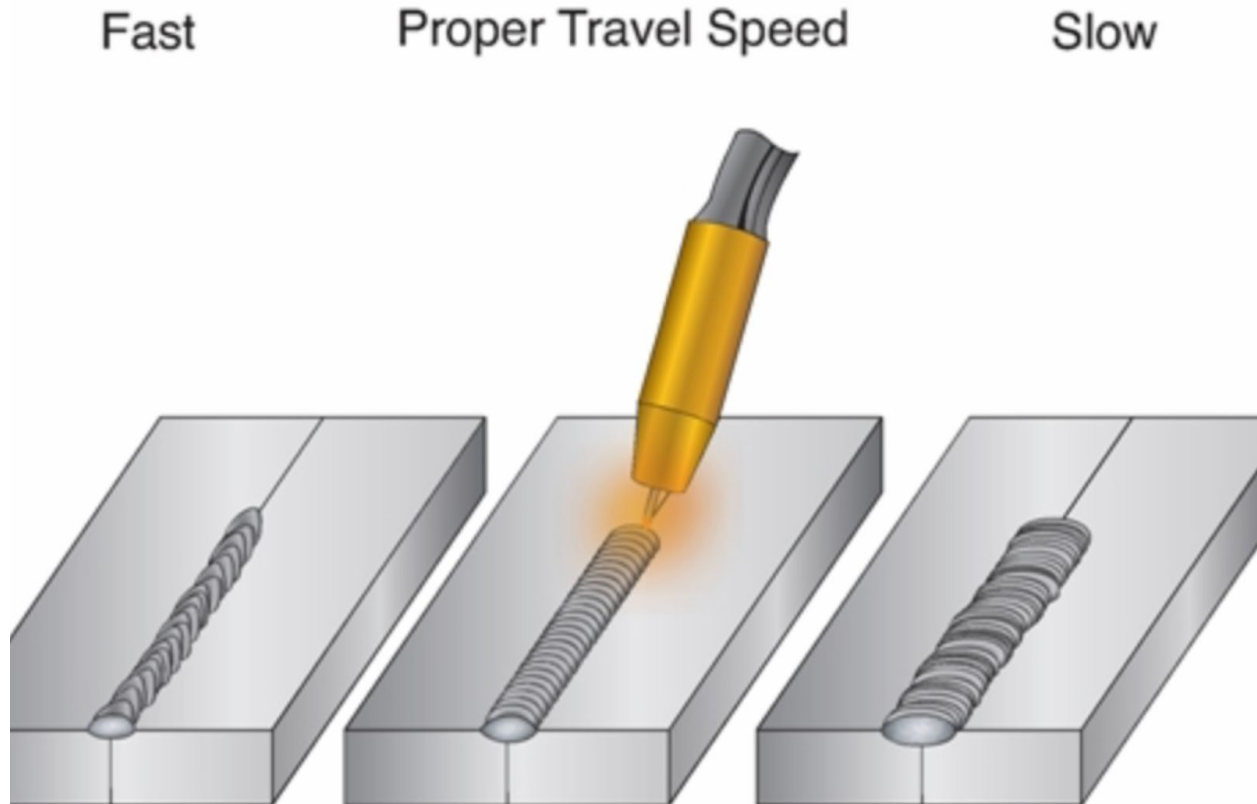


GMAW Additional Topics #2

- Travel speed varies when it becomes necessary to adjust for changing variables to ensure the weld metal (the mig wire) properly fills the joint
- The arc should always be on the leading edge of the weld puddle
- If you move the gun too **quickly**, the joint will not sufficiently fill with weld metal and can also **undercut** the edges of the weld bead
- If you move the gun too slowly, you will create a large weld puddle which may result in a wider bead and decrease penetration



Amperage and Wire Feed Speed (WFS)

- Amperage refers to the amount of current flowing through a circuit

- In **GMAW** (mig) welding, the wire feed speed (the rate at which the electrode is moving through the drive mechanism) determines the amperage
- **WFS** is expressed in inches per minute (IPM) or millimeters per minute (MM/Min)
- Increasing the **IPM** increases the amperage
- **WFS** must be fast enough to deliver wire to the weld as needed
- However, without proper **voltage**, too much wire too quickly may cause the electrode to stub out
- Amperage determines the amount of heat in the arc. Higher amps = higher heat
- Amperage also affects the the welding speed and penetration of the weld
- GMAW typically requires 115-440 amps
- Since GMAW uses “**constant voltage**” (CV) power source, the welder does not set the amperage. instead, the welder sets the voltage and WFS
- WFS and wire diameter determine amperage



- Excessive WFS and amperage can increase the deposition rate, causing excess heat and distortion
- Too little amperage gives an unstable arc with poor weld beads

