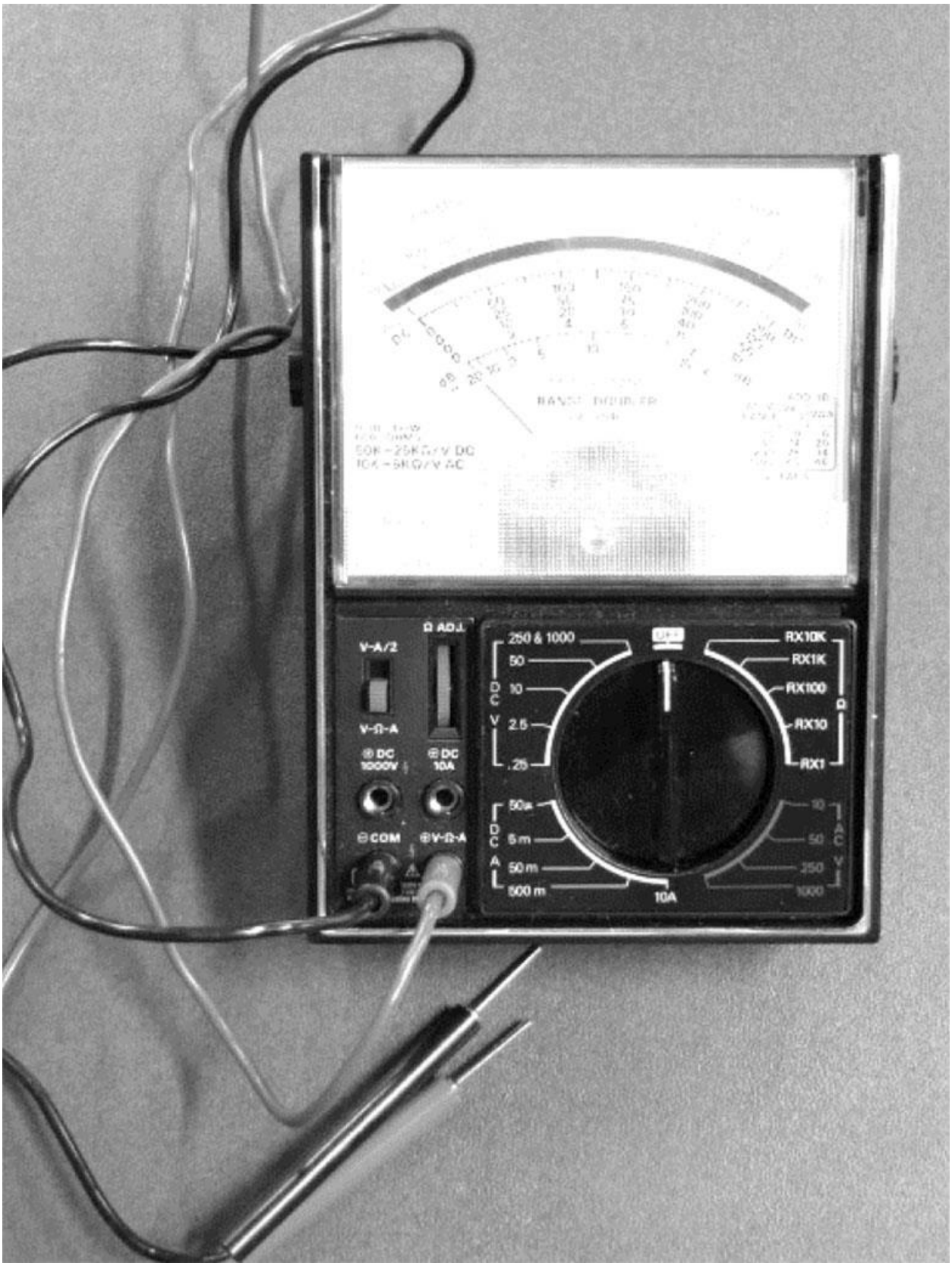
PREVENTING BURNS FROM ELECTROPHYSICAL AGENTS: HOW TO TEST ELECTRODE CONDUCTIVITY

Over the past two years, the College has received an increased number of burn-related complaints from clients. This is a reminder that registrants have a responsibility to adhere to all Practice Standards and particularly, with respect to maintaining, inspecting, and calibrating electrophysical agent devices, Standard: Risk Management and Standard: Safety.
Electrodes should be tested yearly at a minimum, or whenever the carbon rubber electrode no longer appears shiny, to ensure that the conductivity is adequate to permit effective and safe application of electrical current with TENS, NMES, or other electrophysical agents.

How to Test Electrode Conductivity

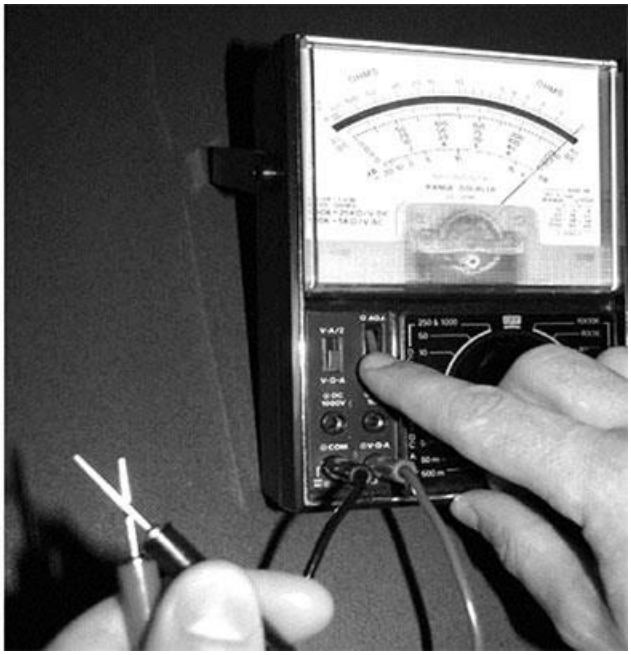
Equipment required: An Ohm meter or a multimeter, analogue or digital; analogue is illustrated below

1. **Set up:** Ohm meter/multimeter probes plugged into correct place
   Ensure that the leads of the meter are correctly connected to the meter – one at the "+/red/Ω" and the other at the "-/com/black" terminal.


Ω ADJ
V-A/2
V-Ω-A
⊕ DC 1000V
⊕ DC 10A
⊖ COM
⊕ V-Ω-A
250 & 1000
50
10
2.5
.25
DC V
50μA
5m
50m
500m
10A
DC A
RX10K
RX1K
RX100
RX10
RX1
Ω
10
50
250
1000
AC V

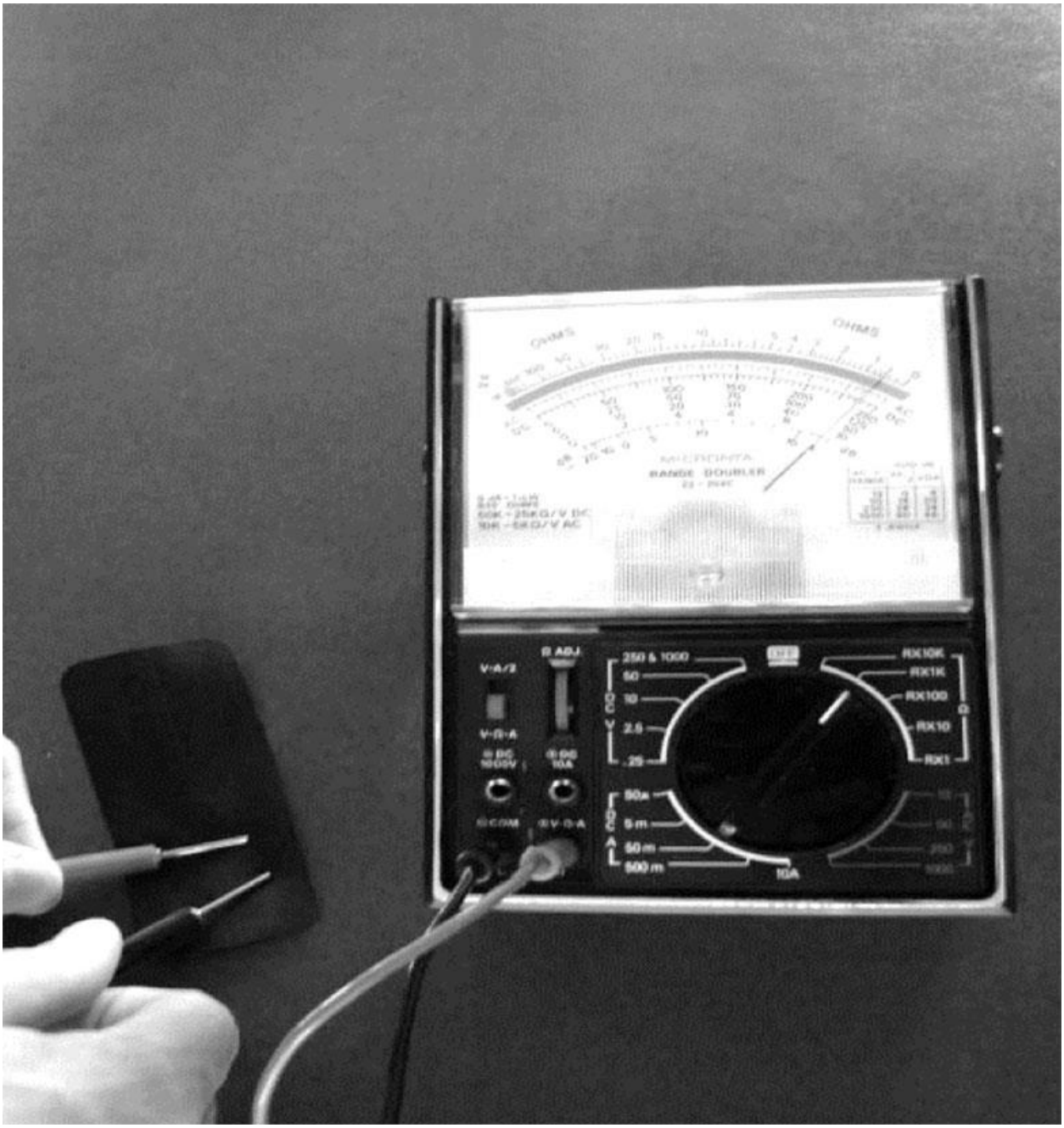
2. Integrity of the meter leads: Ohm check

- Turn the meter dial to the setting marked with the ohm symbol (Ω). Note the different scales available. You'll have to multiply the meter reading by the factor on the scale you choose.
- The meter will display "OL" for overload or open line. Touch the two meter probes together. The display should show close to zero. The number showing on the ohm meter is the resistance of the meter leads and the meter itself. Adjust the meter to "zero" by using the Ω-adjustment knob. If you use a digital multimeter the meter will be zeroed automatically.



3. Test the electrode:

- Test the resistance of an electrode by placing the end of one probe at one point on the electrode and the end of the other probe on another point of the electrode approximately 1 cm away. You should test at least 3 different places on the electrode. If the resistance reads greater than 500 ohms between any two points, the electrode should be discarded.


OHMS
RANGE DOUBLER
Ω ADJ.
V·A/Ω
V·Ω·A
COM
250 & 1000
50
10
2.5
.25
DCV
50µ
5m
50m
500m
DCA
10A
RX10K
RX1K
RX100
RX10
RX1
Ω