

# HOBSON K-S PETROL TELEGAGE

Hobson

## DESCRIPTION

The Hobson K-S Petrol Telegage is an instrument without any mechanical moving parts and consists of three components, viz : Tank Unit, Air Line, and Indicating Unit on the Instrument Board, as shewn in Figs. 1 and 2.

The Tank Unit (Fig. 3) consists of an Air Chamber and Air Tube, the latter being connected to the Indicating Unit by means of the Air Line.

The Indicating Unit (Fig. 4) is made up in the form of a U Tube containing a special heavy red liquid. One half of this U Tube is of glass, open at the top end and visible on the Instrument Board, the other half being of brass, acting as a reservoir. The calibrating wires in the reservoir are used to compensate for differences in bore of the Glass Tube, the correct number being inserted at the time of manufacture.

When in operation the Air Chamber and Air Tube of the Tank Unit (Fig. 3) together with the Air Line and part of the reservoir of the indicating U Tube (Fig. 4) are filled with air.

During the process of filling the tank, the increasing head of petrol exerts a pressure on the air in the Air Tube through the Air Chamber (Fig. 3) which is open to the tank through the hole C. This pressure is exerted through the Air Line to the Indicating Unit and causes a rise of the red liquid in the Glass Tube. Conversely as the amount of petrol in the tank decreases, the air pressure is lowered and the red liquid falls in the Glass Tube, thus indicating the exact amount of petrol in the tank.

The Vent Tube, open at the top, is a safety device which protects the gauge against excessive pressures.

The remainder of the Tank Unit, namely, the Air Cup and Air Delivery Tube act only as a means for supplying air to the Air Chamber, to overcome any loss of air due to absorption in the petrol and contraction due to a drop in the temperature.

The Air Supply to the Tank Unit is obtained by making use of the movement of the petrol in the tank. When the Air Cup is above the petrol level in the tank, it is constantly being filled by the surge or splash of the petrol when the car is in motion. This petrol flows through the Drain Hole D and down the Air Delivery Tube, drawing with it bubbles of air which are released at the bottom of the tube under the Air Chamber, entering the latter through hole C and displacing any petrol which may be in the Air Chamber. When the Air Chamber is full of air, any further air passing down the tube is released into the tank.

For correct operation of the gauge, three conditions are essential, viz :—

1. The red liquid in the Indicating Unit must be set at the bottom line of the dial when the Air Line is disconnected.
2. The Air System must be entirely free from leaks.
3. The Tank Unit must supply air by the surging of the petrol.

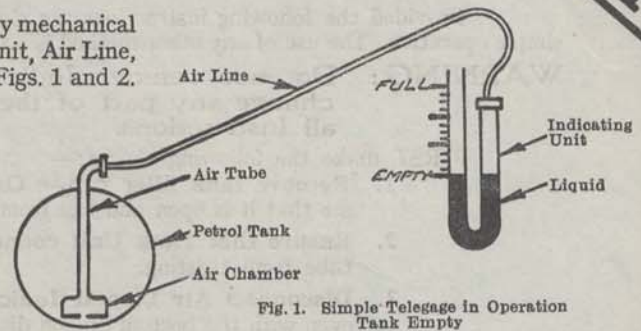


Fig. 1. Simple Telegage in Operation Tank Empty

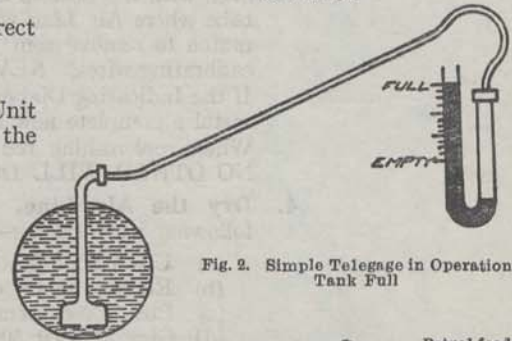


Fig. 2. Simple Telegage in Operation Tank Full

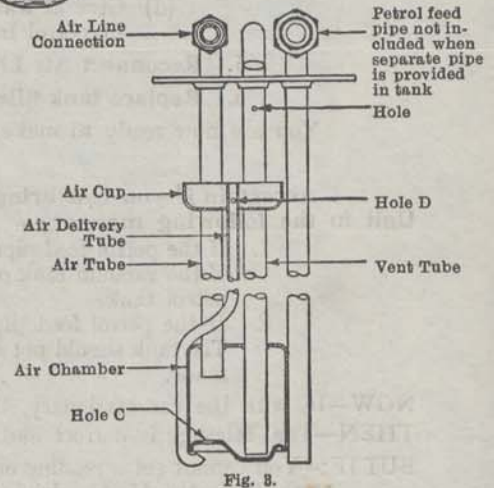


Fig. 3.

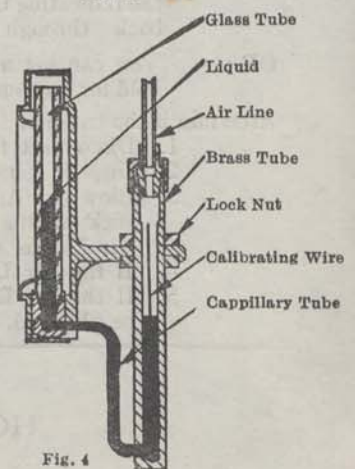


Fig. 4

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## SERVICE INSTRUCTIONS

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Provided the following instructions are closely followed the servicing of a Petrol Telegage is a simple operation. The use of any other method is a waste of time and will not produce satisfactory results.

**WARNING:** Do not remove Indicating Unit from Instrument Board or change any part of the installation until you have acted upon all instructions.

FIRST make the following checks:—

1. **Remove tank filler cap.** On cars where a vent hole is provided in the filler cap see that it is open and free from dirt. Do not replace filler cap or drain petrol tank.
2. **Ensure that Tank Unit connection is tight.** Use a second spanner to prevent tube from twisting.
3. **Disconnect Air Line at Indicating Unit only.** The red liquid should now read even with the bottom line on dial. Add or remove liquid as required at top of brass tube where Air Line was disconnected. Use a medicine dropper to add liquid or a match to remove some by absorption. Be careful that match does not extract any calibrating wires. NEVER loosen lock nuts to move brass tube up or down. If the Indicating Dial or Paper Reflector back of Glass Tube is stained at the bottom, instal a complete new Indicating Unit. When replenishing red fluid USE ONLY HOBSON K-S TELEGAGE LIQUID—NO OTHER WILL DO.
4. **Dry the Air Line.** For correct results follow in exact detail and sequence the following instructions:—
  - (a) Use a good Motor Hand Tyre Pump. (Never use compressed air.)
  - (b) Remove metal clip from Tyre Pump Hose.
  - (c) Push hose securely over front end of Air Line.
  - (d) Give at least 50 full continuous strokes—which may discharge a small amount of petrol from the vent pipe.
5. **Reconnect Air Line, making a tight joint, without jointing material.**
6. **Replace tank filler cap.**

You are now ready to make a test to see if the trouble has been corrected.

### TEST.

Ascertain if you can bring gauge up to proper reading by supplying air to the Tank Unit in the following manner:—

1. If the petrol feed pipe is in the Tank Unit, disconnect the petrol feed line from the top of the vacuum tank or petrol pump and blow with the mouth through this line into the petrol tank.
2. If the petrol feed pipe is not in the Tank Unit, drive the car until the red liquid rises. The tank should not be more than three-fourths full, otherwise a correct check cannot be made.

**NOW**—If, with the car stationary, the reading on the dial remains steady,

**THEN**—The Telegage is correct and the job completed.

**BUT IF**:—You cannot get a reading on the dial of the Indicating Unit by driving or blowing back through the petrol feed line,

**OR**:— You can get a reading, but it will not hold for an hour with the car stationary:

**THEN**:—There is a defective unit to be located by carrying out the following repair instructions:—

Ascertain if the cause of failure is in the Air Line or Tank Unit as follows:—

1. Disconnect the Air Line front and rear.
2. Inspect cones and seats for dirt and flaws.
3. Blow out Air Line (see check 4 above) and test for a leak. Place finger over one end and suck on the other end. If the suction created will hold the tongue for one minute the Air Line is sound.
4. If the Air Line shows a leak, or is blocked, it must be changed.
5. If the Air Line and connections prove correct, the defect is in the Tank Unit, which must be changed.

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