

DRY BATTERY GAUGES NO. 35 AND NO. 36 TESTS AND INSPECTIONS

1. GENERAL

1.01 This section describes the procedure to be followed in determining whether 35 and 36 type gauges are satisfactorily accurate for testing dry cells.

1.02 Defective cords should be replaced with new No. 361 cords before testing the gauges. Gauges failing to meet the requirements should be fitted with new cords and retested. If they again fail to meet the requirements they should be returned for repairs.

1.03 The gauge is a high resistance milliammeter with two windings, one of 5 ohms and the other of 15 ohms, connected in series. Depressing the stem of the gauge short-circuits the 15 ohm winding.

1.04 Tests should be made periodically or at any time that the gauge is suspected of being inaccurate.

2. APPARATUS

Milliammeter - Weston Model 280. 0 to 500 scale or equivalent reading not more than 10 milliamperes per scale division.

Test Battery - Any steady direct current source preferably about 5 volts.

Rheostat - Any variable resistor or group of variable resistors capable of carrying a current of 1/4 ampere and with a sufficient number of steps to permit the making of small changes in the resistance. The total resistance will depend upon the voltage of the test battery.

3. METHOD

3.01 Connect the gauge to be tested in series with the milliammeter and rheostat. Be sure the polarity of the meter coincides with that of the test battery and that all resistance of the rheostat is in circuit. Connect to the test battery.

3.02 Adjust the rheostat to give about one-half scale deflection of the gauge needle and move the gauge cords gently one at a time in various directions. If the motion of a cord causes fluctuation of the needle, the cord is defective and should be replaced before proceeding with the remaining tests.

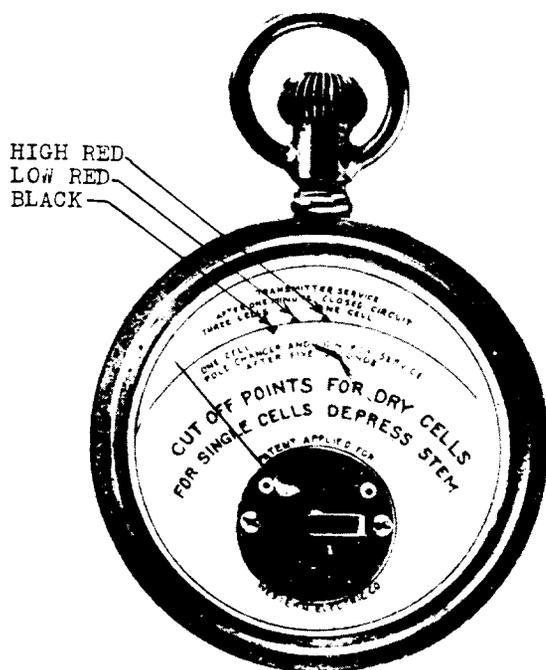


Fig. 1 - 35 Gauge

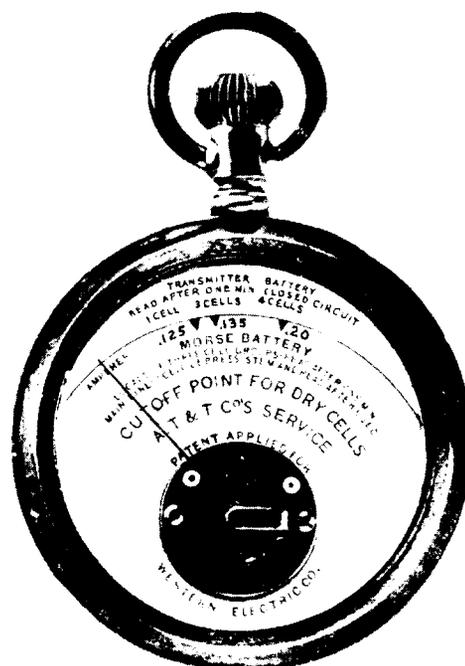


Fig. 2 - 36 Gauge

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3.03 Place the gauge approximately horizontal with the face upward and adjust the rheostat to give the current shown in the column of Initial Currents in table A for the point to be tested. Move the rheostat handle slowly in the direction to reduce current until the gauge needle rests over the point being tested. Read the milliammeter and record the value. Reverse the leads of the gauge and repeat the test. The average of the two milliammeter readings should fall between the maximum and minimum currents given in table A for the point being tested.

3.04 The gauge is always tested with a falling current, starting with an initial value and reducing to the test point. This simulates the action of the gauge in service since when the gauge is first applied to a dry cell the voltage of the cell is higher than after a period of relatively heavy drain such as that caused by applying the gauge. The falling voltage of the cell

causes the current flowing through the gauge to fall in the same ratio.

3.05 The gauge has no polarity markings and is therefore tested with current flowing in both directions since it may be attached to a dry cell in such a way as to cause the current to flow in either direction.

TABLE A.

Scale Mark	Current Milliamperes			Position of Stem
	Initial	Max.	Min.	
No. 35 gauge (General use).				
High red	200	195	155	In
Low "	160	155	125	Out
Black	150	140	110	In
No. 36 gauge (Telegraph and General Use).				
.20	230	220	180	Out
.135	155	150	120	Out
.125	150	140	110	In