

Effects of polarity on penetration and cleaning

With most arc welding processes, DC+ (direct current electrode positive) polarity produces more weld penetration, because more arc energy is focused into the base plate. Conversely, DC- (direct current electrode negative) polarity produces less weld penetration, because more arc energy is focused into the electrode and not into the base plate. Cleaning is important but there is not as much cleaning with high currents as with low currents.

Types of electrodes

1. Pure Tungsten-Color Code: Green
2. 2% Thoriated-Color Code: Red
3. 2% Ceriated-Color Code: Orange
4. Lanthanated-Color Code: Gold
5. Zirconiated-Color Code: Brown
6. Rare-Earth-Color Code: Gray

GTAW

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Effects of gas mixtures

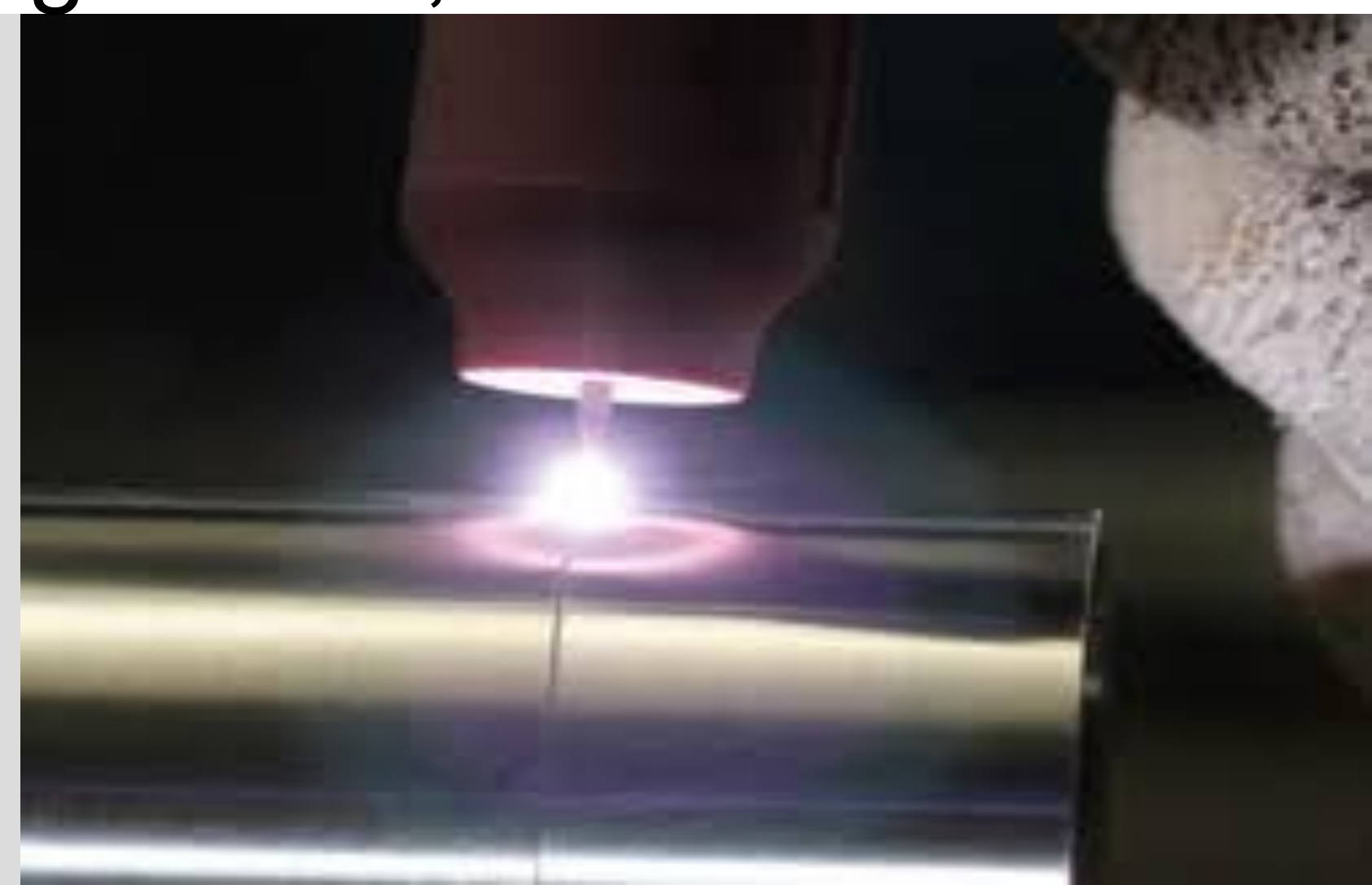
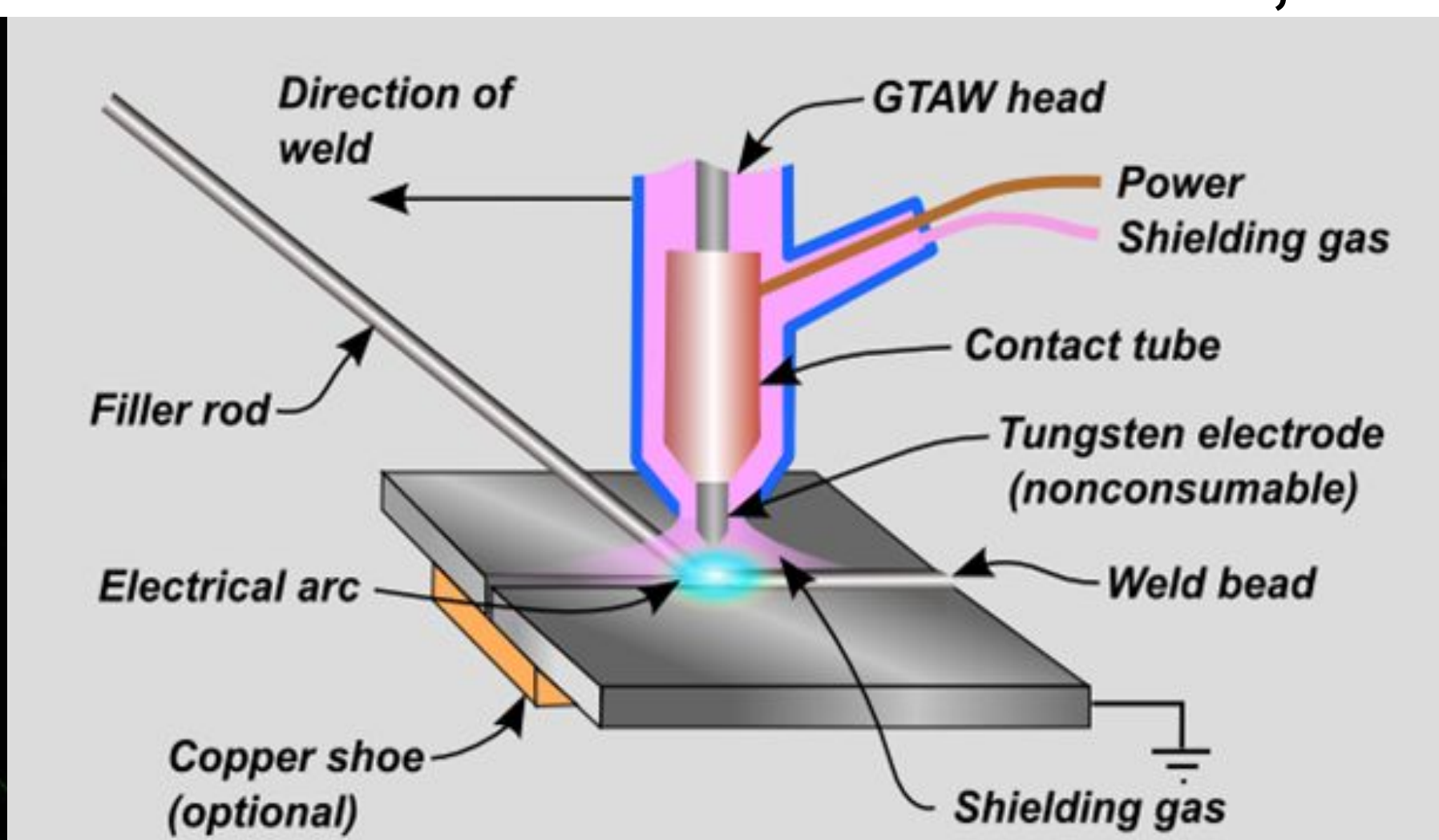
The primary gases used for GTAW are argon, helium, hydrogen, and sometimes nitrogen

Argon- does not react with other compounds or elements.

Helium- Like argon, it does not react with other compounds or elements. and will not sustain life.

Hydrogen- is a very useful addition to argon for GTAW on 300 series austenitic stainless steels and as added in controlled amounts to argon.

Nitrogen- is inert except at arc welding temperatures, where it will react with some metals such as aluminum, magnesium, and titanium.



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