

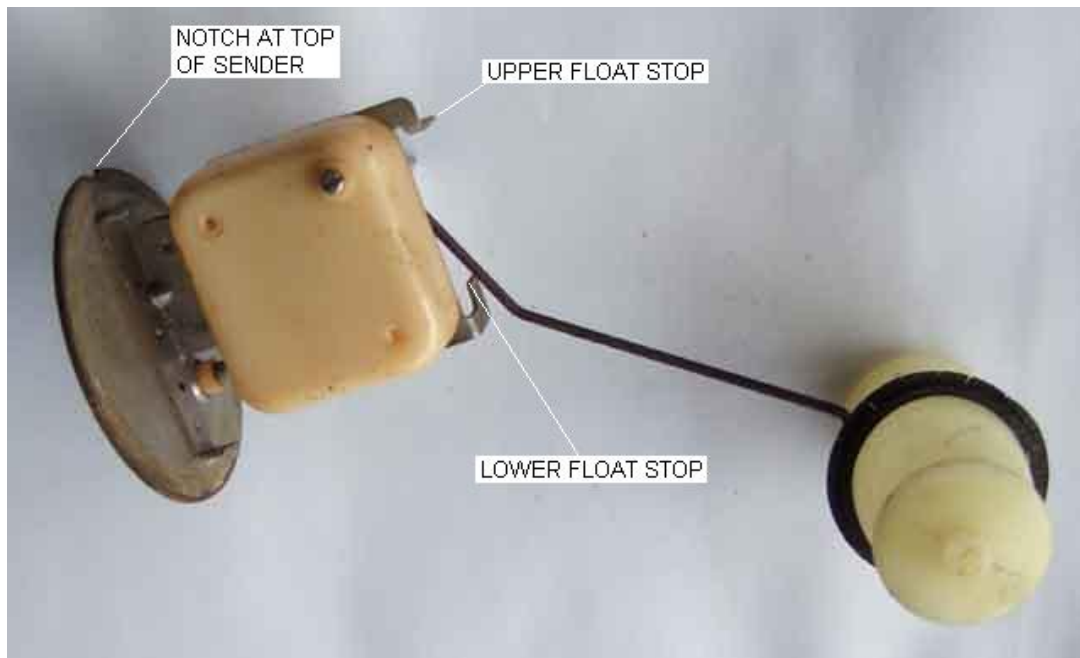


Fuel Gauge Sender

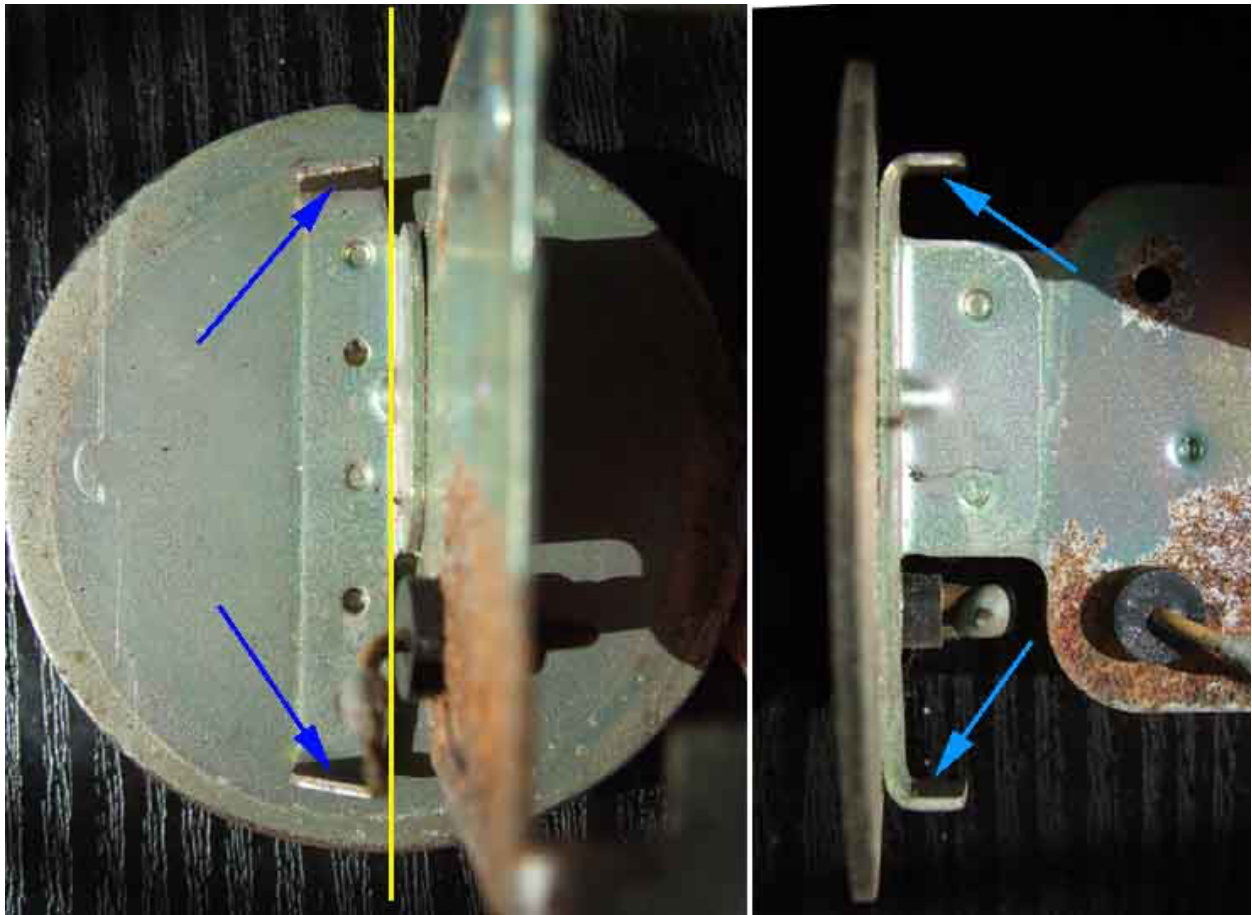
[Locking ring](#)

What's inside the tank: This is the sender used from March 1965 to the end of the 1976 model year that is attached to the tank with a locking-ring, although all the senders work on the same basic principle of a float arm moving a wiper contact across a winding as the fuel level rises and falls to vary the resistance. This change in resistance is used to alter the gauge reading.

Float shown in the 'empty' position showing the upper and lower 'stops' for float arm movement. The screwdriver slot isn't for calibration as one may hope but is just cut into the end of the float arm where it comes through the plastic box which is one half of what locates the arm. The tabs of the upper and lower 'stops' do give some adjustment of the upper and lower extremities of movement of the float but they are designed to set the relative positions of the wiper to the ends of the resistance winding at the upper and lower extremities. You may be able to get a bit more travel of the float by adjusting these but go too far and you will allow the wiper to come off the end of the resistance winding which will cause the gauge to drop back past E. You can also bend the float arm up and down which will alter the relationship between fuel level and wiper position and hence gauge reading but unless you get it right first time is much more of a fiddle to calibrate the gauge than adjusting the gauge itself. As new senders seem to stop short of both E and F bending the float arm will result in being even more short of F if you adjust for E or vice-versa. Note also the notch at the top of the sender mounting plate, however this is not the main part that ensures correct orientation in the tank.



That is done by two offset tabs on the inside face of the mounting plate - seen here to the left of the yellow centre line, that engage in cut-outs in the tank.



Matching offset cut-outs in the tank:



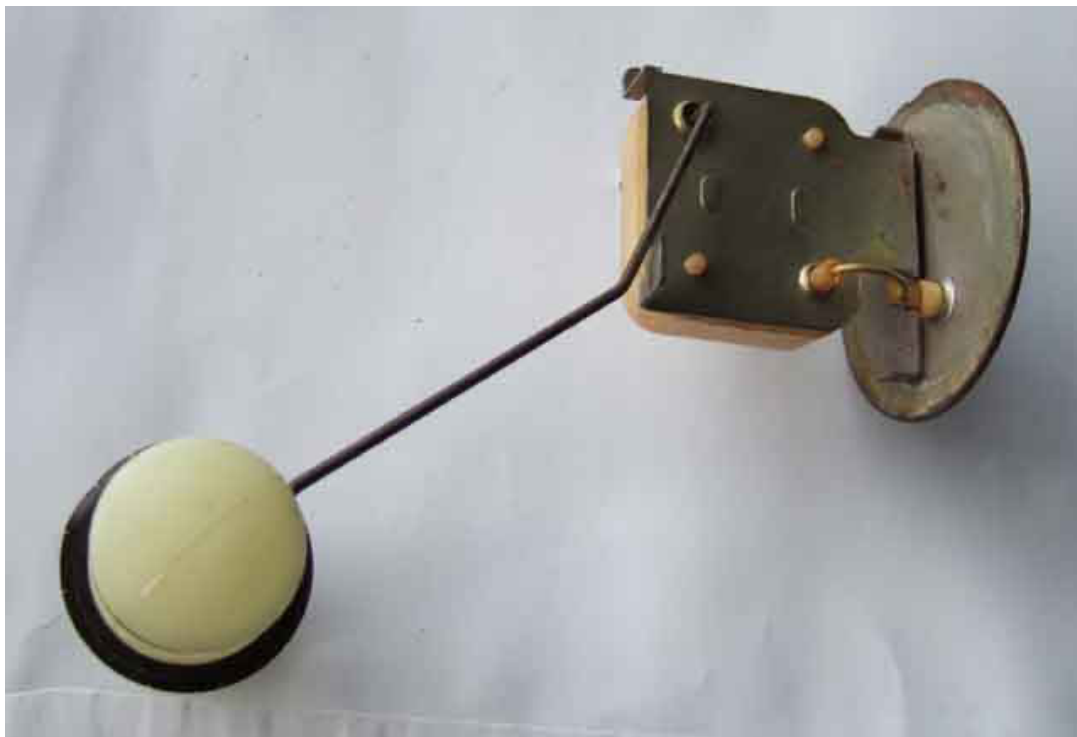
Similar offset tabs on the later plastic senders: (*Mark Morris*)



Showing the standard spade in an insulator for the green/black gauge wire, and the under-sized earth wire spade riveted directly to the base.



The other side again with the float shown in the 'empty' position showing the float arm going through the metal back-plate and the end of the resistance winding coming out through an insulated plug and going to the back of the insulated spade terminal. Note the rubber ring on the float which in theory is to prevent the float rattling on the bottom of the tank with low fuel levels. However in practice the lower float arm stop further downward movement of the float quite some time before it reaches the bottom of the tank. On my cars this happens with somewhere between a half gallon and a gallon before they actually 'run out' i.e. the fuel level drops below the level of the pickup.



Inside the plastic box, float in the upper or 'full' position. You can see the wiper attached to the float arm and the resistance wire wrapped around the former. Where the float arm comes through the metal back-plate it picks up an earth connection which it then applies to the resistance winding by the moving wiper. The resistance winding has a connection from its lower ('full' or low resistance) end to a stiff wire which goes through an insulator in the back-plate to the insulated spade connection on the sender. This means that when the tank is full there is very little resistance in circuit, a relatively high current flows, and the fuel gauge reads full. As the level in the tank falls, the resistance increases, the current falls, and the gauge reading reduces. Clearly visible is the damage to the windings probably caused by a poorly manufactured or adjusted wiper. This is the 'original' (or at least very old) unit off the roadster, but the 'original' and the first replacements to both roadster and V8 all failed in exactly the same way. The second replacements to both cars have (so far!) lasted much longer.

