

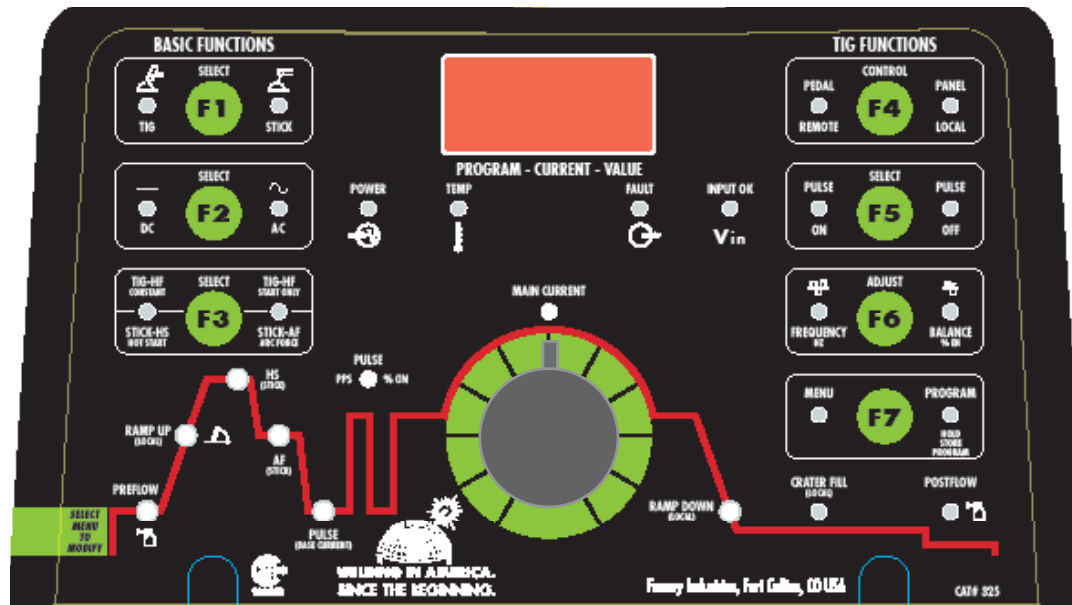
WARNING: To prevent serious injury, read manual warnings and instructions before use.

220 AC-DC TIG QUICK START GUIDE

MAIN DISPLAY
will show the following:

- Current (STICK)
- Program (TIG DC)
- Program (TIG AC)

MAIN DIAL
used to adjust parameter settings



MENU (F7)
used to step through advanced TIG parameters

- MAIN CURRENT
- PREFLOW
- RAMP UP
- PULSE (BASE CURRENT)
- PULSE PPS
- PULSE % ON
- RAMP DOWN (LOCAL)
- CRATER FILL (LOCAL)
- POSTFLOW

PARAMETER DESCRIPTIONS

POLARITY

- DC – Used for Steel and Stainless Steel.
- AC – Used for Aluminum and Magnesium.

HOT START

- Increases amperage when initiating the weld to prevent sticking.

ARC FORCE

- Changes the arc characteristics from soft to hard, which affects penetration and bead profile.

HIGH FREQUENCY (HF)

- Particularly useful for arc starts to reduce tungsten contamination. This feature helps the arc bridge the air gap between the tungsten and the work piece.
- Settings available: Continuous, Start Only, or Off.
- Recommendation: Start only

CONTROL

- Pedal/Remote – Allows a foot pedal to remotely control the amperage. Removes some functionality.
- Panel/Local – Allows the user to program in amperage ramps and crater fill. Use with a trigger torch or with a standard torch. Mostly used when using lift arc techniques. Activates more amperage-related functionality.

PULSE

Pulsing means the output amperage cycles between Base Current and Main Current to provide more heat control. Pulsing affects the bead profile and pattern.

- Base Current – changes the Base Current value. Typically, Base Current is set to half of Main Current.
- PPS (Pulses Per Second) – changes how often amperage switches between Base Current and Main Current per second. A higher PPS setting creates focused puddle and tight ripple bead pattern. A lower PPS creates broader puddle and unique ripple bead pattern.
- % On at Main Current – changes the amount of time the pulse stays on at Main Current. Typically 25-75%.

AC BALANCE

- Normal AC spends 50% of the time in DCEN and 50% in DCEP.
- Adjusting the balance determines how long the polarity stays in DCEN.
- A higher percentage of DCEN (60-80%) creates a tighter arc, less cleaning, and less chance of tungsten balling.
- A lower percentage of DCEN (40-60%) creates a less-focused arc, more cleaning, and will likely create ball on the tip of the tungsten.

AC FREQUENCY

- Normal AC frequency from a wall outlet is 60 Hz, which is the number of times the current switches between DCEN and DCEP in one second.
- A higher frequency (90-240 Hz) focuses the arc.
- A lower frequency (40-90 Hz) softens the arc.
- Typical setting is 50-120 Hz.

PRE-FLOW

- Allows the gas to flow (in seconds) prior to the arc initiation to remove atmosphere from the weld area.

POST-FLOW

- Allows the gas to flow (in seconds) after the arc has stopped and helps cool the puddle and tungsten.

RAMP UP/RAMP DOWN

- Used with Local Control to monitor the amount of time (in seconds) the current goes from Base Current to Main Current and vice versa.

CRATER FILL

- Used with Local Control. Turn ON or OFF. Crater Fill is 25% of Main Current amperage.

MAIN CURRENT

- This machine is designed to work well between 50-200A. For low amperage AC applications, 40-60A, it is recommended to add the pulsing function to stabilize the arc and provide better control. AC TIG welding is not recommended with this machine under 40A.

SAVING PROGRAMS

- There are three steps to saving a program: 1) Hold F7 for 3 seconds and all the LEDs will light up 2) Select the U# you would like to save to 3) Select F7 to save parameter changes made to program (only for U1-U20)

PARAMETER SETUP

TIP: Start in the top-left corner at F1 and continue down and over through F7 to setup weld parameters. Once parameter is selected, use the dial to fine-tune settings. Pressing F7 steps through parameters.

TIG DC SETUP	TIG AC SETUP	STICK SETUP
		 NO ACTION REQUIRED - DEFAULT SETTING IS DC
	*	 HOT START
*		 ARC FORCE
		<

DEFAULT PROGRAMS RECOMMENDED SETTINGS CHART

	DESCRIPTION	RECOMMENDED TUNGSTEN	MATERIAL THICKNESS	MAIN CURRENT	BASE CURRENT	POLARITY	PULSE (PPS)	PULSE	HF	PRE & POST FLOW TIME	FREQUENCY (HZ)	BALANCE (% DCEN)	CONTROL
S1	Steel Sheet	Th, La, Ce	1/16"	70		DC			Start Only	.5/4			Remote (Foot Pedal)
S2	Steel Thin	Th, La, Ce	1/8"	110		DC			Start Only	.5/5			Remote (Foot Pedal)
S3	Steel Thick	Th, La, Ce	1/4"	190		DC			Start Only	.5/6			Remote (Foot Pedal)
S4	Steel Thin (Lift Arc)	Th, La, Ce	1/8"	80		DC			Start Only	.5/4			Panel (Lift Arc)
S5	Steel Lift (Lift Arc)	Th, La, Ce	1/4"	150		DC			Start Only	.5/6			Panel (Lift Arc)
S6	SS Sheet (Pulse)	Th, La, Ce	1/16"	60	30	DC	250	50	Start Only	.5/3			Remote (Foot Pedal)
S7	SS Thin (Pulse)	Th, La, Ce	1/8"	100	50	DC	250	50	Start Only	.5/5			Remote (Foot Pedal)
S8	SS Thick (Pulse)	Th, La, Ce	1/4"	180	90	DC	250	50	Start Only	.5/7			Remote (Foot Pedal)
S9	SS Lift Arc Thin (Pulse)	Th, La, Ce	1/8"	100	50	DC	250	50	Start Only	.5/5			Panel (Lift Arc)
S10	SS Lift Arc Thick (Pulse)	Th, La, Ce	1/4"	180	90	DC	250	50	Start Only	.5/7			Panel (Lift Arc)
A1	Aluminum Sheet	La, Ce, P	1/16"	80		AC			Continuous	1.0/4	90	65	Remote (Foot Pedal)
A2	Aluminum Thin	La, Ce, P	1/8"	120		AC			Continuous	1.0/5	90	65	Remote (Foot Pedal)
A3	Aluminum Thick	La, Ce, P	1/4"	200		AC			Continuous	1.0/8	90	65	Remote (Foot Pedal)
A4	Aluminum Thin (Pulse)	La, Ce, P	1/8"	120	30	AC	1	50	Continuous	1.0/6	90	65	Remote (Foot Pedal)
A5	Aluminum Thick (Pulse)	La, Ce, P	1/4"	200	50	AC	1	50	Continuous	1.0/8	90	65	Remote (Foot Pedal)
A6	Aluminum (Better Penetration)	La, Ce, P	3/16"	150		AC			Continuous	1.0/7	90	75	Remote (Foot Pedal)
A7	Aluminum (Better Cleaning)	La, Ce, P	3/16"	150		AC			Continuous	1.0/7	90	50	Remote (Foot Pedal)
A8	Aluminum (Tight Arc)	La, Ce, P	3/16"	150		AC			Continuous	1.0/7	240	75	Remote (Foot Pedal)
A9	Aluminum (Broad Arc)	La, Ce, P	3/16"	150		AC			Continuous	1.0/7	60	45	Remote (Foot Pedal)
A10	Aluminum (Lift Arc)	La, Ce, P	3/16"	150		AC			Continuous	1.0/7	90	65	Panel (Lift Arc)

GENERAL RECOMMENDATIONS

RECOMMENDED DEFAULT PROGRAMS

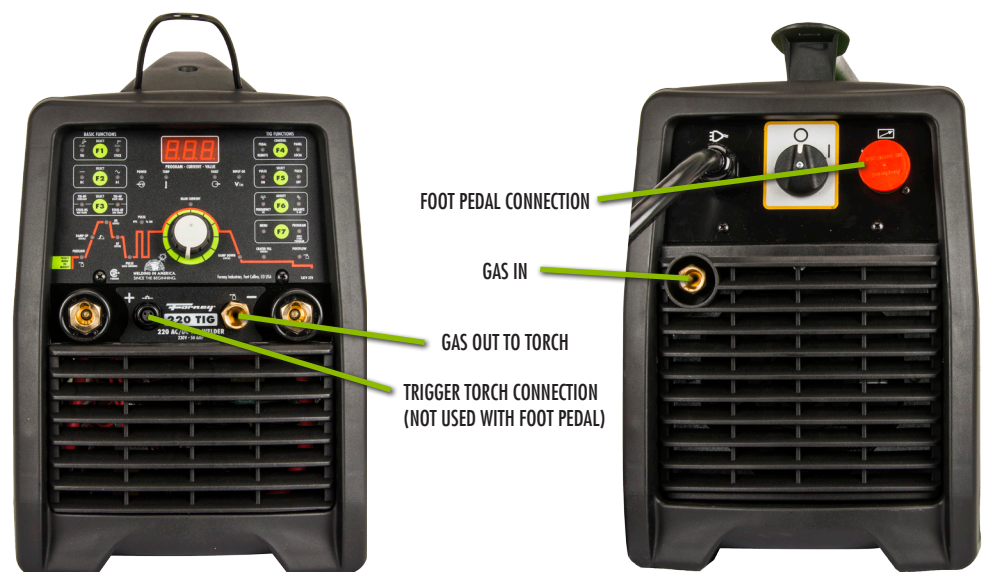
- Steel – Use S2
- Stainless Steel – Use S7
- Aluminum – Use A2

RECOMMENDED TUNGSTEN TYPE

- 2% Lanthanated
- 3/32" diameter

RECOMMENDED ACCESSORIES

- Foot pedal
- Use Type 17 or 26 TIG torch



WARNING: To prevent fire and serious injury: Keep torch and wire clear of grounded objects while welder is plugged in. Be sure to follow safe welding procedures and wear proper PPE (clothes, welding helmet, safety glasses, welding gloves, boots, etc.)