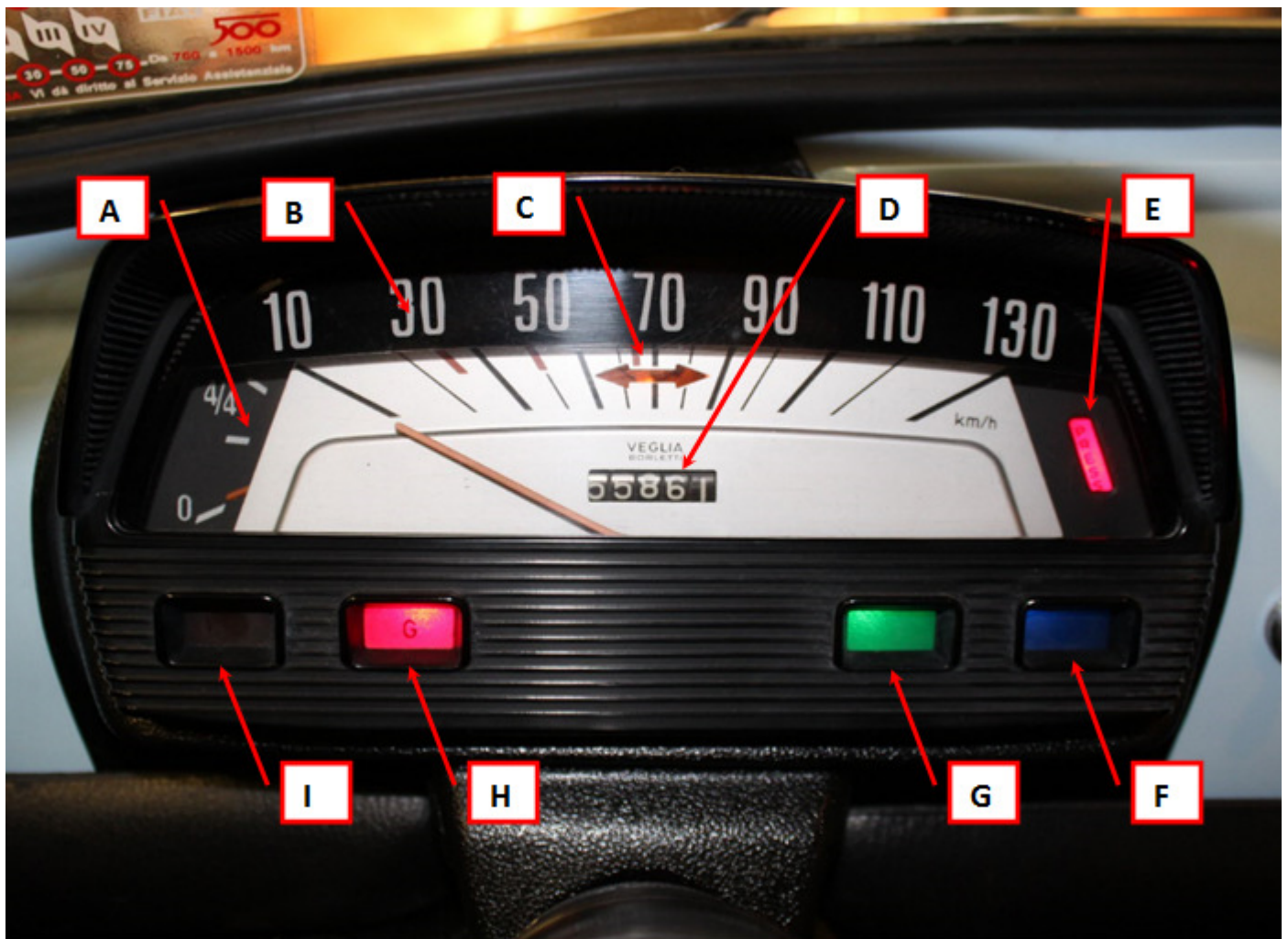


# Fiat 500L Dash cluster

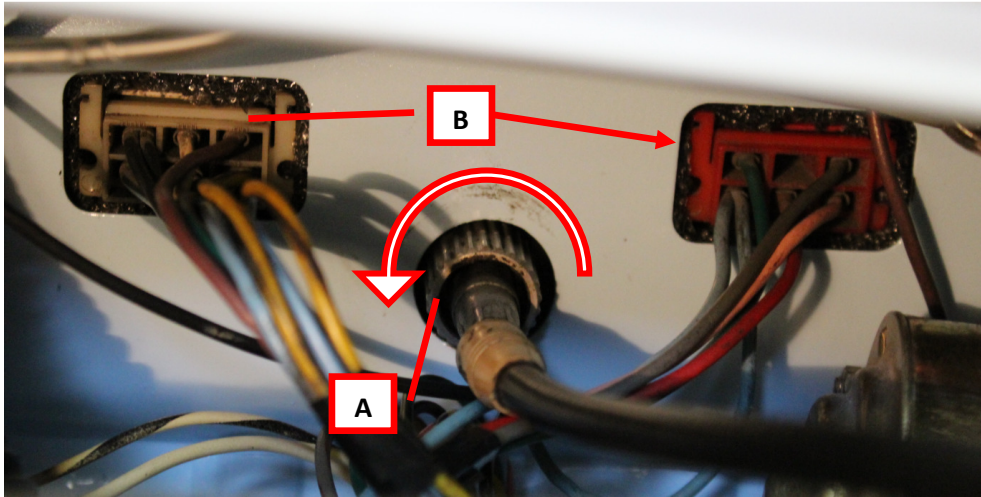
By Sean Thomas 30/07/2016



## **Fiat 500L Instrument cluster incorporating:**

- A. Fuel gauge
- B. Speedometer (gauged in km or miles)
- C. Direction Indicators arrow telltale
- D. Mileage recorder
- E. Insufficient oil pressure indicator
- F. High beam indicator
- G. Parking lights indicator
- H. Alternator/Dynamo charge indicator
- I. Fuel reserve indicator

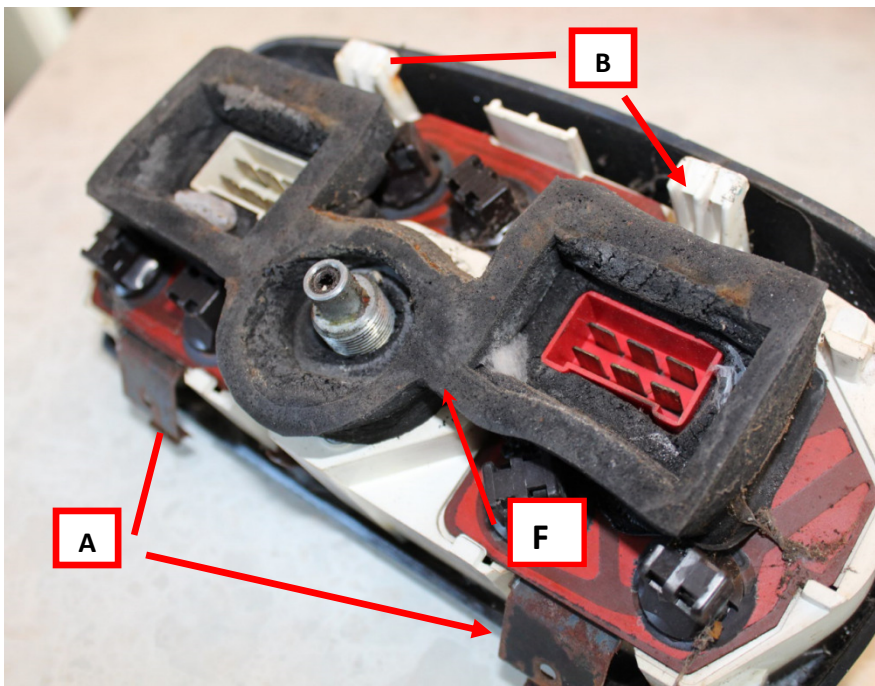
## Removal



**From within the front compartment:**

Unscrew the speedometer cable turning the knurled nut in an anti clockwise direction. Pull the cable away including the inner cable.

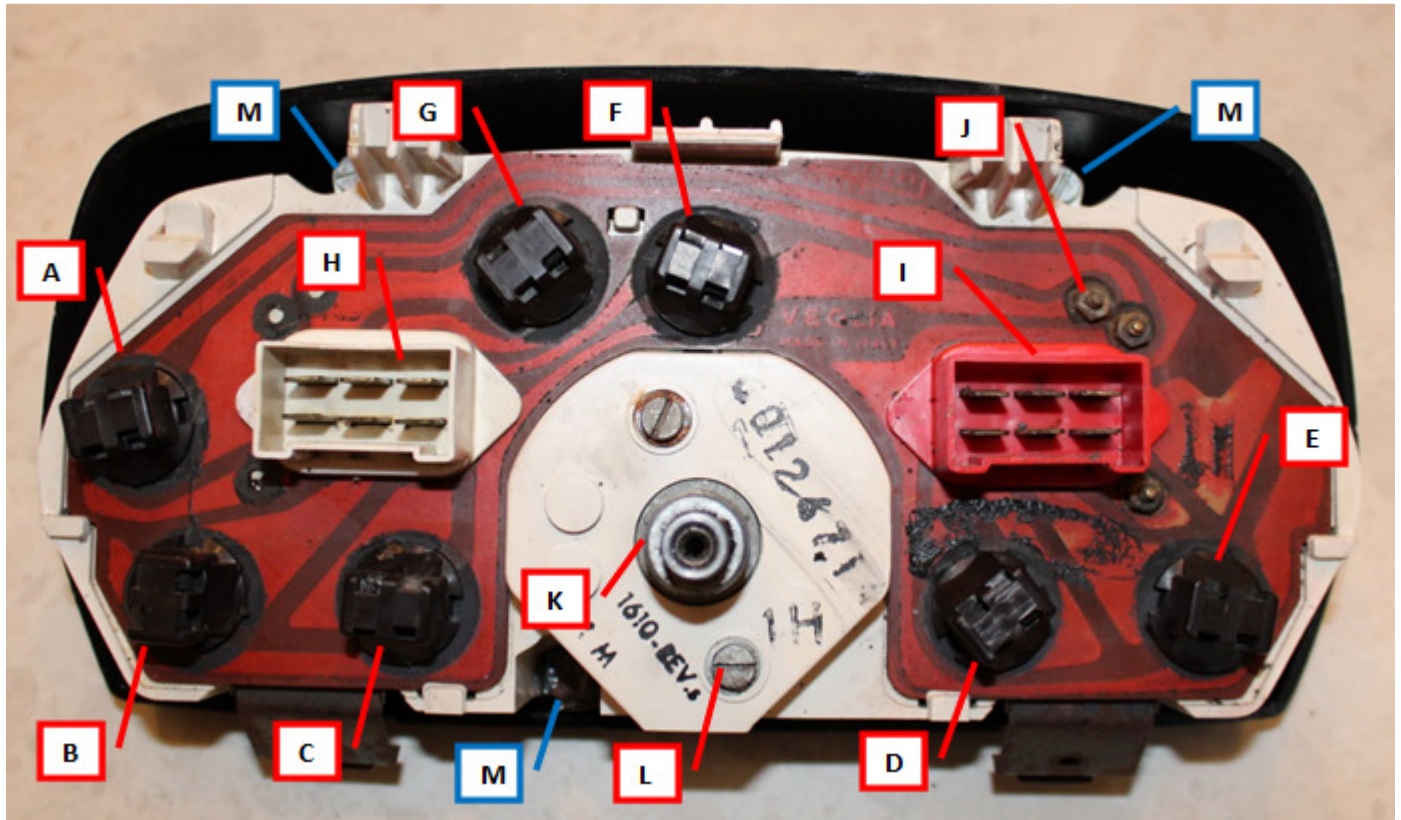
Pull the white and red terminal block towards the front of the car.



**From inside the car:**

- A. Lift the spring clips to release the bottom of the dash cluster from the dash surround.
- B. Pull the bottom of the cluster toward you and the retaining lugs will release from the dash.
- C. Remove the dash cluster from the car. Remove the foam insulator.

## Dismantling the cluster



The rear of the cluster:

The light bulbs:

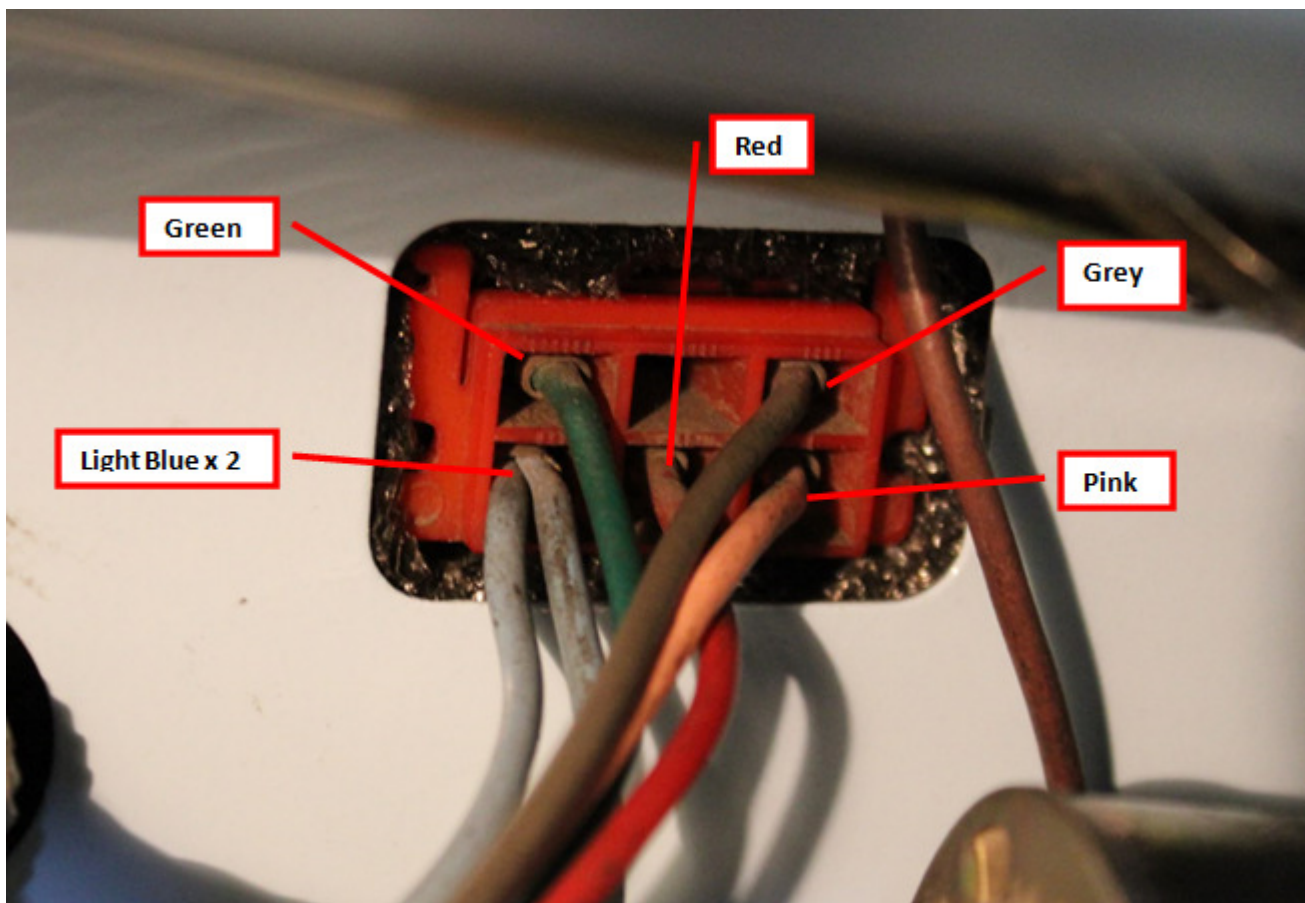
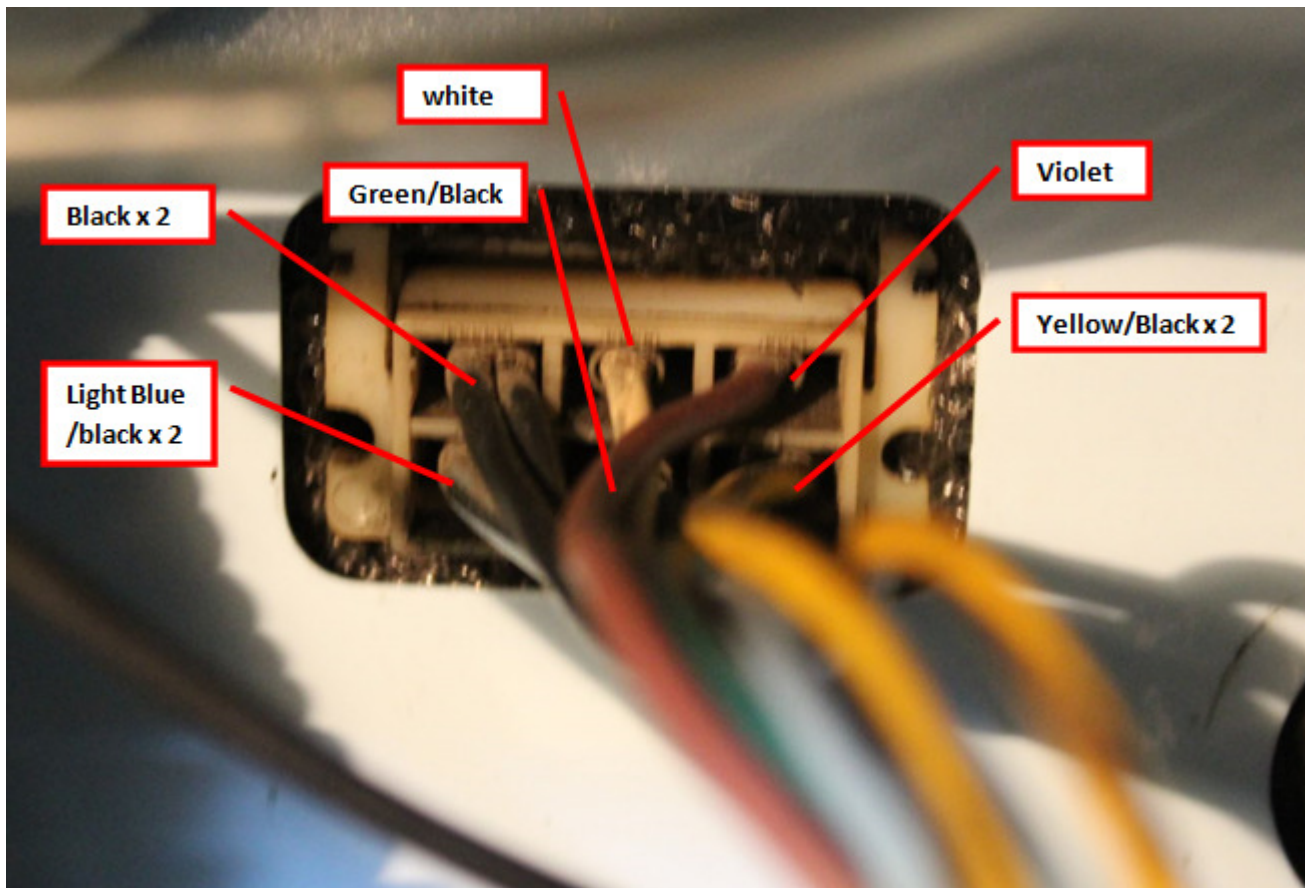
- A. Insufficient oil pressure indicator
- B. High beam indicator
- C. Parking lights indicator
- D. Alternator/Dynamo charge indicator
- E. Fuel reserve indicator
- F. Direction Indicators arrow telltale
- G. Dash illumination

**Electrics, Speedometer & fixings**

- H. White terminal block
- I. Red terminal block
- J. Fuel gauge retaining nuts and electrical pickup points (7/32" nuts - quantity 3)
- K. Speedometer cable attachment
- L. Speedometer retaining screws (4mm x 8mm - quantity 2 )
- M. Exterior dash surround retaining screws (4mm x 14mm - quantity 3 )



## The Electrics



## Where they go:

### White Terminal Block:

**Black:** 2 wires

Windscreen wiper switch

Windscreen wiper motor

**White:**

Instrument cluster light switch

**Violet:**

Flasher relay (P terminal)

**Light Blue/black:** 2 wires

Flasher relay (+ terminal)

Wiper Motor

**Green/Black:**

Steering column light switch

**Yellow/Black:** 2 wires

Light switch

fuse box (Terminal F)

### Red Terminal Block:

**Green:** Alternator/Dynamo

**Light Blue:** 2 wires

Ignition switch

Fuse Box Terminal 2

**Red:**

Fuel gauge sender unit (terminal W)

**Pink:**

Fuel gauge sender unit (terminal I)

**Grey:**

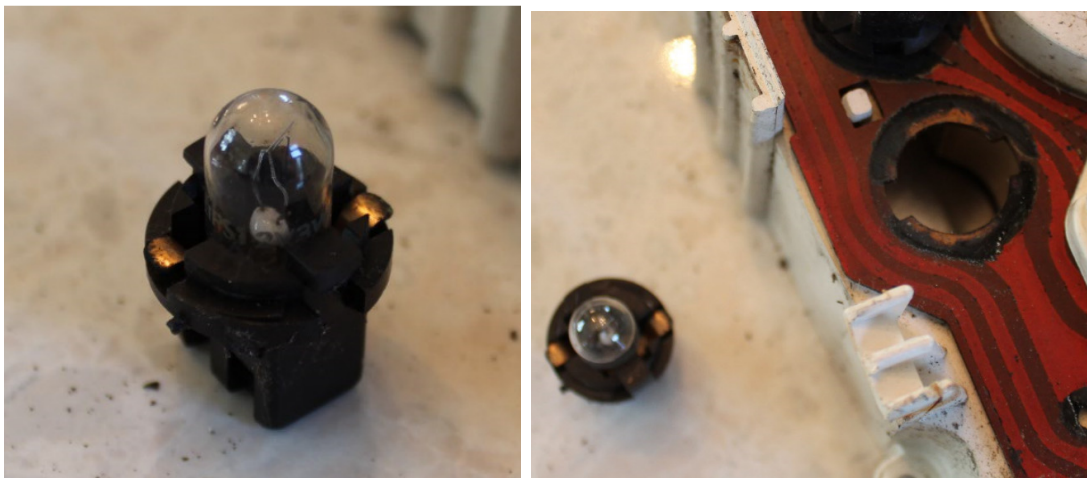
Low oil pressure sender unit (Engine)

The cluster operates using a flexible type printed circuit board that is connected to the terminal blocks. All component's are connected via copper strips that are sandwiched between 2 protective layers. Contacts and exposed areas where the light bulb holders locate need to be clean from dirt, paint or corrosion to provide a good electrical connection.

## Dismantling the Cluster

Remove the light bulbs by turning anti clockwise.

Check the bulbs work by testing them with an electrical tester or connecting 2 wires to the terminals of a battery and touch the wires to each terminal of the bulb holder.



Break the anti tamper tab on the bottom outer casing screw, then undo the 3 retaining screws.



Remove the outer casing from the cluster body.





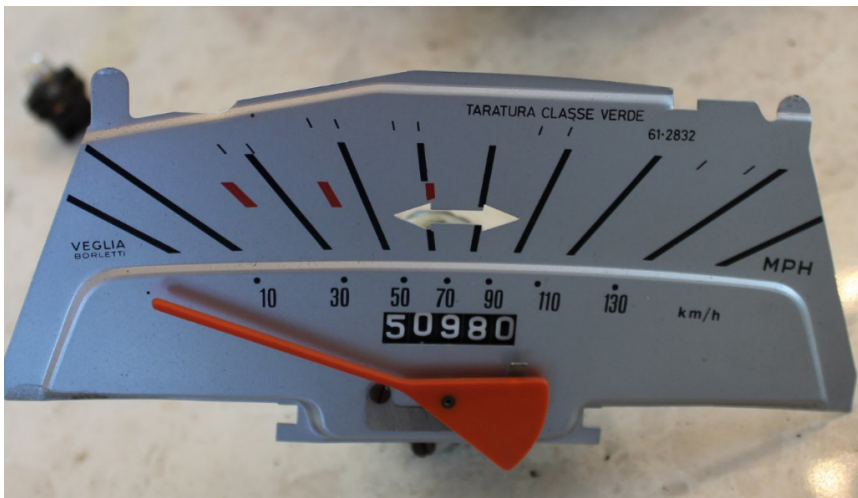
Remove the speed indication clear screen from the surround.



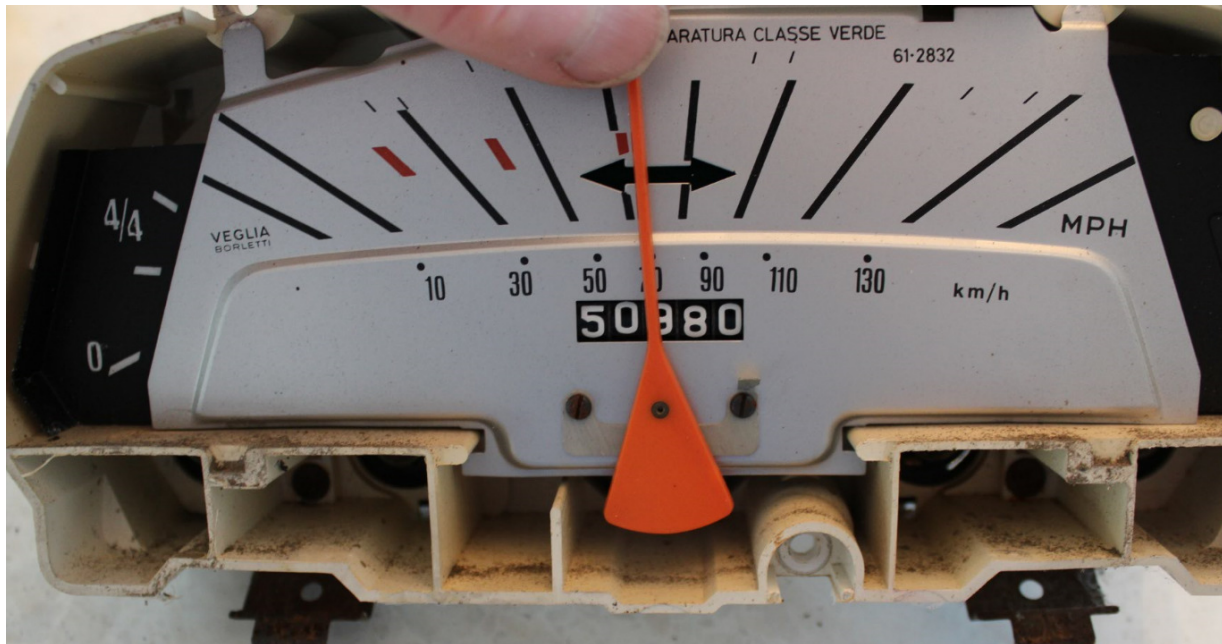
Undo the 2 screws on the back of the module that hold the speedometer drive to the body.



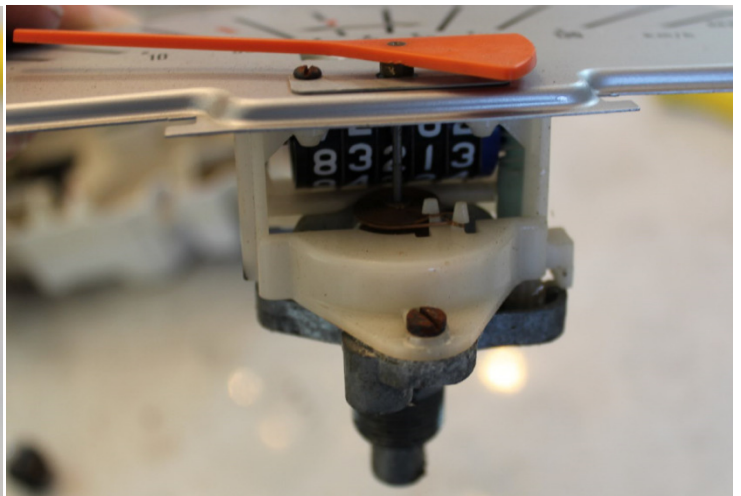
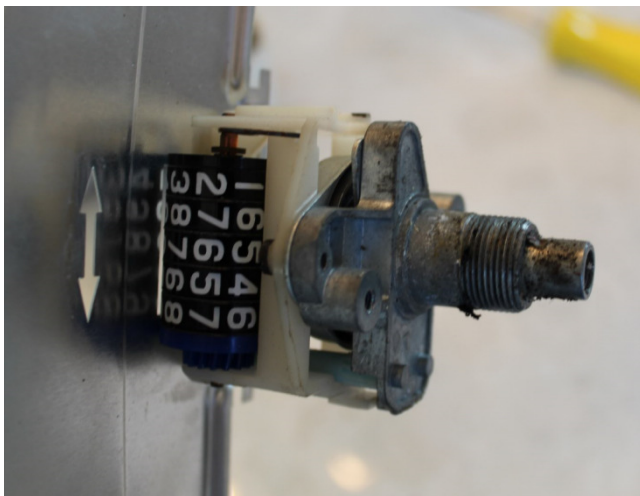
Then remove the Speedometer assembly.



This unit can be dismantled, but unless damaged i would leave it alone.  
To dismantle pull the gauge pointer off its shaft carefully.  
Then undo the 2 small screws and the plate that adjusts the 0 speed setting.  
On this version i could not remove this and decided to leave it rather than break it.

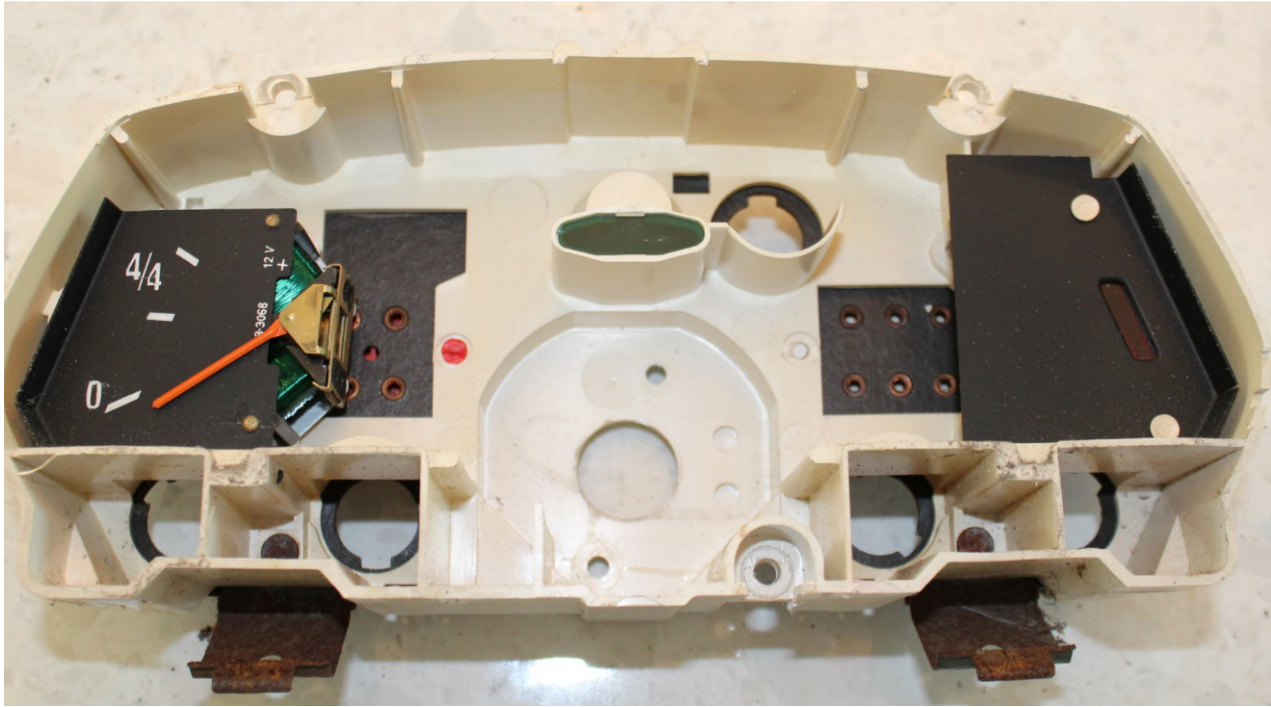


The speedometer can then be dismantled if you know what you are doing.

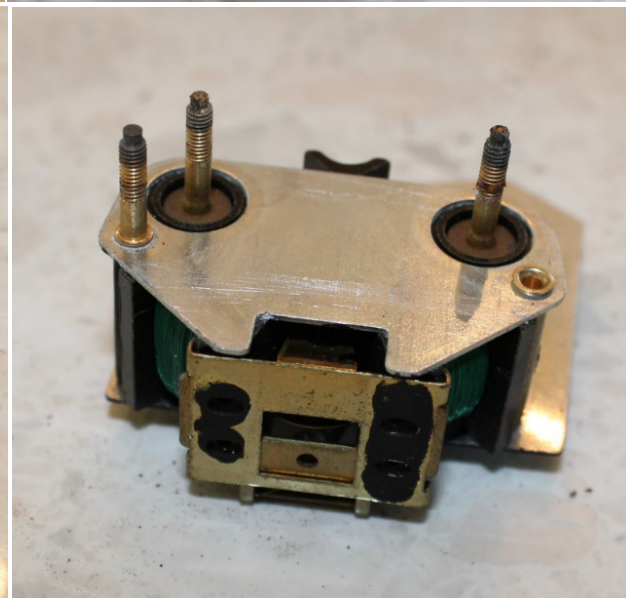
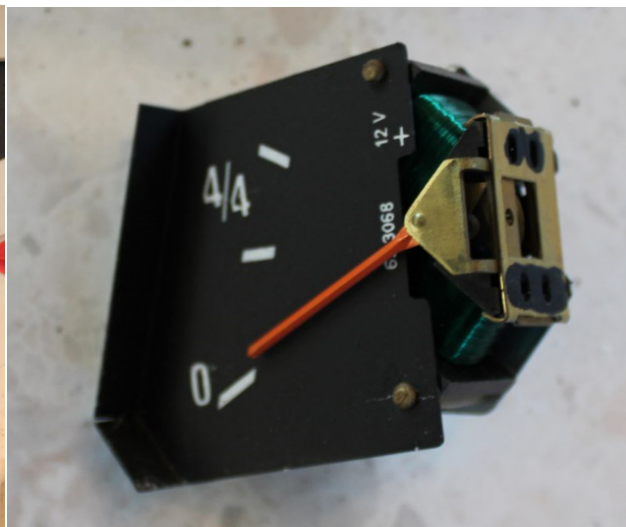
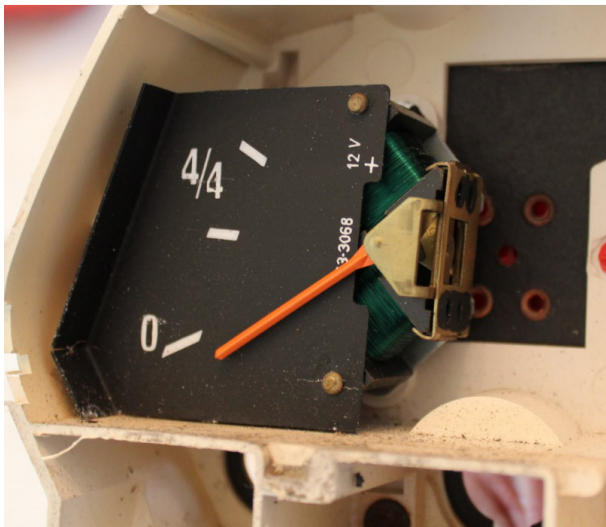




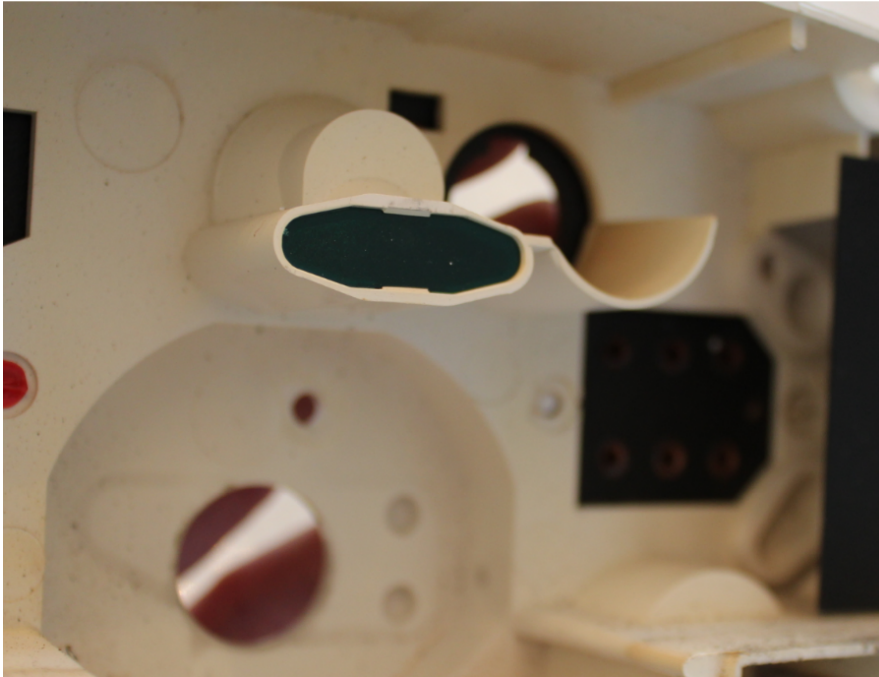
Remove the Fuel gauge by releasing the 3 x 7/32" nuts and washers and then the unit can be removed.



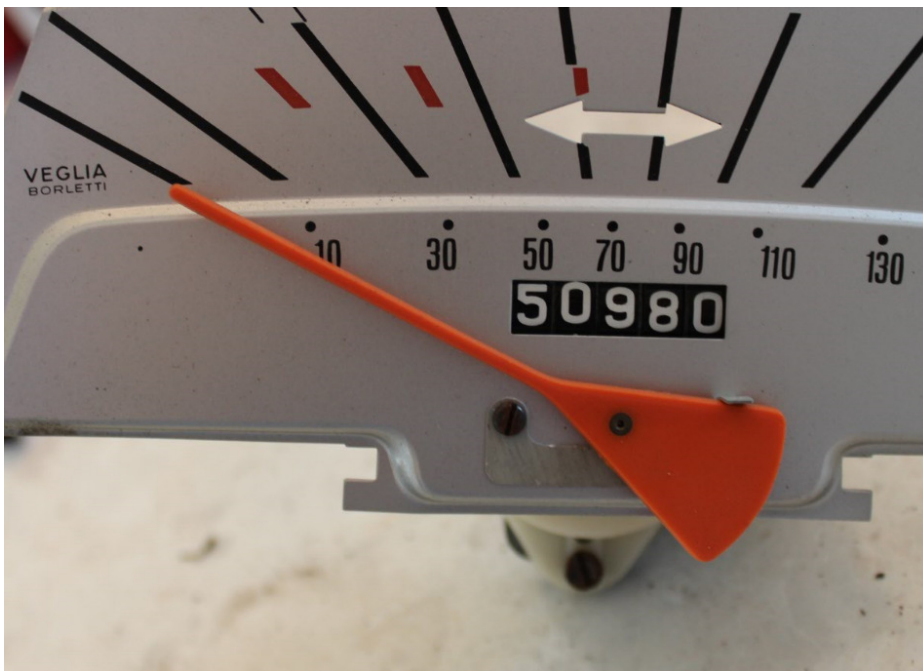
This unit can be replaced if damaged or repaired by a professional.



Some models have a green plastic over the indicator bulb.



When assembled, this tab can be adjusted to alter the dial pointer to sit on 0.







My 1971 500L was from Italy and only had km/h on the display.

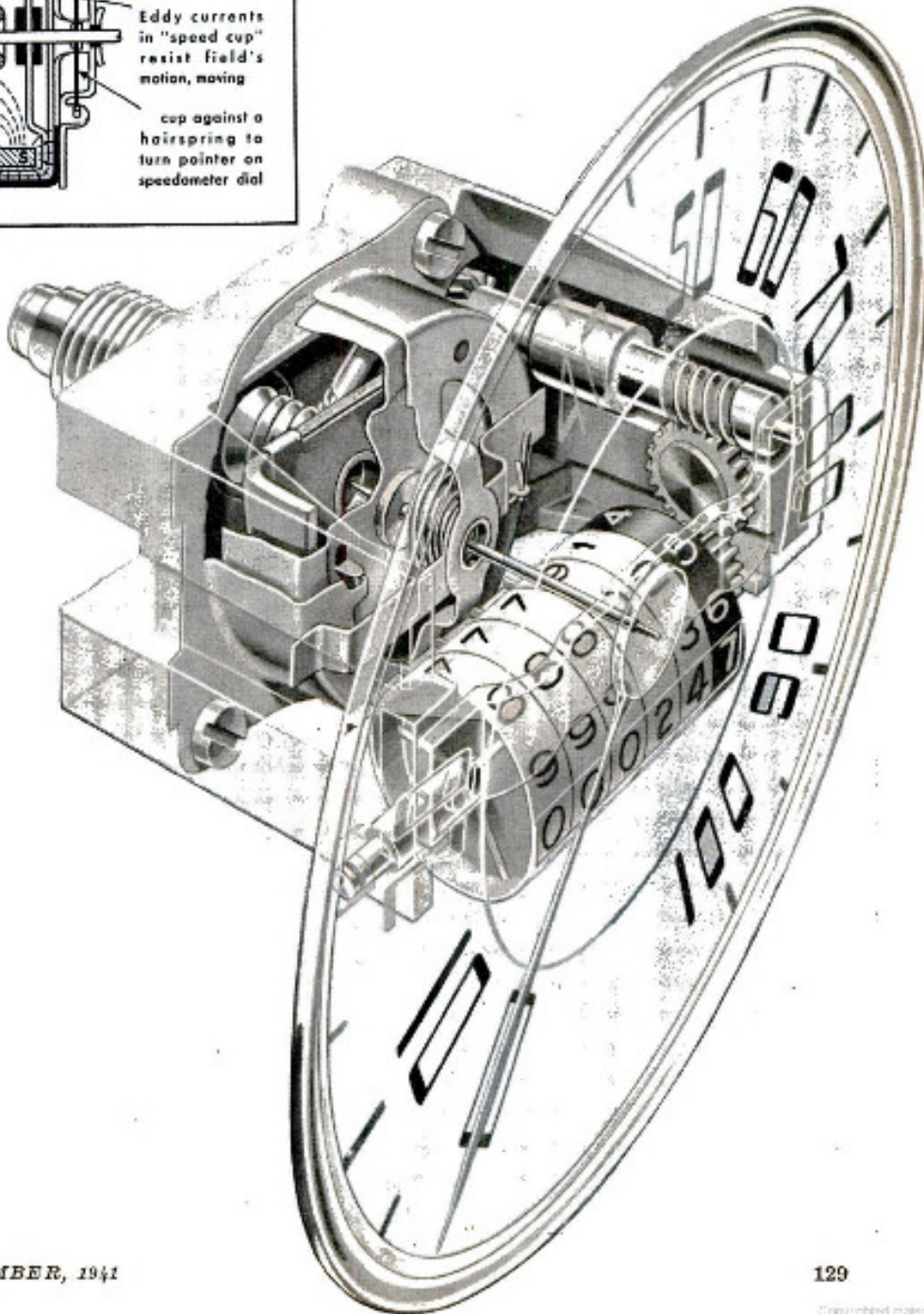
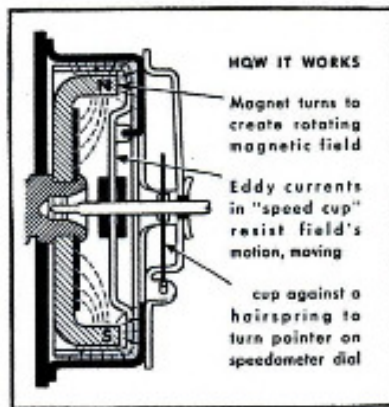
I have changed mine for a UK spec model that has MPH & km/h. The Odometer is now in miles.

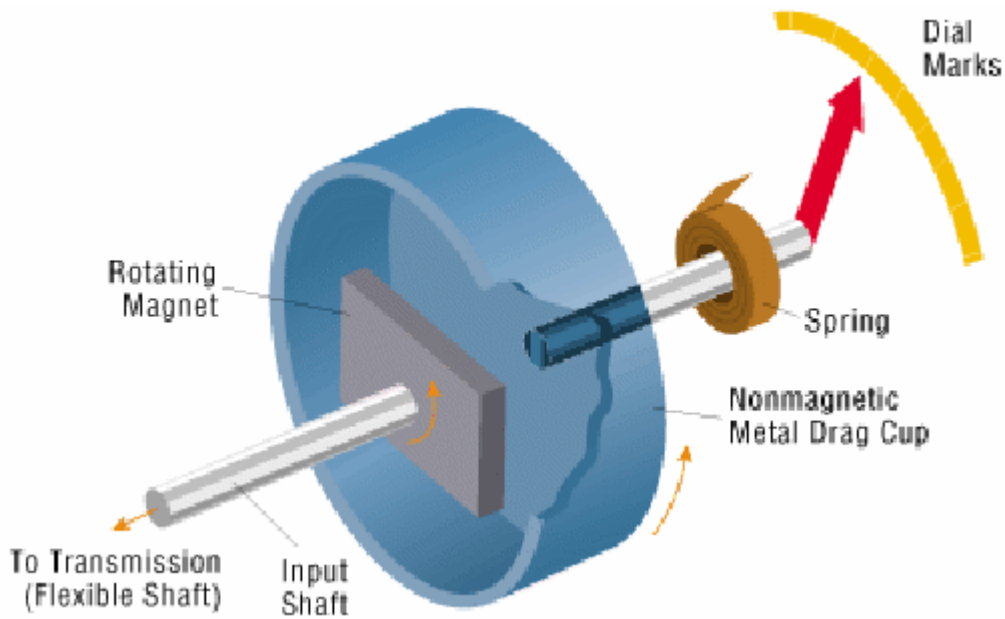
It was a direct swap in terms of the speedometer cable and electrical connectors/wiring.

The outer casing was rather dull and was cleaned, prepared and given a coat of Plasticoat to give it a fresh finish.



## How does a speedometer work





1. When the engine turns over, the driveshaft turns to make the wheels spin round.
2. The speedometer cable, powered by the driveshaft, turns as well.
3. The cable spins a magnet around at the same speed inside the speed cup. The magnet rotates continually in the same direction (in this case, counter-clockwise).
4. The spinning magnet creates eddy currents in the speed cup.
5. The eddy currents make the speed cup rotate counter-clockwise as well in an attempt to catch up with the magnet. Remember that the magnet and the speed cup are not joined together in any way—there's air in between them.
6. The hair spring tightens, restraining the speed cup so it can turn only a little way.
7. As the speed cup turns, it turns the pointer up the dial, indicating the car's speed.