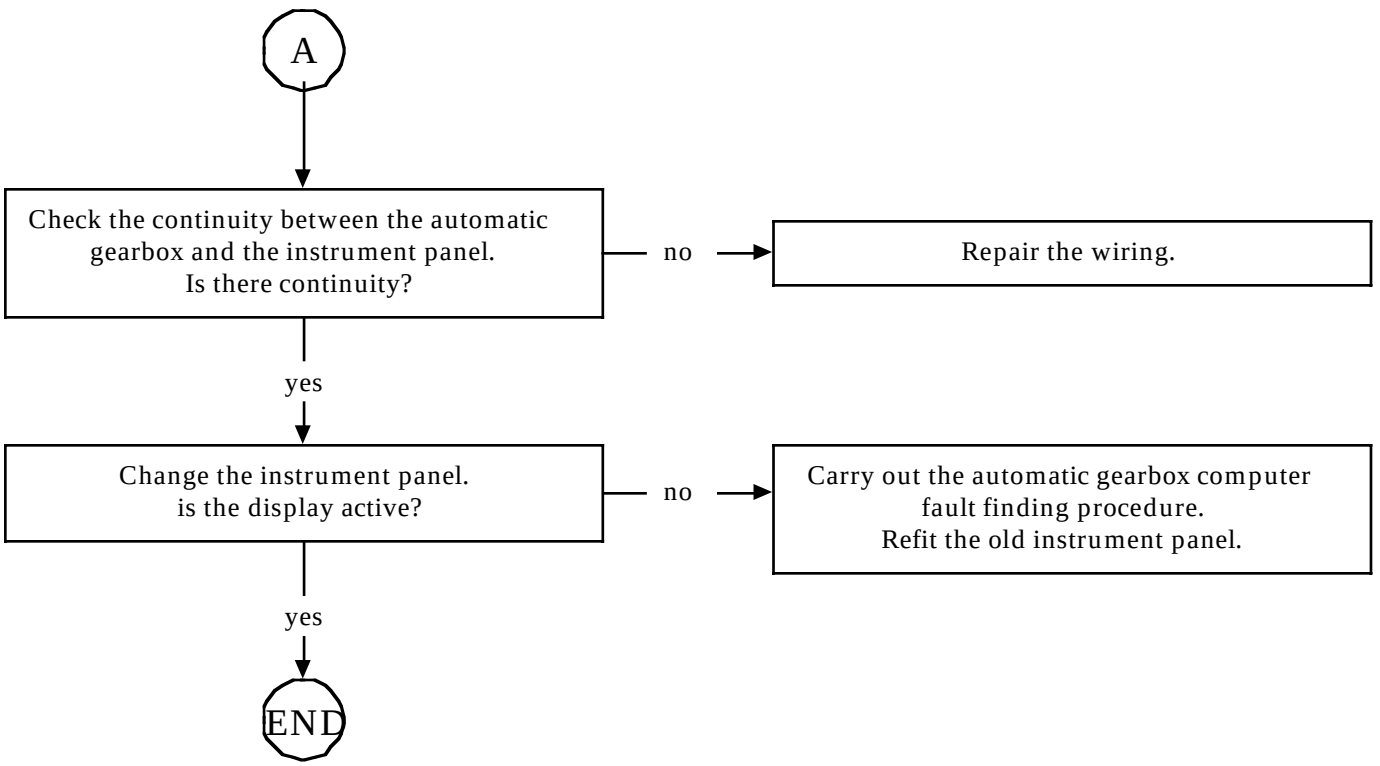


AFTER REPAIR	Adjust the various instrument panel function (clock, etc, ...) if necessary. Check that all the instrument panel functions operate correctly.

ntt1106.0

FAULT FINDING CHARTS

CHART 12 CONT	



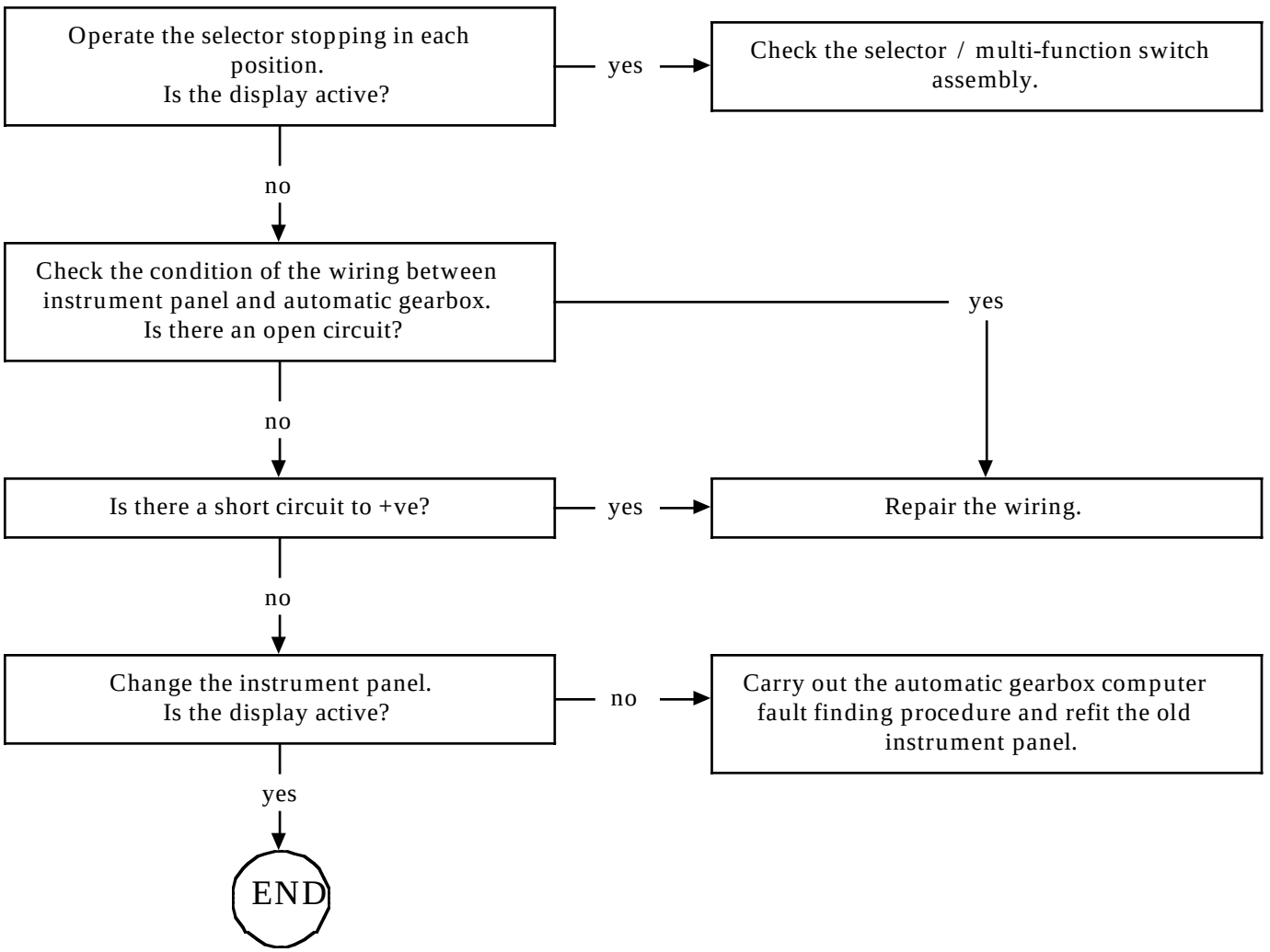
AFTER REPAIR	Adjust the various instrument panel function (clock, etc, ...) if necessary. Check that all the instrument panel functions operate correctly.

ntt1106.0

FAULT FINDING CHARTS

CHART 13	NO DISPLAY (LEVER POSITION, PROGRAMME) FAULT WARNING LIGHT EXTINGUISHED

NOTES	Fault finding procedure for vehicles fitted with an automatic gearbox (BVA).



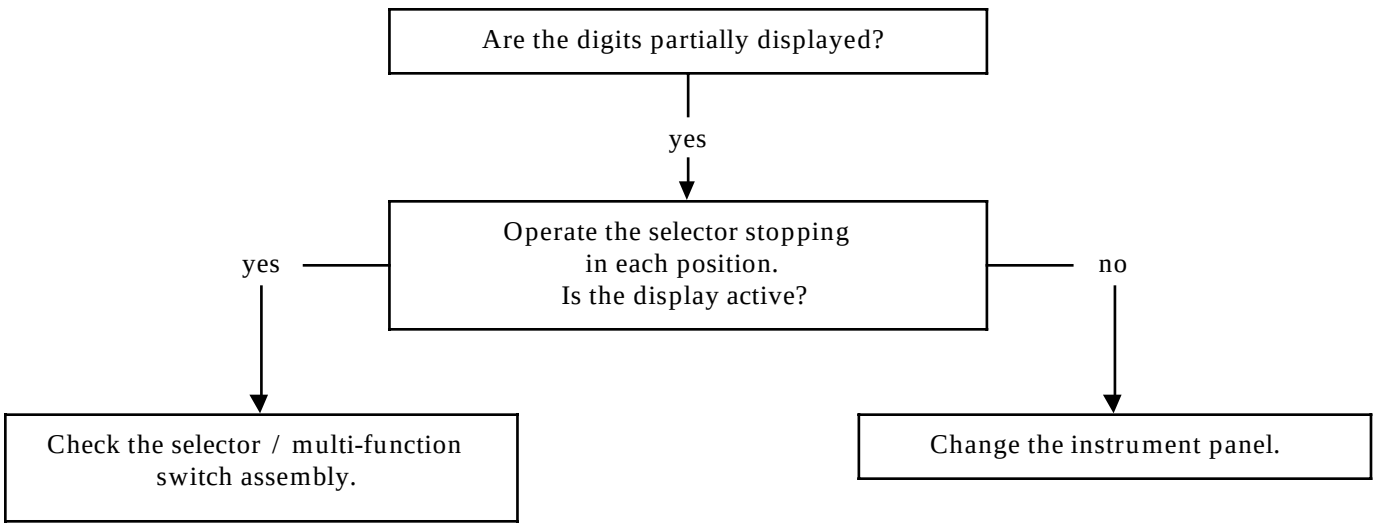
AFTER REPAIR	Adjust the various instrument panel function (clock, etc, ...) if necessary. Check that all the instrument panel functions operate correctly.

ntt1106.0

FAULT FINDING CHARTS

CHART 14	DIGITS PARTIALLY DISPLAYED

NOTES	Fault finding procedure for vehicles fitted with an automatic gearbox (BVA).



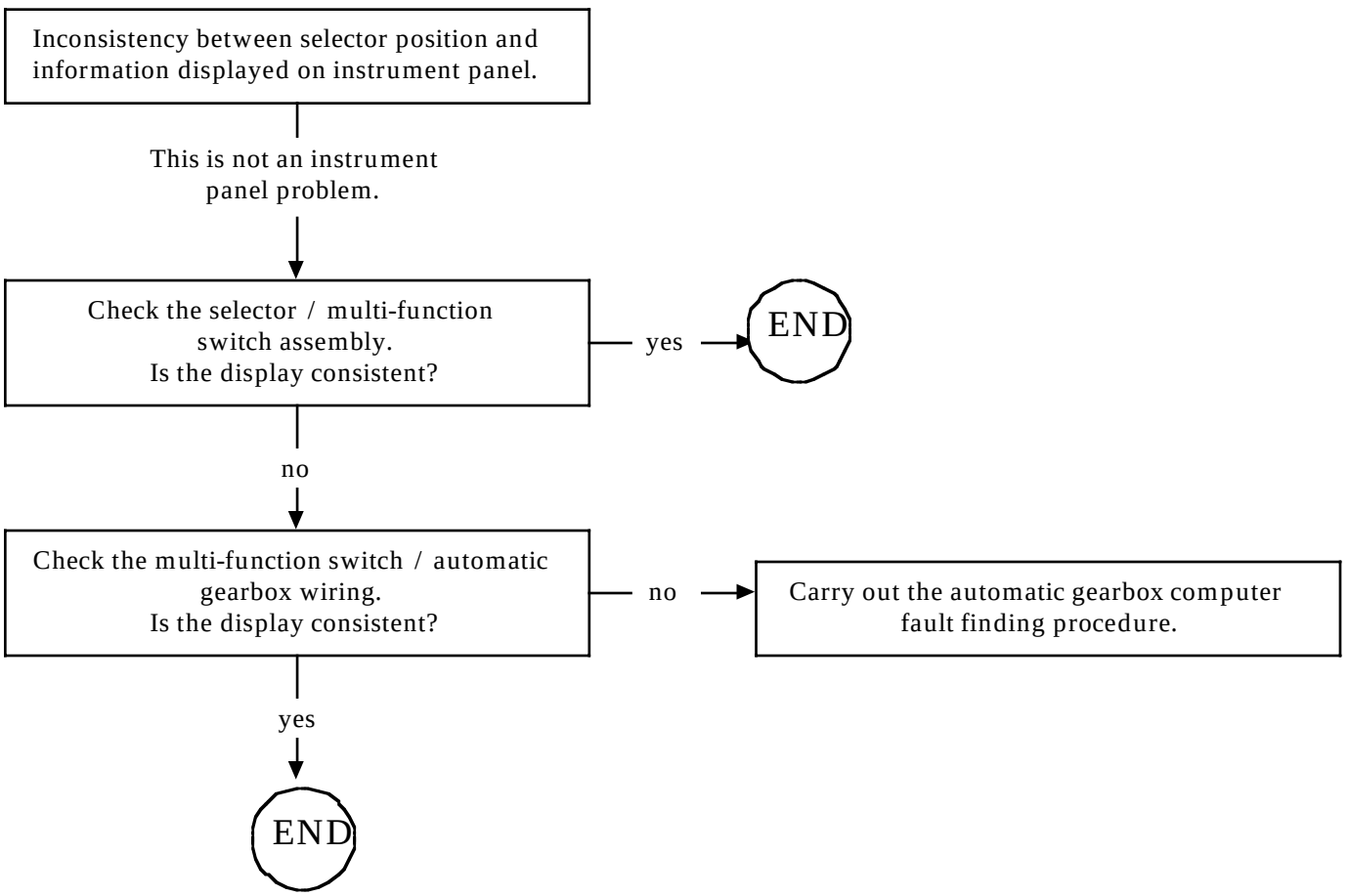
AFTER REPAIR	Adjust the various instrument panel function (clock, etc, ...) if necessary. Check that all the instrument panel functions operate correctly.

ntt1106.0

FAULT FINDING CHARTS

CHART 15	INCONSISTENCY BETWEEN SELECTOR POSITION AND INFORMATION DISPLAYED ON INSTRUMENT PANEL

NOTES	Fault finding procedure for vehicles fitted with an automatic gearbox (BVA).



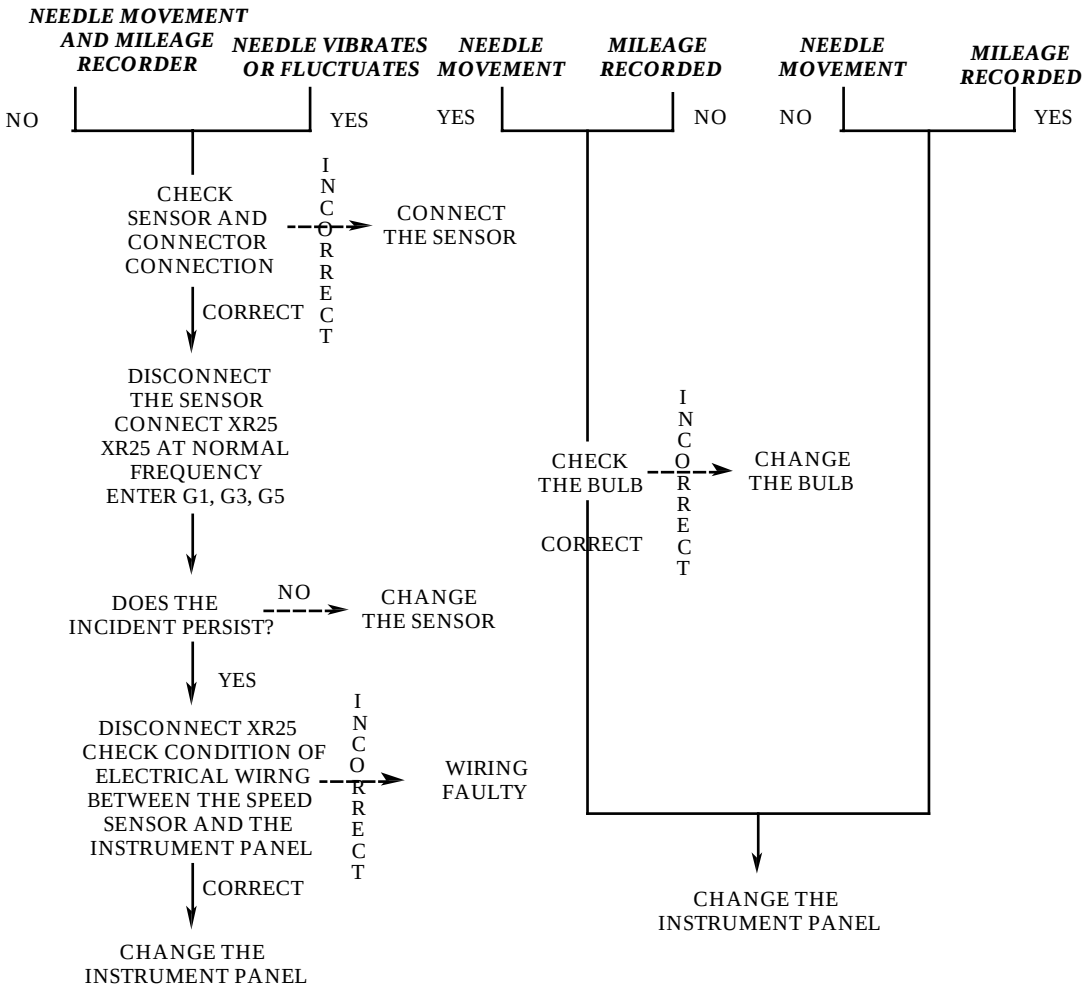
AFTER REPAIR	Adjust the various instrument panel function (clock, etc, ...) if necessary. Check that all the instrument panel functions operate correctly.

ntt1106.0

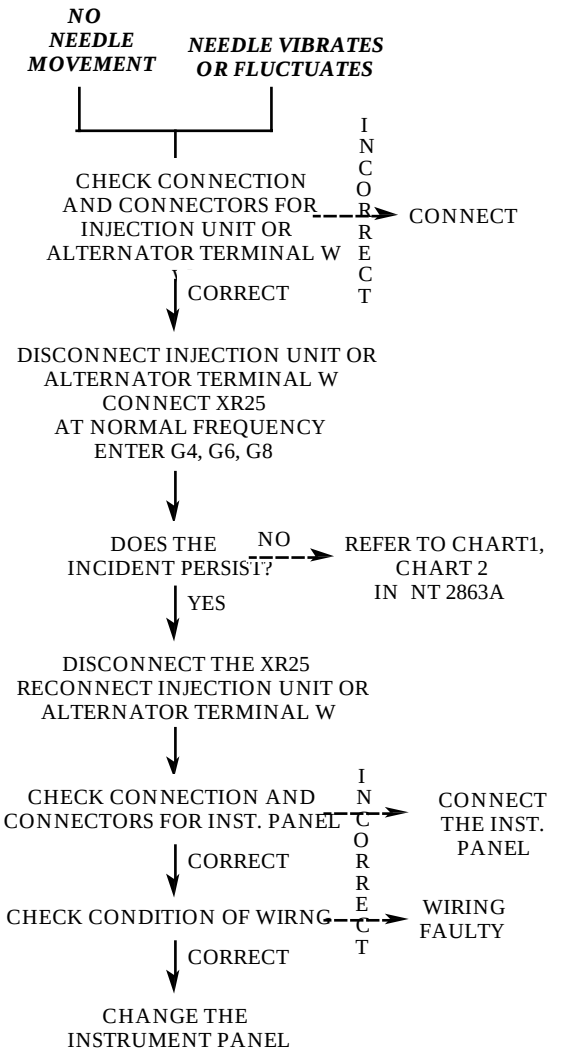
AID TO FAULT FINDING NT 2863A

INSTRUCTIONS	Check that the connector for the system are correctly fitted in place. Take care not to damage the connectors when carrying out the checks.

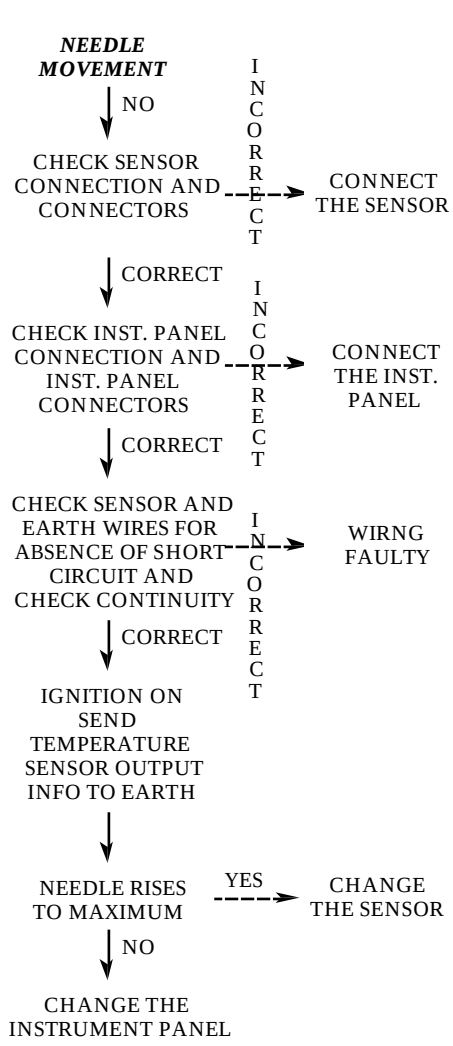
ELECTRIC SPEEDOMETER



REV COUNTER



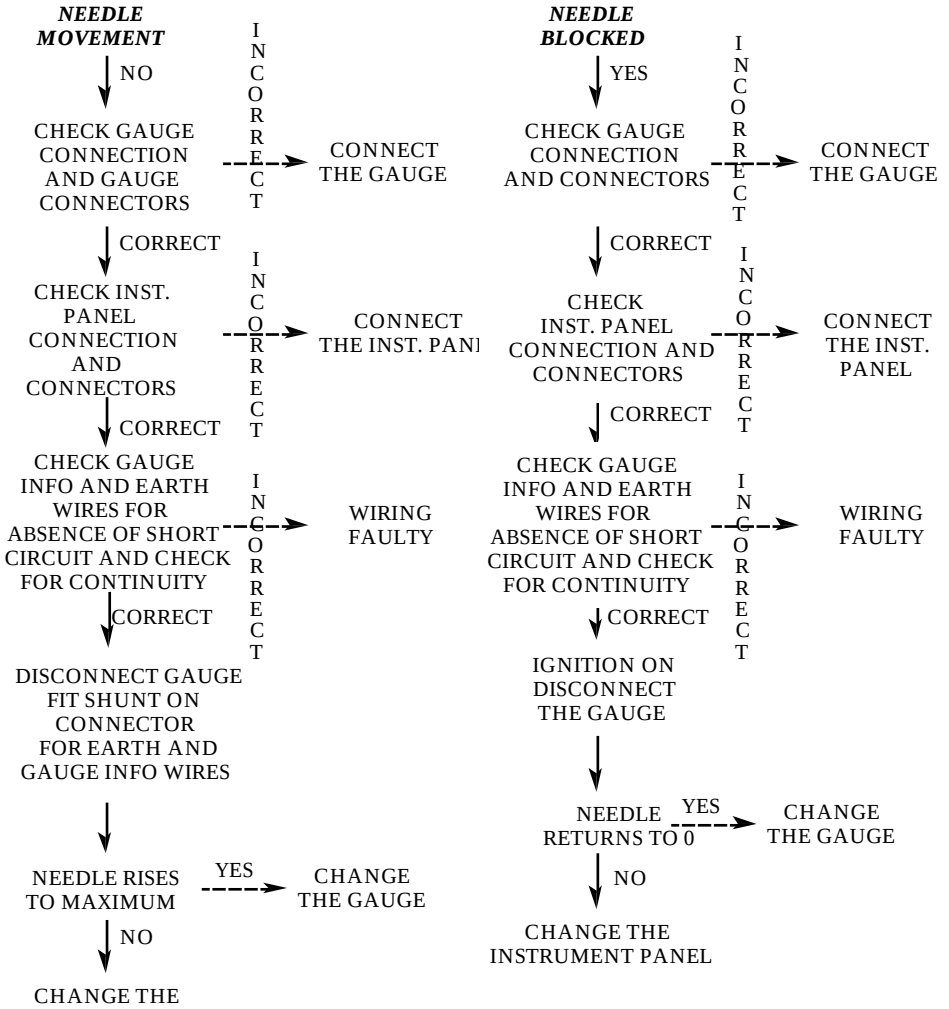
COOLANT TEMPERATURE



AID TO FAULT FINDING NT 2863A

INSTRUCTIONS	Check that the connector for the system are correctly fitted in place. Take care not to damage the connectors when carrying out the checks.

FUEL LEVEL NEEDLE



OIL LEVEL / LCD MILEAGE RECORDER