

Alternate method of leak location

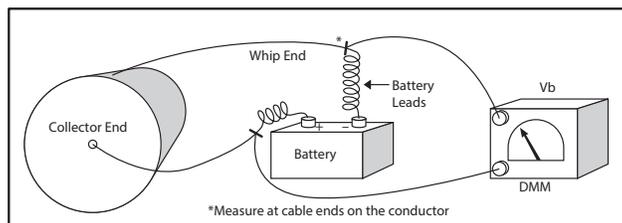
It should be noted that no single method of leak detection is fool-proof. Therefore it is highly recommended that more than one technique be used to provide confidence in the location of the leak.

The method described below is quick, easy and will locate a low resistance leak within +/-50 feet. This is usually close enough for service and repair. To use this method accurately, you will require a digital multi-meter (DMM) with a 4+ digit display and an input impedance of 10 Meg-Ohms or greater. Most quality DMM's meet these requirements but there are some lower quality DMM's with only a 3 digit display and a 1 Meg-Ohm input resistance.

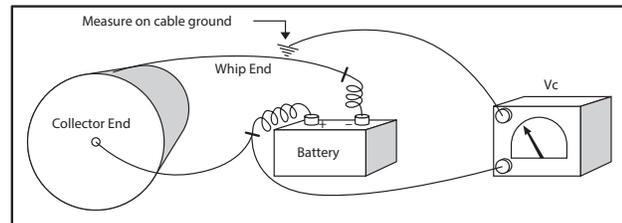
To get started the total length of the cable, L, must be known. (See Tech Bulletin - 001). This method for locating the leak assumes the entire length of cable is on the truck drum.

The procedure is as follows:

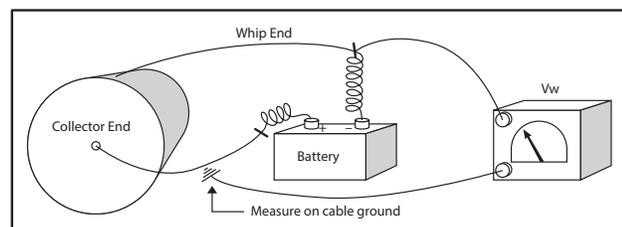
- Disconnect the leaking conductor from the collector and connect a 6 or 12 volt car battery between the conductor at the whip end and collector end.
- Measure the battery voltage, at the cable ends, Vb, not at the battery terminals.



- Measure the voltage between the armor and the conductor at the Collector end, Vc.



- Measure the voltage between armor and the conductor at the whip end, Vw.



If all measurements have been done carefully, and the leak is "stable" the following formulae will validate: $V_c + V_w = V_b$. If this checks out, or is close, then you can have confidence in the procedure.

The location of the leak from the whip end, Lw, is:
 $L_w = L(V_w / V_b)$

Example:

L = 18,000 feet

Vb = 12.635 volts, measured at the cable ends

Vw = 2.456

Vc = 10.179

CHECK: $V_w + V_c = 2.456 + 10.179 = 12.635 = V_b$

$L_w = L(V_w / V_b) = 18,000(2.456 / 12.635) = 3,498$ Ft.

The leak is located +/- 50 feet from 3,498 feet from whip end.