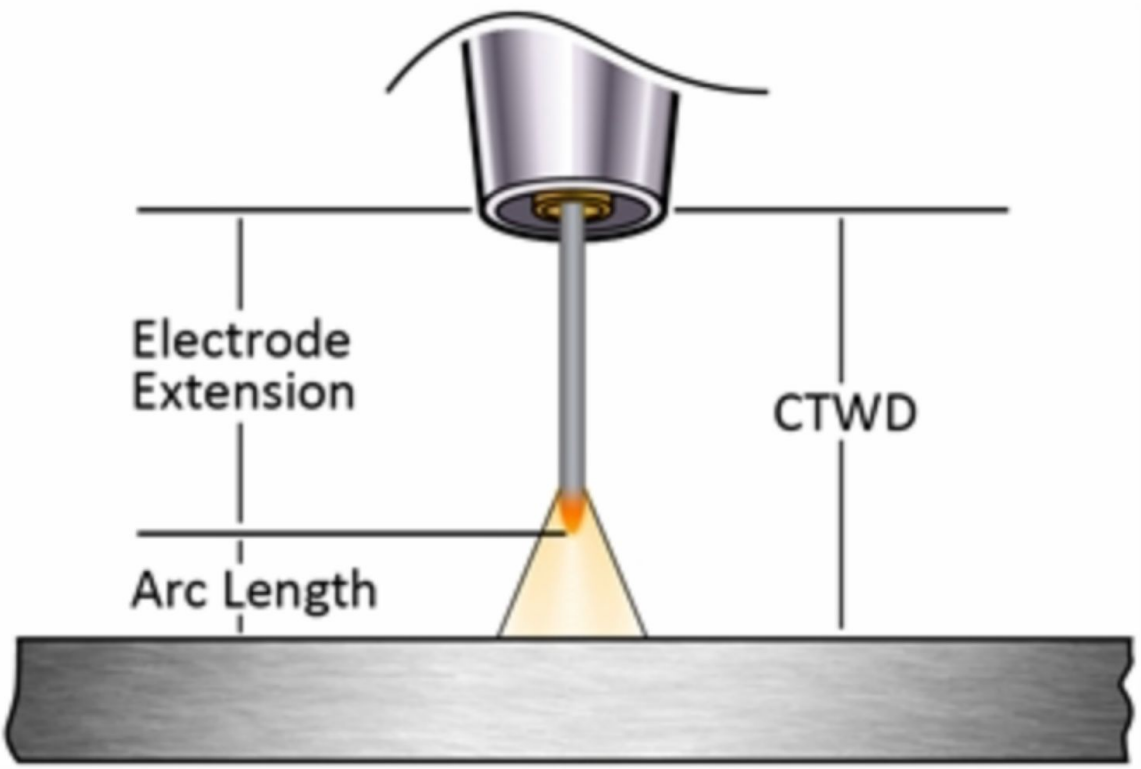
GMAW Additional Topics #4

- **Electrode extension** (stick-out) is the visible distance of the wire electrode from the contact tip of the welding gun to the end of the electrode
- The distance between the end of the electrode and the workpiece is the arc length



- **Contact tip to work distance** (CTWD) includes both electrode extension and arc length
- The constant voltage (CV) power source used in GMAW (mig) attempts to maintain the arc length as the electrode extension or **CTWD** changes

- With CV varying, the length of the electrode extension or **CTWD** changes the amount of electrical **resistance** between the electrode and the workpiece, which in turn affects current and voltage
- The following illustration shows that increasing the arc length increases the resistance to the flow of current, thereby decreasing the current in the arc