

Square Wave[®] 205

AC/DC TIG & STICK WELDER



LINCOLN[®]
ELECTRIC



The Power of Precision and Simplicity

Discover a new wave of TIG innovation with the Square Wave 205 AC/DC TIG welder. With a user-driven design, enhanced digital interface, and outstanding arc performance, this machine allows you to tackle your next project with confidence and ease.

Whether you're a hobbyist or a full-blown fabricator, this compact machine delivers the perfect combination of machine control and welding capabilities to handle whatever comes your way.



Easy to Use. Period.

Designed for all skill-levels, the Square Wave 205 digital interface allows for simple machine control. From effortless navigation to get you welding in seconds, to advanced control to dial in precise parameters - this welder has it all.

Designed with Purpose

Lightweight, compact, rugged, reliable - the Square Wave 205 design covers it all. Weighing only 36 lbs. this field-tested machine was engineered for easy use wherever you need it.

Precise Performance. Professional Results.

Packed with the trusted Lincoln Electric arc performance you can rely on, the Square Wave 205 cuts no corners when it comes to helping you make great welds. With AC TIG for Aluminum, pulsed DC TIG for steel, and dedicated E7018 & E6010 Stick - this machine has you covered.

Trusted Expertise & Support

Purchase with the peace-of-mind that your machine is backed by over a century of trusted engineering and welding expertise, with a worldwide network of distribution partners and service centers that are here to help.

Processes »

AC/DC TIG, AC/DC Stick

Applications »

Home, Hobby, Shop, Light Fabrication, Hobby Aviation, Motorsports, Makers, Education

Output »



Input »



Product Number »

• K5613-1

Easy to Use. Period.

Next-Gen Display

The Square Wave 205 was engineered and tested to make machine interaction as simple as possible.

Key Features include:

- Bright, 4.3 in. high-resolution LCD display
- Anti-glare and large, easy-to-read text

Simplicity Without Compromise

Designed with the operator in mind, the interface on the Square Wave 205 delivers straightforward, yet precise machine control - making the set up of your machine easy, no matter the skill set.

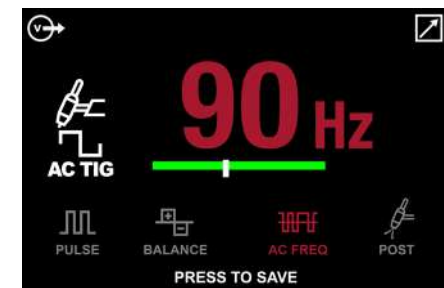
- Straightforward navigation allows welders to quickly find and make parameter changes
- Simple, visual process set up
- Multilingual display settings - including English, Spanish, and French



Square Wave® Navigation Home Screen



Square Wave® Language Select Screen



Square Wave® Parameter Selection Screen

Precise Performance. Professional Results.

Optimal TIG Performance

Engineered to deliver optimal AC & DC TIG performance across various materials and applications, with advanced features including:

- Precise Pulse Control - Fine-tune pulse settings to optimize bead appearance and heat input
- Precise Post Flow Control - Fine-tune post flow settings to help protect the weld pool
- Auto Modes - Automatically configures AC balance and post flow based on amperage

Aluminum Welding - We Got You Covered

With its optimized AC TIG capabilities, the Square Wave 205 is the perfect machine to tackle your Aluminum welding projects with precision and ease.

- AC Frequency Control to dial-in the ideal bead width
- AC Balance for enhanced cleaning and optimized penetration on thicker materials

Versatile Stick Capabilities

In addition to TIG, the Square Wave 205 also delivers AC/DC Stick capabilities.

- Excellent E6010 and E7018 performance for a wide range of applications - including capabilities to use whip technique for E6010
- Optimized modes for Soft or Crisp stick welding



Designed With Purpose

Designed With Purpose

Whether in the fab shop, or in the garage, the Square Wave 205 was designed to withstand a wide range of environments and conditions

- IP21S rating for trusted durability
- Dynamic Cooling - Fan automatically adjusts when welding or when idle

Take it Everywhere, Plug in Anywhere™

The Square wave 205 was engineered for portability and convenience, with design features including:

- Dual Voltage Input - Easily plug in to 120V or 230V power supply
- Lightweight & Portable - Only 36lbs. with ergonomic front handles and integrated storage compartment

Trusted Expertise & Support

Welding Experts

High-quality products and great customer service are important aspects of the Lincoln Electric story, but it's our unmatched welding expertise, from the fabrication line to the garage, that truly sets us apart. If there's a better way for you to weld, we'll help you find it.

Global Support

With a worldwide network of distributor and sales offices reaching over 160 countries, as well as 36 global technical application facilities, Lincoln Electric can provide trusted global support you can count on.

Trusted Protection

Purchase with peace-of-mind. The Square Wave 205 comes backed with a hassle-free, 3-year warranty on parts & labor.







Controls »

1. LCD Display
2. Process Indicator
3. Process Options
4. Process Selection Button
5. Scroll/Select Knob
6. Positive Output Receptacle
7. Negative Output Receptacle
8. Amperage Indicator
9. Back Button
10. 6-pin Remote Receptacle
11. On/Off Switch
12. Gas Inlet
13. Thermal Breaker



ACCESSORIES	• Optional • Included	Product Number	Square Wave® 205 Base Unit [K5613-1]
GENERAL			
Caliber® 17 Series TIG Torch		K5339-17F-1	•
Caliber 17/18/26 TIG Torch Parts Kit - TIG torch expendables kit for .040" - 3/32" tungsten diameters. Includes: back caps, collets, gas lenses, alumina gas cups, insulators, and tungsten electrodes.		KP4760-MD	•
Foot Amptrol™ – with 25 ft. (7.6 m) cable assembly		K870	•
Gas Regulator/Flowmeter and 10 ft. (3 m) Gas Hose Kit		3000369	•
200A Stick Electrode Holder – with cable and Twist-Mate™ adapter			•
Ground Clamp and Cable – with Twist-Mate adapter			•
Utility Cart – Accommodates power source, gas cylinder, tools and welding accessories. Includes: adjustable handle, front casters, and rear wheels. 30 (min.)/34 (max.) x 18 x 35 inches.		K520-1	•
Hand Amptrol™ (Rotary Track Style) – Provides 25 ft. (7.6 m) of remote current control for TIG welding.		K963-3	•
Canvas Cover		K2377-1	•
TIG			
PTA-9 TIG Torch – 125 amp air-cooled torch with 12.5 ft. (3.5 m) one piece cable assembly		K1781-1	•
PTA-17F TIG Torch – 150 amp air-cooled torch with Flex Head and Ultra-Flex 12.5 ft. (3.5 m) one piece cable assembly		K1782-15	•
PTA-26 TIG Torch – 200 amp air-cooled torch with 12.5 ft. (3.5 m) one piece cable assembly		K1783-1	•
Additional TIG Torches – See Pro-Torch™ TIG torch literature E12.150 for full line of products			•
Twist-Mate Adapter – Use to connect PTA-9, 125 amp and PTA-17, 150 amp air-cooled TIG torches with one piece cable assemblies		K1622-1	•
Twist-Mate Adapter – Use to connect PTA-26, 200 amp air-cooled TIG torch with one piece cable assembly		K1622-3	•
Parts Kit for PTA-9 Series TIG Torches – Contains a long back cap, 0.040 in., 1/16 in. collets, collet bodies and tungsten, and three Alumina nozzles (1/4 in., 5/16 in., 3/8 in. orifices)		KP507	•
Parts Kit for PTA-17 Series TIG Torches – Contains a short back cap, 0.040 in., 1/16 in., 3/32 in. collets, collet bodies and tungsten, and three Alumina nozzles (1/4 in., 5/16 in., 3/8 in. orifices)		KP508	•
Parts Kit for PTA-26 and PTA-18 Series TIG Torches – Contains a long back cap, 1/16 in., 3/32 in., 1/8 in., collets, collet bodies and tungsten, and three Alumina nozzles (5/16 in., 3/8 in., 1/2 in. orifices)		KP509	•
Cut Length Consumables – See publication C1.10			•

• Included
• Optional

SPECIFICATIONS

Product Name	Product Number	Input Power: Voltage/Phase/Hertz	Rated Output: Current/Duty Cycle	Effective Current @ Rated Output	Output Range	H x W x D in (mm)	Net Weight lbs (kg)
Square Wave® 205	K5613-1	120/1/60	TIG: 125A/25% * TIG: 100A/60% TIG: 85A/100% DC Stick: 80A/25% DC Stick: 70A/60% DC Stick: 65A/100% AC Stick: 70A/100%	12.1A	TIG: 8-125A DC Stick: 15-90A AC Stick: 15-70A	14.75 x 9.27 x 21.01 (375 X 235 X 534)	36 (16.3)
		230/1/60	TIG: 205A/25% TIG: 160A/60% TIG: 130A/100% DC Stick: 170A/25% DC Stick: 130A/60% DC Stick: 100A/100% AC Stick: 140A/25% AC Stick: 115A/60% AC Stick: 100A/100%	11.7A	TIG: 10-205A DC Stick: 15-170A AC Stick: 15-140A		

* AC TIG: 110A/25%

ADVANCED FEATURES

Setting	Range	Results	
AC Frequency	50-160 (Hz)	A lower frequency results in a wider bead	A higher frequency results in a more focused bead
AC Balance	60-90 (%Electrode Negative)	A lower AC Balance (%EN) results in an arc with increased cleaning action	A higher AC Balance (%EN) results in an arc with higher penetration
Pulse	0.1-20 (Pulses per second)	Lower pulse frequency helps moderate filler metal deposition	A higher pulse frequency helps manage heat input and minimize material distortion

CUSTOMER ASSISTANCE POLICY

The business of Lincoln Electric is manufacturing and selling high quality welding equipment, automated welding systems, consumables, cutting equipment and EV charging systems. Our challenge is to meet the needs of our customers, who are experts in their fields, and to exceed their expectations. On occasion, purchasers may ask Lincoln Electric for information or technical information about their use of our products. Our employees respond to inquiries to the best of their ability based on information and specifications provided to them by the customers and the knowledge they may have concerning the application. Our employees, however, are not in a position to verify the information provided or to evaluate the engineering requirements for the particular weldment, or to provide engineering advice in relation to a specific situation or application. Accordingly, Lincoln Electric does not warrant or guarantee or assume any liability with respect to such information or communications. Moreover, the provision of such information or technical information does not create, expand, or alter any warranty on our products. Any express or implied warranty that might arise from the information or technical information, including any implied warranty of merchantability or any warranty of fitness for any customers' particular purpose or any other equivalent or similar warranty is specifically disclaimed.

Lincoln Electric is a responsive manufacturer, but the definition of specifications, and the selection and use of specific products sold by Lincoln Electric is solely within the control of, and remains the sole responsibility of the customer. Many variables beyond the control of Lincoln Electric affect the results obtained in applying these types of fabrication methods and service requirements.

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