

NEW! Power Wave® 355

Intelligent Welding Systems

The Power Wave 355/Power Feed™z 10 welding system is factory programmed with over 60 standard welding programs to optimize the arc for a variety of materials or applications, including steel, stainless steel, aluminum, nickel alloys and others. Simply select a program and you have the right arc characteristics for your application. The software is upgradable, so your Power Wave 355 will grow with your business. If you want to reduce costs by buying a versatile machine that will do multiple jobs and last for years to come, the high efficiency Power Wave 355 delivers.



Processes

Stick TIG MIG Synergic MIG Pulsed MIG
Flux-Cored Gouging

Advantage Lincoln

- If you like the Power Wave 455, you'll love the Power Wave 355. The Power Wave 355 is the smaller, lighter version of the Power Wave 455 – same machine, just leaner and lighter.
- Lincoln's Waveform Control Technology™ gives you the ability to select the right waveshape for each application – that means the arc has been optimized for each wire type and size for exceptionally smooth arc performance.
- Controls at the wire feeder, rather than at the power source, make it easy to select all welding parameters close to your work.
- New Power Mode™ maintains a stable, smooth arc for short arc welding on thin materials.
- New Pulse-On-Pulse™ Welding Mode improves cleaning action when welding aluminum and delivers a TIG-like appearance to the weld bead.
- Tighter control of welding process variables, ease of equipment use with a high degree of process versatility, and improved weld consistency are just a few of the benefits of Waveform Control Technology™.
- Digital communication between components allows unprecedented waveform control and expansion capability.
- Three year Lincoln warranty on parts and labor.
- Manufactured under a quality system certified to ISO 9001 requirements.

Description



Unit Includes

- 2/0 welding cable (10 ft.) to be connected to the wire feeder with a Twist-Mate on one end and a lug on the other.
- Two male Twist-Mate™ cable plugs (K852-70).
- Input power cable (10 ft.).

Recommended Wire Feeders

Power Feed 10 or Power Feed 10 Dual Wire Feeders (A wire feeder is required to run any of the processes listed above.), Magnum MIG Guns, Magnum Flux-Cored Guns, Work & Wire Feeder Power Cables Package

Recommended Options

Adjustable Gas Regulator, Inverter and Wire Feeder Cart, Dual Cylinder Kit, Valet Style Undercarriage, Twist-Mate™ Cable Plugs, Twist-Mate™ Cable Receptacles, Twist-Mate™ to Lug Adapter, Sense Lead Kit, Wave Designer Software, Wave Designer Pro Software

Recommended Stick Options

Accessory Kit

Recommended TIG Options

Pro-Torch™ TIG Torches with gas valve, Twist-Mate™ Torch Adapter

Order

- K2152-1 Power Wave® 355 200/208-230/380-400/
415-460/575/1/3/50/60
- K2172-1 Power Wave 355 200/208-230/380-400/
415-460/575/1/3/50/60
(Ready-Pak™)

Technical Specifications

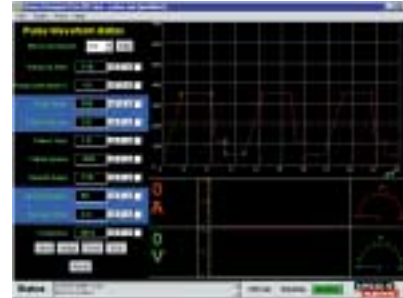
Product Name	Product Number	Input Power	Rated Output Current/Voltage/ Duty Cycle	Input Current @ Rated Output	Output Range	Dimensions H x W x D in. (mm)	Net Weight lbs. (kg)
Power Wave 355	K2152-1	3 ph: 200/208-230/380-400/ 415-460/575/3/50/60	350A/34/60% (300A/32/100%)	3 ph: 50/50-42/28-27/26-23/18A	5-425A	14.8 x 13.3 x 27.9 (376 x 338 x 709)	81.5 (37)
		1 ph: 208-230/415-460/575/ 1/50/60	350A/34/60% (300A/32/100%)	1 ph: 94-85/64-42/37A	5-425A		

Ease of Use

- Select a weld program that fits your application – chose from over 60 standard welding programs to obtain optimal appearance, penetration, bead shape and travel speed.
- A single control cable between power source and wire feeder keep things simple.
- Control cables can be extended – not replaced – as your shop layout expands.
- Take advantage of the Power Wave's digitally based system component communication to set up your workstation the way you want – with no loss of control.
- Add, customize or replace Lincoln updated welding waveforms for every application using a laptop and Lincoln's drag 'n drop Wave Designer software.



Pulse-On-Pulse™ Welding Mode



Waveform Control using Wave Designer Software

Arc Performance

- Over 60 standard welding waveform programs offer a broad range of electrode size, type and shielding gas combinations to give you optimal appearance, penetration, beadshape and travel speed for each application.
- Program your own pulse waveform to create arc characteristics, beadshape, penetration and travel speed specifically for your exact application.
- Power Feed 10 wire feeder features adjustable run-in, crater and burnback that provide full operator control over start and stop characteristics.
- In addition to MIG, Synergic MIG, Synergic Pulsed MIG and flux-cored welding, the Power Wave 355 is capable of stick, Touch-Start™ TIG, Power Mode™, Pulse-On-Pulse™ and arc gouging.

What is a Waveform?

A waveform is a representation of the dynamic, ever-changing output response of an arc welding machine to the actions of the electric arc. Every arc welding machine has a waveform characteristic. Through the use of computer software and advanced electronic control, Waveform Control Technology™ manages all aspects of the waveform to produce dynamic output characteristics tailored to the needs of a specific application.

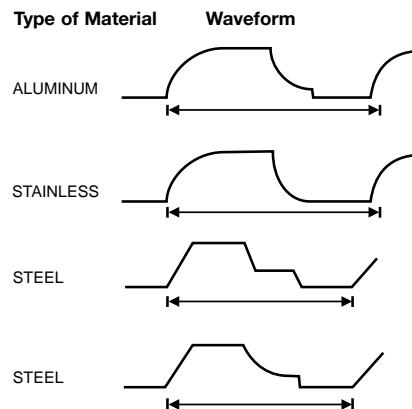


Fig. 4 - Typical Welding Waveforms

Synergic MIG - One Knob Control for Easy Set-Up and Adjustments

Synergic MIG takes the guesswork out of setting the right voltage and wire feed speed combination for each application. The Power Wave 355 is pre-programmed with wire feed speed/voltage relationships specifically designed for each wire/gas combination. For easy, accurate set-up, simply select a program based on your application and set the wire feed speed – one knob does it all! Make adjustments to the wire feed speed as you weld and the voltage is automatically regulated to maintain a consistent arc length, giving you

optimal arc performance with minimal effort. Every standard Power Wave contains a complete set of synergic MIG programs for a wide variety of applications, including:

- Steel (Argon Blends and CO2)
- Stainless Steel (Argon Blends and Helium Tri-Mix)
- Aluminum (4000 series and 5000 series)
- Metal Core

Reliability

- PC Boards are mounted in rugged plastic trays for an extra measure of mechanical protection. Each PC board is immersed, or fully encapsulated, in 3mm of epoxy resin to seal components from the elements for market-leading environmental protection.



Fully Encapsulated PC Board

- Simplified design separates control PC boards from the power components for easy diagnostic troubleshooting and service.
- Three year Lincoln warranty on parts and labor.
- Lincoln's Service Parts business commits to shipping in-stock parts the same day the order is received.
- Manufactured under a quality system certified to ISO 9001 requirements.

A Closer Look

- 1) CB1 Wire Feeder Circuit Breaker
- 2) Lead Connector (Sense Lead)
- 3) Wire Feeder Receptacle (5-Pin)
- 4) Negative Twist-Mate Terminal
- 5) Positive Twist-Mate Terminal⁽¹⁾
- 6) Internal Power Circuit Breaker
- 7) Power Switch
- 8) Status Light
- 9) High Temperature Light
- 10) RS232 Serial Communication Port

⁽¹⁾ Machine is shipped with a 2/0 power (10 ft.) cable to be connected to the wire feeder.



A Closer Look (con't)

Power Wave® 355 Ready-Pak™

Make it easy on yourself by ordering the pre-specified, pre-assembled, pre-connected Ready-Pak.

Includes:

- Power Wave 355 Power Source
- Power Feed 10 Wire Feeder (Bench Model)
- MSP2 Interface Panel
- .035 Drive Roll and Split Wire Guide Kit
- .045 Drive Roll and Split Wire Guide Kit
- Magnum 400 Gun and Cable Assembly
- Work and Wire Feeder Power Cables Package
- Inverter and Wire Feeder Cart
- Harris Flowmeter and Regulator



Process Capabilities

Process	Electrode	Electrode Polarity	Shielding Gas
Mild Steel MIG CV, Power Mode™, Synergic CV, Pulse	.025 - .052 SuperArc™ L-50 and L-56	Positive (DC+)	CO ₂ or Argon Blends
Stainless Steel MIG CV, Power Mode™, Synergic CV, Pulse	.030 - .045 Blue Max® Wire	Positive (DC+)	Argon Blends or Tri-Mix
Nickel Alloys	.035-.045 Electrodes	Positive (DC+)	Ar/He Blends
Aluminum MIG CV, Power Mode™, Synergic CV, Pulse-On-Pulse™	.035-1/16" Super Glaze™ 4043 and 5356 with Power Feed 10 wire feeder	Positive (DC+)	100% Argon
Mild Steel - FCAW Gas-Shielded Wire	Outershield® Wire	Positive (DC+)	CO ₂ or Argon Blends; Depending on the wire
Mild Steel - Metal Cored Wire	.045 - .052 Outershield® Electrodes	Positive (DC+)	Argon/CO ₂
Mild Steel - FCAW Self-Shielded Wire	Innershield® Wire	Negative or Positive (DC-, DC+)	None Required (Self-Shielded)
Mild Steel SMAW Stick	E6010 (crisp mode) - E7018 (soft mode) Fleetweld®, Jetweld® and Excalibur™ Electrodes	Positive (DC+)	None Required (Self-Shielded)
Stainless Steel SMAW Stick	Blue Max® or Red Baron™ Electrodes (soft mode)	Positive (DC+)	None Required (Self-Shielded)
Touch-Start TIG™	All sizes and types steel and stainless	Negative (DC-)	100% Argon
Air Carbon Arc Gouging, CC or CV	Carbon Electrode	Positive (DC+)	Compressed Air

Recommended Options



Work & Wire Feeder Power Cables Package

Includes work cable with ground clamp and Twist-Mate connector and wire feeder power cable with lug and Twist-Mate connector. Capacity is 350 amps at 60% duty cycle.

Order K1803-1.



Deluxe Adjustable Gas Regulator and Hose Kit

Accommodates CO₂, Argon or Argon-blend gas cylinders. Includes a cylinder pressure gauge, dual scale flow gauge and 4.3 ft (1.3m) gas hose.

Order K586-1.



Inverter and Wire Feeder Cart

Rear-wheeled cart includes front casters and no-lift gas bottle platform.

Convenient handles allow for easy cable storage while full length side trays store parts and tools. Shipped fully assembled. Small foot-print fits through 30 inch door.

Order K1764-1.

Dual Cylinder Kit

Permits side-by-side mounting of two full size gas cylinders, with easy loading. For use with K1764-1 cart.

Order K1702-1.



Valet Style Undercarriage

Offers a unique pull-out handle. It provides cable storage and the ultimate in portability.

Order K1838-1.



Twist-Mate Cable Plug

For connecting welding cable to output terminal receptacles. For 1/0-2/0 (50-70mm²) cable.

Order K852-70.

NOTE: Machine is shipped with two male Twist-Mate cable plugs (K852-70).



Twist-Mate™ Cable Plug

For connecting welding cable to output terminal receptacles. For 2/0-3/0 (70-95mm²) cable.

Order K852-95



Twist-Mate™ Cable Receptacle

For connecting welding cable to Twist-Mate cable plug. For 1/0-2/0 (50-70mm²) cable.

Order K1759-2.



Twist-Mate™ Cable Receptacle

For connecting welding cable to Twist-Mate cable plug. For 2/0-3/0 (70-95mm²) cable.

Order K1759-95.

Twist-Mate to Lug Adapter

For connection of lugged cable to Twist-Mate connectors (18" long).

Order K2176-1.

Sense Lead Kit

Recommended for extended cable length. Application allows machine to sense voltage directly at the work piece for improved arc performance.

Order K940-25

Wave Designer™ Software

Permits manipulation of several waveshape parameters including peak current, background current, peak pulse width and pulse frequency. Allows for optimization of arc length.

Order K1705-1.

Wave Designer™ PRO Software

All the features of Wave Designer, plus Arc Scope™, the arc analysis tool for those who need to monitor more than voltage and current. Arc Scope also tracks the arc power, arc resistance and heat input.

Order K1705-2.



Accessory Kit

For stick welding. Includes 35 ft. (10.7m) 2/0 electrode cable with lug, 30 ft. (9.1m) 2/0 work cable with lugs, head-shield, filter plate, cover plate, work clamp and electrode holder. 400 amp capacity.

Order K704.



Accessory Kit

For stick welding. Includes 20 ft. (6.1m) #6 electrode cable with lug, 15 ft. (4.6m) #6 work cable with lugs, head-shield, work clamp, electrode holder and sample pack of mild steel electrode. 200 amp capacity.

Order K875.

Pro-Torch™ TIG Torches

A full line of air-cooled and water-cooled torches available.

Request Lincoln publication E12.150.



Twist-Mate Torch Adapter

For connection of PTA-9 or PTA-17V torches (1 piece cable) to power sources with no gas passing through the Twist-Mate connection.

Order K960-1.

Power Wave 355 Order Form

PRODUCT DESCRIPTION	ORDER NUMBER	QUANTITY	PRICE
POWER WAVE 355	K2152-1		
POWER WAVE 355 Ready-Pak™	K2172-1		
Recommended Wire Feeders			
Power Feed 10 Wire Feeder	see publication E5.160		
Power Feed 10 Dual Wire Feeder	see publication E5.160		
Work and Wire Feeder Power Cables Package	K1803-1		
Magnum MIG Guns	see publication E12.10		
Magnum Flux-Cored Guns	see publication E12.100		
Recommended Options			
Deluxe Adjustable Gas Regulator and Hose Kit	K586-1		
Inverter and Wire Feeder Cart	K1764-1		
Dual Cylinder Kit	K1702-1		
Valet Style Undercarriage	K1838-1		
Twist-Mate Cable Plug, 1/0-2/0 (50-70mm ²) cable	K852-70		
Twist-Mate Cable Plug, 2/0-3/0 (70-95mm ²) cable	K852-95		
Twist-Mate Cable Receptacle, 1/0-2/0 (50-70mm ²) cable	K1759-70		
Twist-Mate Cable Receptacle, 2/0-3/0 (70-95mm ²) cable	K1759-95		
Twist-Mate to Lug Adapter	K2176-1		
Sense Lead Kit	K940-25		
Wave Designer Software	K1705-1		
Wave Designer Pro Software	K1705-2		
Recommended Stick Options			
Accessory Kit, 400 amps	K704		
Accessory Kit, 200 amps	K875		
Recommended TIG Options			
Pro-Torch TIG Torches with gas valve	see publication E12.150		
Twist-Mate Torch Adapter	K960-1		
	TOTAL:		

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 customers 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.

Lincoln Electric is a responsive manufacturer, but 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 this type of fabrication methods and service requirements.



THE LINCOLN ELECTRIC COMPANY

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