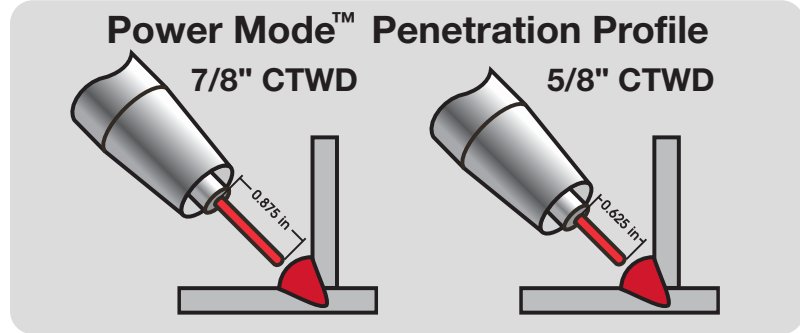


# Power Mode™ Aluminum Welding Process

**Power Mode™** – For Superior Quality Aluminum Welding.

- **More constant weld penetration.**
- **Fewer fusion defects in welds.**
- **Provides stable arc performance and less current fluctuation.**



A patented process, Power Mode™ uses energy ( $V \times I = W$ ) to regulate the arc length.

Power Mode™ is a process that adjusts the output current in accordance with the difference between the commanded preset power and the actual power. Power Mode™ provides better current stability than CV with spray transfer mode and aluminum welding.

The power supply responds to changes in voltage sensed at the welding arc. However, unlike a Constant Voltage weld process, the Power Mode will respond with less change in current than a Constant Voltage program.

Instead of controlling output voltage, Power Mode controls output power (voltage X current) when there is an arc.

Constant voltage (CV) output characteristic has a slightly negative slope. In comparison with CV output characteristic, same arc length fluctuation will result in smaller current adjustment in CC or Power Mode, which will correspond to less effect on penetration.

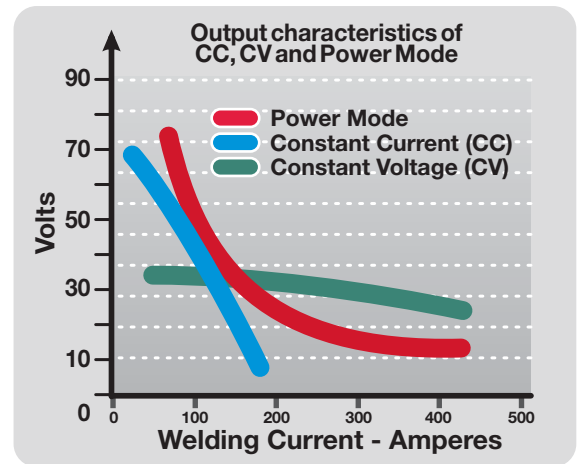
Power Mode aids in the control of the arc's response to variations in stickout. A change in stickout forces a current adjustment so that output power remains constant.

## FEATURES

	PLATE THICKNESS	
	<b>Power Mode™</b>	
	CURRENT FLUCTUATION	
	<b>Power Mode™</b>	
	TRAVEL SPEED	
	<b>Power Mode™</b>	
	WELD APPEARANCE	
	<b>Power Mode™</b>	

## Power Mode™ vs. Constant Voltage (CV)

Power Mode™ gives improved penetration profiles compared to Constant Voltage (CV). It does this by regulating Arc Power Instead of Arc Voltage. This means that, due to the shape of the V-A curve, when the current needs to change to maintain the desired arc length, the changes are faster but smaller in amplitude, which results in more uniform Current and Penetration.

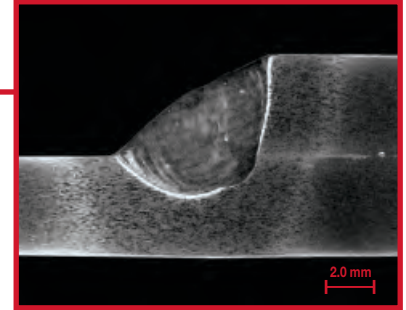
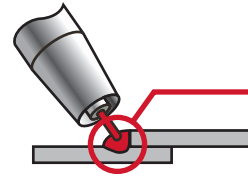
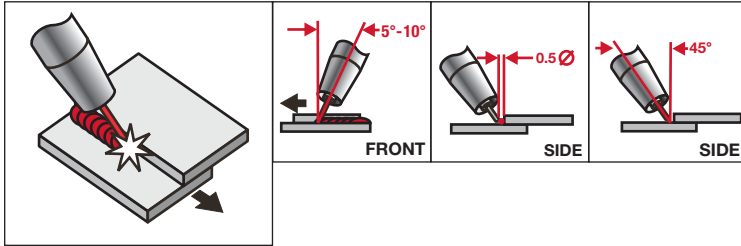


**LINCOLN**  
**ELECTRIC**

The Performance You Need.  
The Quality You Expect.™

# Applications

## 1F / 2F Lap & Fillet – Semi-Automatic & Automatic



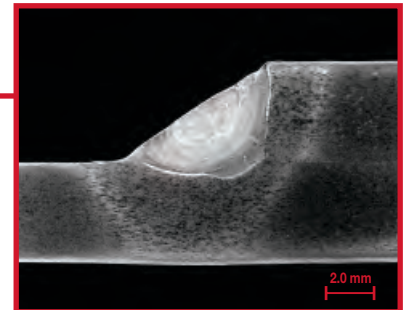
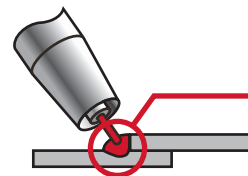
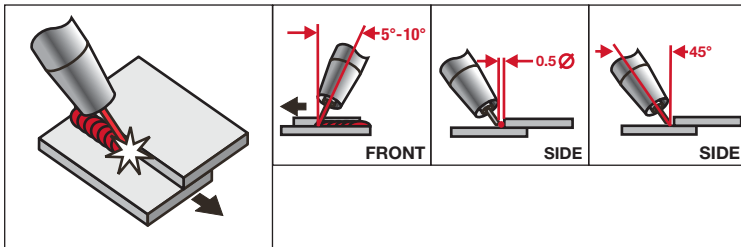
\* Setting used for macro image.

Power Mode on the Power Wave i400® and Power Feed SA™



* 4043 Wire 3/64 in (1.2 mm)	100% Ar	in (mm)	in (mm)	in/min	in/min	Power	Approx.	Approx.
		1/2 (12.7)	3/16 (4.8)	325	25	4.75	23.5	202

## 1F / 2F Lap & Fillet – Semi-Automatic & Automatic



\* Setting used for macro image.

Power Mode on the Power Wave i400® and Power Feed SA™



* 5356 Wire 3/64 in (1.2 mm)	100% Ar	in (mm)	in (mm)	in/min	in/min	Power	Approx.	Approx.
		1/2 (12.7)	3/16 (4.8)	400	25	4	22.3	180

\*See the Power Mode™ Aluminum Welding Process Guide for: technical data, proper set-up, application settings and troubleshooting.

## Recommended Equipment

### Power Source

POWER MIG® 350 MP,  
Power Wave® C300, S350,  
i400 & S500  
INVERTEC® V350-PRO

### Wire Feeder

Power Feed® 84 or 25M

### Accessories

SUPERGLAZE® 4043 TM™  
SUPERGLAZE® 5356 TM™

### Customer Assistance Policy

The business of The Lincoln Electric Company is manufacturing and selling high quality welding equipment, consumables, and cutting equipment. Our challenge is to meet the needs of our customer and to exceed their expectations. On occasion, purchasers may ask Lincoln Electric for advice or information about their use of our products. We respond to our customers based on the best information in our possession at that time. Lincoln Electric is not in a position to warrant or guarantee such advice, and assumes no liability, with respect to such information or advice. We expressly disclaim any warranty of any kind, including any warranty of fitness for any customer's particular purpose, with respect to such information or advice. As a matter of practical consideration, we also cannot assume any responsibility for updating or correcting any such information or advice once it has been given, nor does the provision of information or advice create, expand or alter any warranty with respect to the sale of our products.

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