TECHNICAL SIDEBAR

New Mexico Corvette Association

July 26, 2013

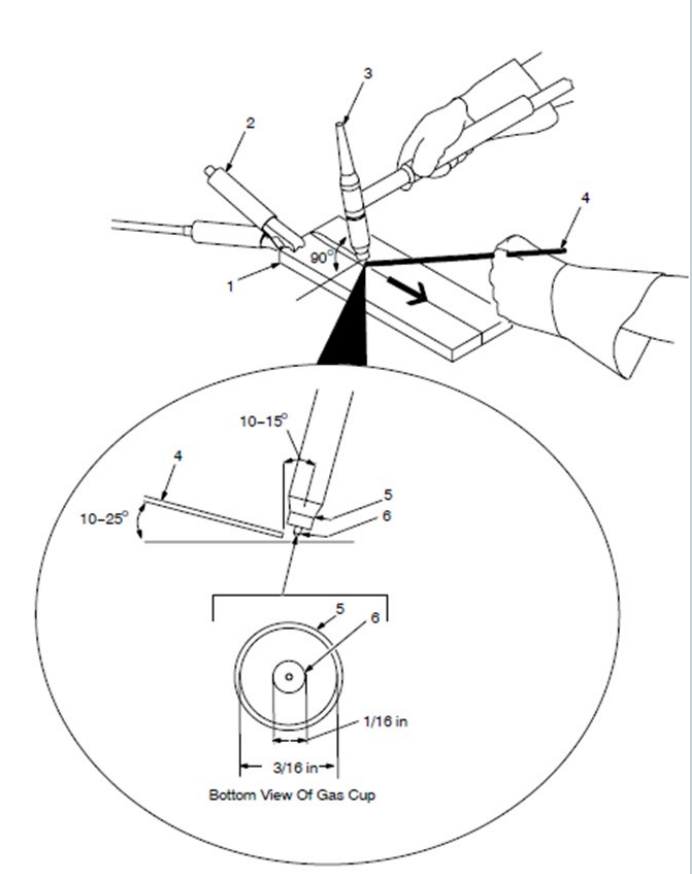
TIG welding basics

Grinding the tungsten electrode produces dust and flying sparks which can cause injury and start fires. Use local exhaust (forced ventilation) at the grinder or wear an approved respirator. Read MSDS for safety information.

Consider using cerium or lanthanum based tungsten instead of thoriated. Thorium dust contains low-level radioactive material. Properly dispose of grinder dust in an environmentally safe way.

Wear proper face, hand, and body protection. Keep flammables away.

- Work piece: Make sure work piece is clean before welding.
- Work Clamp: Place as close to the weld as possible.
- Torch
- Filler Rod (If Applicable)
- Gas Cup
- Tungsten Electrode: Select and prepare tungsten.



Guidelines:

The inside diameter of the gas cup should be at least three times the tungsten diameter to provide adequate shielding gas coverage. (For example, if tungsten is 1/16 in. diameter, gas cup should be a minimum of 3/16 in. diameter.

Tungsten extension is the distance the tungsten extends out gas cup of torch.

The tungsten extension should be no greater than the inside diameter of the gas cup.

Arc length is the distance from the tungsten to the work piece.

New Mexico Corvette Association

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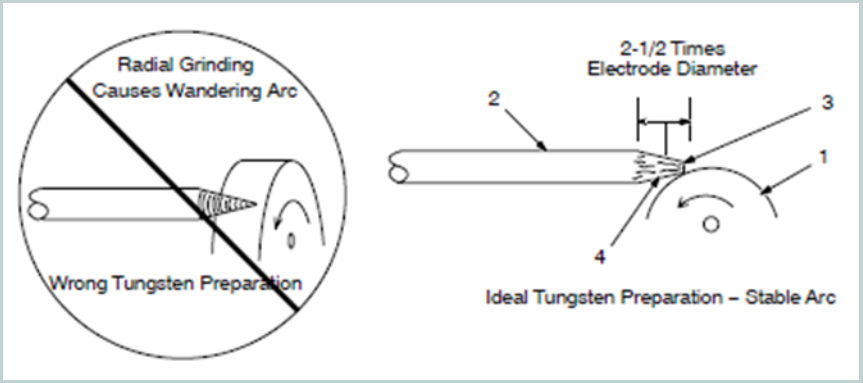
Preparing Tungsten for Welding

Grinding Wheel

Grind end of tungsten on fine grit, hard abrasive wheel before welding. Do not use wheel for other jobs or tungsten can become contaminated causing lower weld quality.



Tungsten Electrode

A 2% ceriated tungsten is recommended.

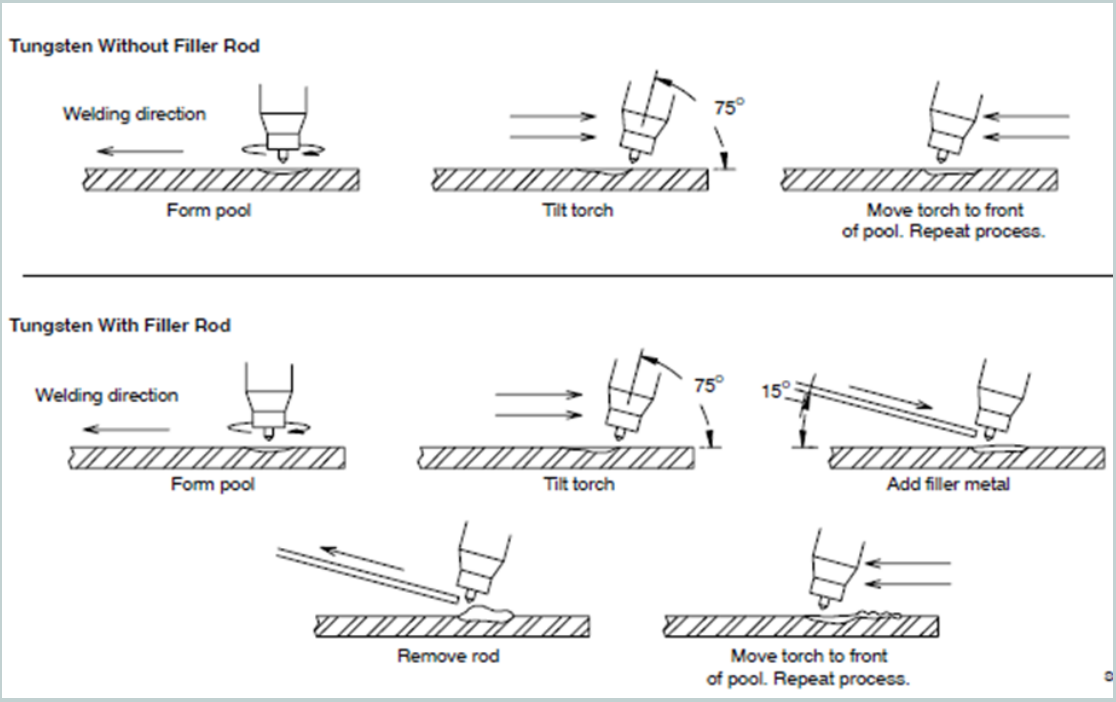
Flat

Diameter of this flat determines amperage capacity.

Straight Ground

Grind lengthwise, not radial

Torch Movement during Welding



From Miller Welding Guidelines