

# Mig Welding Tip Sheet:

Name: \_\_\_\_\_ Block: \_\_\_\_\_ Date: \_\_\_\_\_

## Safety:

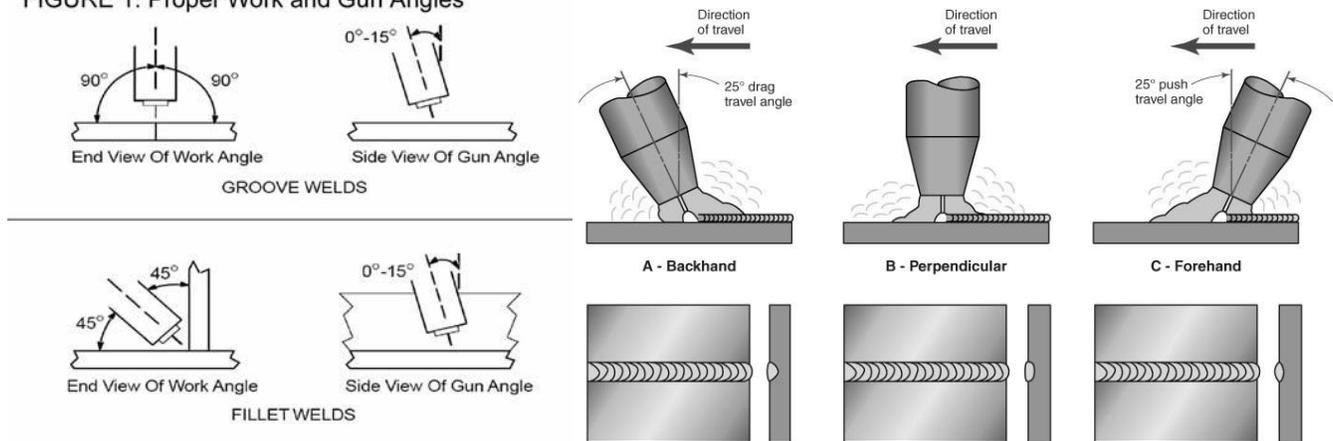
- Double check your welding helmet is set to WELD and the darkness set to between 10-13. Turn your helmet back to grind when finished welding/hanging up on the hooks
- Wear appropriate protective clothing and gloves
- Always have welding pliers to prevent burning through your gloves when moving hot metal and for machine maintenance.
- Check the nozzle for debris and if dirty use the welding pliers to clean it before starting your welds.

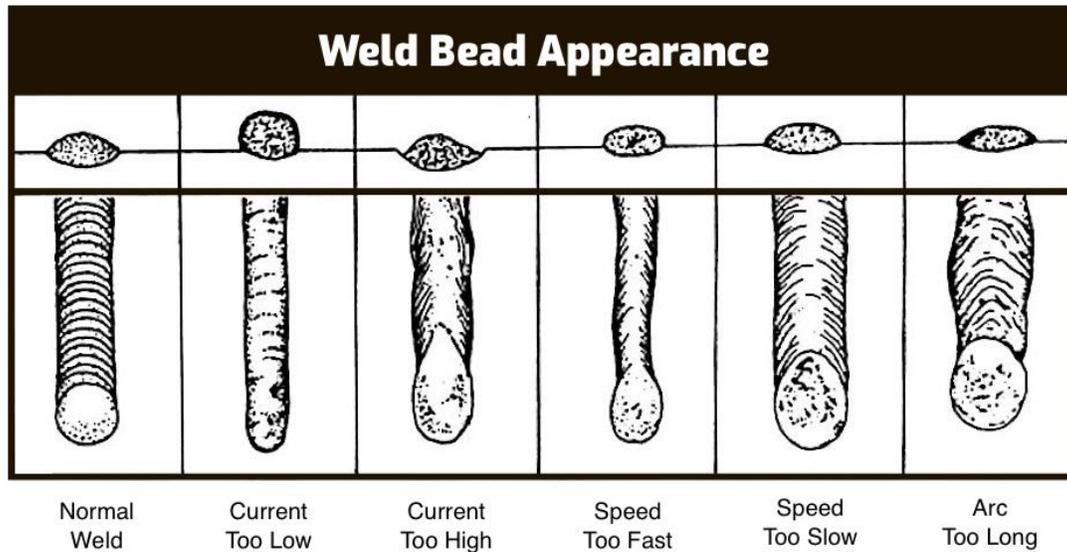
## Machine setup:

- Check that your gas tank is open and regulator is set to between 5-10 LPM. Set it low enough that you can “hear the gas” coming out the nozzle. You are responsible for checking your settings!
- The Voltage and Wire speed settings are based on the thickness of metal you are welding.
- A good starting point is 16.5V and 200 % wire speed with our machine. See the chart below for the manufacturer's recommendations and try them out!

- Wire Type - Gas - Flow Rate	Wire Size Diameter	Machine Settings	Material Thickness									
			3/8" (9.5mm)	5/16" (8mm)	1/4" (6.4mm)	3/16" (4.8mm)	12ga (2.8mm)	14ga (2mm)	16ga (1.6mm)	18ga (1.2mm)	20ga (0.9mm)	22ga (0.8mm)
- 75% AR / 25% CO2	.035" (0.9mm)	Voltage	21	20.5	20	19	18.5	17.5	17	17	16	16
		Wire Speed	310	285	260	225	180	170	150	125	100	80

FIGURE 1: Proper Work and Gun Angles





1. Normal bead: Good penetration into the base, flat profile, appropriate width, and ties in well at the ends.
2. Amps set too low: Narrow, possibly convex bead with poor tie-in at the ends.
3. Amps too high: Poor arc starts, excessively wide bead, burn-through, a lot of spatter, and poor penetration.
4. Traveling too fast: Moving too fast with your arc hand yields a narrow, convex bead, inadequate tie-in at the ends, poor penetration, and inconsistent bead.
5. Traveling too slow: Going too slowly adds too much heat giving a bead that's too wide and poor penetration.
6. Arc too long: Caused by too much voltage. Long, skinny arc, bad penetration, and weld puddle turbulence.
7. No shielding gas: A lack of shielding gas causes porosity and pinholes in the bead.

#### Welding Weave Patterns:

After tack welding each end of your metal your next goal is to create a "bridge" back and forth over the gap of your metals. Start with a zig zag or circular motion and aim to have a pattern that looks like the "normal weld" as shown above.

