

# VISUAL IDENTIFICATION OF ELECTRICAL CAR INSTRUMENTS

Prefix	Indicator	Identification
(1) X or FG	Moving iron Fuel gauge	Pointer moves immediately ignition is switched ON.
(2) X or TE	Thermal Temp. Indicator and Thermal Pressure Indicator	Pointer moves slowly when ignition is switched ON. Pointer goes to HOT when ignition is switched OFF.
(3) TC	Semi-conductor Temp. Indicator	Pointer moves immediately ignition is switched ON.
(4) BT or BF	Bi-metal Temp. and Fuel Indicators	Pointer moves slowly when ignition is switched ON.

## HOW TO USE THE ELECTRICAL INSTRUMENT TESTER

**TO TEST BATTERY VOLTAGE** Connect Terminal 'I' on test set to battery supply and Terminal 'Earth' to vehicle chassis. Battery voltage is satisfactory if tester gauge indicates in right-hand sector (13 V) after two minutes.

**PROCEDURE FOR TESTING INDICATORS** Test battery voltage. With ignition switched 'OFF' disconnect lead from transmitter (Fuel or Temp.) and re-connect to Terminal 'T' on tester. Connect 'Earth' terminal on tester to vehicle chassis. Switch on ignition and after two minutes vehicle instrument should indicate position at which tester switch is set, i.e. Empty,  $\frac{1}{2}$  or Full, Cold, Normal or Hot. If correct, transmitter is faulty. If incorrect to the switch position selected, the instrument, wiring, or in the case of codes BF or BT, the voltage stabiliser is faulty. When wiring is suspected, connect 'T' terminal of tester direct to 'T' terminal on back of indicator and repeat. If instrument is now correct wiring between indicator and transmitter is faulty.

**TO TEST VOLTAGE STABILISER** Remove lead from Terminal 'I' on voltage stabiliser. Connect lead from terminal 'I' on tester to terminal 'I' on voltage stabiliser. Connect 'Earth' terminal on tester to vehicle chassis, switch ignition on and pointer on test gauge should read in first white segment after two minutes. If satisfactory proceed as for other types of indicators.

## FUEL GAUGES (Prefix X. or FG.) and TANK UNITS (Prefix X. or FT.)

The automobile fuel gauge consists of two parts—the fuel gauge itself mounted in the dashboard, and a tank unit in the fuel tank.

These items are connected by a lead which is often vulnerable to corrosive or abrasive action (see fig. 41).

The fuel gauge indicates the level of fuel in the tank in accordance with the position of the tank unit float. There is a limited reserve of fuel left when the gauge shows "Empty".

Before investigating this equipment:

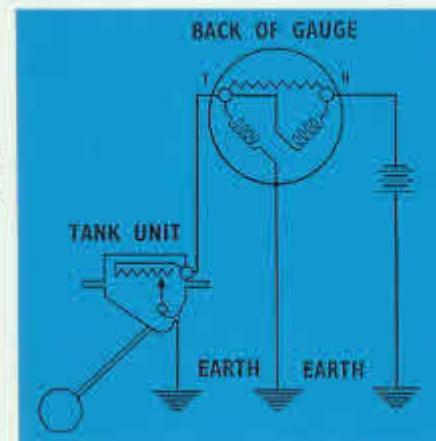
Always disconnect battery.

Never connect battery direct to 'T' terminals, as this will burn out the gauge.

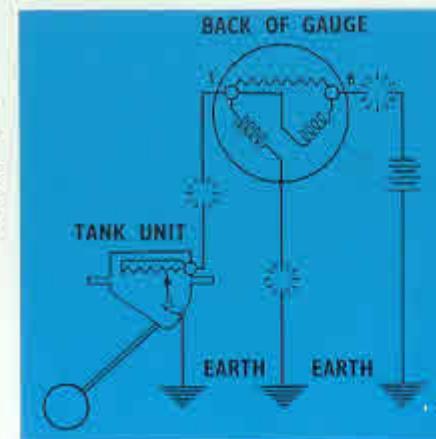
For fault finding see page 25.

### 38 CIRCUIT DIAGRAM

The fuel gauge and tank unit are connected as in the circuit diagram. 'Earth' is the vehicle frame.

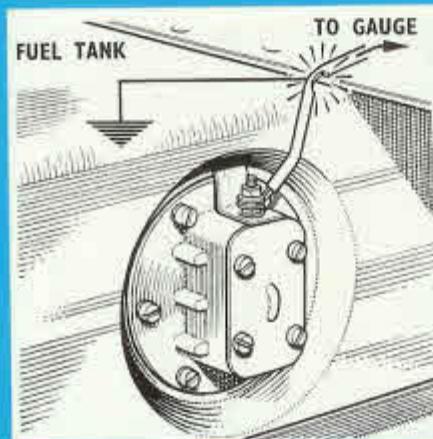


**39 NO READING OR 'EMPTY' WITH FULL TANK** Check for broken or disconnected leads. Ensure that gasket is in place between tank unit flange and tank. Reconnect as circuit diagram, 38.

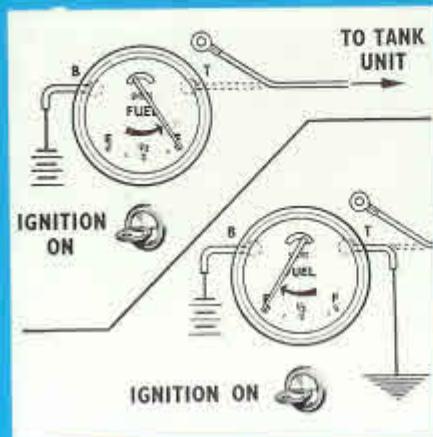




**40 NO READING OR 'EMPTY'**  
Check Fuel Gauge 'Earth' (Particularly important where panel is non-metallic.)



**41 NO READING OR 'EMPTY'**  
Check lead to tank unit short-circuited to 'Earth'. To reconnect see 38.

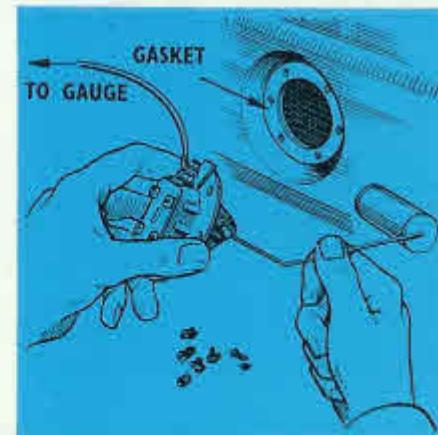


**42 FUEL GAUGE TEST**

- (i) Disconnect 'T' terminal. Reconnect battery. Switch on ignition. Gauge should read 'Full'.
- (ii) With 'T' terminal still disconnected, earth 'T' terminal. Gauge should read 'Empty'.

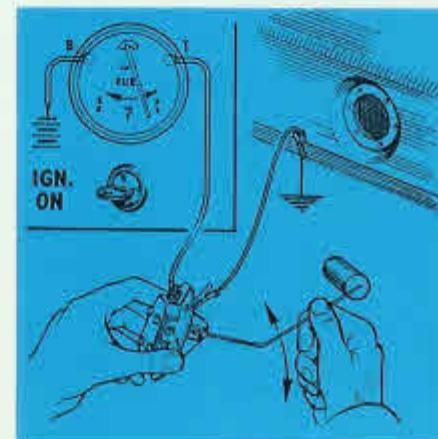
**43 TANK UNIT TEST (a)**

- (i) Ensure petrol is below level of Tank Unit.
- (ii) Remove Tank Unit from tank by undoing six screws and carefully lifting out. Arm should not be bent other than as supplied.
- (iii) Check that arm works freely.



**44 TANK UNIT TEST (b)**

- (i) Connect Tank Unit terminal to 'T' terminal of Fuel Gauge already tested (see 40 and 42).
- (ii) Connect Tank Unit body to 'Earth'.
- (iii) Reconnect battery.
- (iv) Switch on ignition. Fuel Gauge should show relative position of float arm. If Fuel Gauge shows 'Full' only, Tank Unit is defective. Return for replacement.



**45 RECOGNITION GUIDE**

Where inaccurate readings are suspected, it may be that an incorrect fuel gauge or tank unit has been fitted. This can be checked by noting the code number which appears on the dial of the gauge and the top plate of the tank unit, and referring to Smiths Industries Limited.

