

Figure 57—Fuel Gauge Receiver Unit—Lincoln 9EH-9EL

The sender units for Lincoln EH and EL and Mercury CM are not interchangeable between models. The gauges (receiver units) are not interchangeable between Lincoln and Mercury vehicles because of dissimilarity in faces of receiver units.

OPERATION

When the fuel tank is empty, the float of the tank sender unit is at the bottom of its movement and the two contacts in the sender unit are just touching. See figure 58. With the ignition switch turned on, current flows through the circuit and heat is generated in the heating coil causing the bimetal to bend. Bending of the bimetal opens the contacts and the circuit is broken. The heating coil and bimetal then cools and the spring returns to its former position where contact is again made.

Since the heating coils of the sender and receiver units are connected in series, a similar slight bending of the bimetal in the receiver unit takes place, which is just sufficient to pull the pointer to the zero position.

When the fuel tank is filled, the action of the float and eccentric shaft raises the grounded contact against the insulated bimetal contact, bending the bimetal in the sender unit.

With the bimetal under tension, a greater amount of current is required to bend it sufficiently to break contact. A similar increased bending of the bimetal in the receiver unit occurs and this action pulls the needle over to the Full position on the scale. The cycle of opening and closing of the contacts is continuously repeated.

Because the bimetals heat and cool slowly, sudden changes of fuel level caused by driving over rough roads, etc., are dampened and a steady reading of the average fuel level in the tank is indicated.

TESTING FUEL GAUGE RECEIVER AND SENDER UNITS

If the fuel gauge does not satisfactorily indicate fuel level, tests must be made to determine if units or the wiring are defective.

Trouble in the units or circuit may cause the gauge to indicate EMPTY at all times or the pointer may constantly rest beyond the FULL mark.

When the gauge unit receiver **does not indicate fuel level** with ignition switch turned on, check sender unit and wire to receiver unit as follows:

1. Remove cover plate over sender unit and with ignition switch turned off, short out sender unit by clipping one end of a wire to terminal 1 of sender unit (figure 59) and the other end of wire to ground.

2. Turn ignition switch on momentarily. If receiver unit now gives an indication, then sender unit is defective and must be replaced. **CAUTION:** Turn ignition switch off before pointer reaches end of scale, otherwise damage to the receiver unit will result.

3. If receiver unit does not show any indication after completing step 2, ground the sender-to-receiver wire at terminal 2 on the receiver unit (figure 59).

4. Turn ignition switch on momentarily. If receiver unit now indicates, then wire to sender unit is defective and must be repaired. However, if receiver unit fails to indicate, then receiver is defective and must be replaced.

   CAUTION: A defective sender unit or wiring may have damaged the receiver unit. After installing a new receiver unit, observe its action after turning ignition switch on

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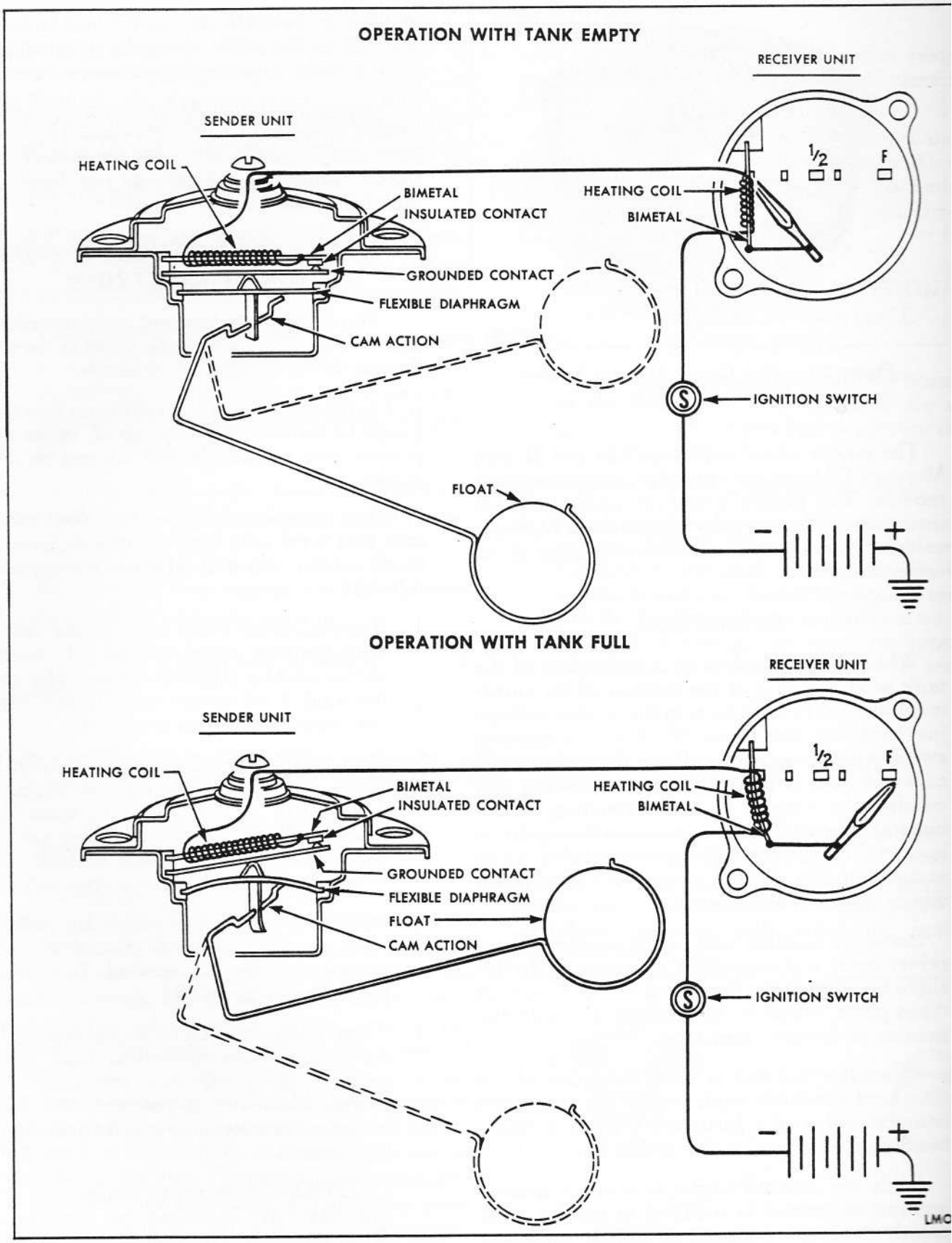


Figure 58—Operation of Fuel Receiver and Sender Units