

Invertec® V450-PRO

Substantial Output. Smart Performance. Rugged Reliability.

Heavy fabrication welding operations will appreciate the broad multi-process performance of the V450-PRO – featuring robust stick, MIG and cored wire welding as well as precision Touch-Start TIG® performance. The V450-PRO is targeted for shops commonly welding with .052" or larger diameter wires that also require plenty of power for arc gouging repair work with a 3/8" carbon.

Take advantage of the benefits of inverter-based power sources, including a fast response to changes at the arc and high input power efficiency and power factor ratings for real savings on your electric bills. Combine those platform advantages with the optional Advanced Process Panel to add pulsing capability and access to Waveform Control Technology® and other arc performance Lincoln Nextweld® innovations. Add a rugged MaxTrac® wire drive system feeder to build an economical, high value, high performance welding package you can count on for use in your factories around the world.



Output



Input



Protective Door Reveals Added Controls:



Standard Welding Controls



Optional Advanced Process Panel

Processes

Stick, TIG, MIG, Pulsed⁽¹⁾, Flux-Cored, Gouging

Advantage Lincoln

- Features full remote and multi-process capability – stick, Touch-Start TIG®, MIG, flux-cored and arc gouging.
- 5-570 amp output range for all recommended processes is low enough for TIG welding on thin sheetmetal and robust enough for arc gouging with a 3/8" carbon.
- 88% efficiency with a high 95% power factor – the V450-PRO inverter platform helps you dramatically lower energy consumption to pocket real savings.
- Add the Advanced Process Panel Kit for access to Pulsed MIG and a host of Lincoln Nextweld® arc performance innovations that allow you to tailor the arc, including: Pulse-on-Pulse®, Power Mode® and Waveform Control Technology®.
- Standard Controls include:
 - Selectable Hot Start for stick welding: Turn it down for thin material or turn it up to overcome cold starting at the beginning of a weld.
 - Variable Arc Control: Dial in the “soft” or “crisp” arc characteristics you want for each application.
- Touch-Start TIG® makes it easy to achieve great arc starts with minimal or no tungsten contamination.
- Clever stackable case design allows you to stack up to three units to save valuable shop floor space.
- Supports 24, 42 or 115 VAC wire feeders.
- Heavy-duty construction, robust engineering and rigorous testing result in tough IP23S rating for use in industrial environments.
- Front panel 15 amp 115 volt AC auxiliary power receptacles with circuit breaker protection will power your lights, grinders or gun/torch water coolers (on K2420-1 only).
- Easy-access front panel controls and connections are protected by sturdy metal doors.
- Three year warranty on parts and labor.
- Manufactured under a quality system certified to ISO 9001 requirements and ISO 14001 environmental standards.

⁽¹⁾With Advanced Process Panel Kit only.

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)
Invertec® V450-PRO	K2420-1	208/230/460/575/3/50/60	60Hz: 450A/38V/100% (570A/43V/60%) 50Hz: 400A/36V/100% (500A/40V/60%)	60Hz: 58/53/25/22A (82/78/37/31A) 50Hz: 49/45/23/18A (67/61/31/25A)	5-570A	26.1 x 19.9 x 32.9 (663 x 505 x 835)	293 (133)
Invertec® V450-PRO (CE)	K2421-1	380/415/3/50/60	400A/36V/100% (500A/40V/60%)	36/33A (48/44A)	5-500A		278 (126)



Publication E5.94 7/05

Web Update 6/07
www.lincolnelectric.com

PERFORMANCE

Exceptional Multi-Process Fabrication Welding

The Lincoln Invertec® inverter platform enables strong multi-process welding performance with optimized arc characteristics for each process.

- Fast arc response yields tight output control:
 - More consistent bead appearance
 - Smooth arc action
 - Easy to follow puddle control

Five Welding Process Modes

1. CC-Stick Soft

Intended for low hydrogen stick applications.

Use to obtain outstanding E7018 performance for a variety of construction and fabrication applications.

2. CC-Stick Crisp

Delivers a crisp shorting response optimized for cellulose (E6010) electrodes.

3. TIG GTAW

Standard Lincoln Touch-Start TIG® makes it easy to establish an arc while minimizing tungsten contamination.

Add the optional TIG Module for touch-less high frequency starting.

4. CV-Wire

Intended for use for most MIG, and gas-shielded flux-cored or metal-cored applications.

The V450-PRO features an exceptionally wide sweet spot delivering the arc performance and finished weld quality every operator appreciates:

- .030"-1/16" solid wire
- .035"-3/32" cored wire

Delivers outstanding performance with a wide variety of shielding gas mixes, including 100% CO₂, Ar/CO₂ or Ar/O shielding gas for carbon steel as well as helium blends for stainless welding.

5. CV-Innershield®

Features a wide voltage range and tight voltage control optimized for Lincoln Innershield self-shielded flux-cored applications.

Arc Gouging accessible from all Stick and CV Welding Modes – With a maximum 570 amps, the V450-PRO has plenty of power to handle a 3/8" (9.5 mm) carbon.



Stick



Arc Gouging



CV-Wire



Stainless

A CLOSER LOOK

Get the Results You Prefer

Hot Start

Regulates the starting current at arc initiation for stick or TIG applications.

Set it to your preference to help overcome cold starts at the beginning of a weld, restarting AWS E7018 or stainless stick electrodes or to improve starting for tie-in welding on tack welds.

Turn it down for thin material or root welding on pipe. Turn it up for thick material or general construction welding.

Variable Arc Control

Adds or reduces inductance (arc energy), particularly for short-circuit transfer mode. Arc Control increases or decreases the size and frequency of arc droplet transfer.

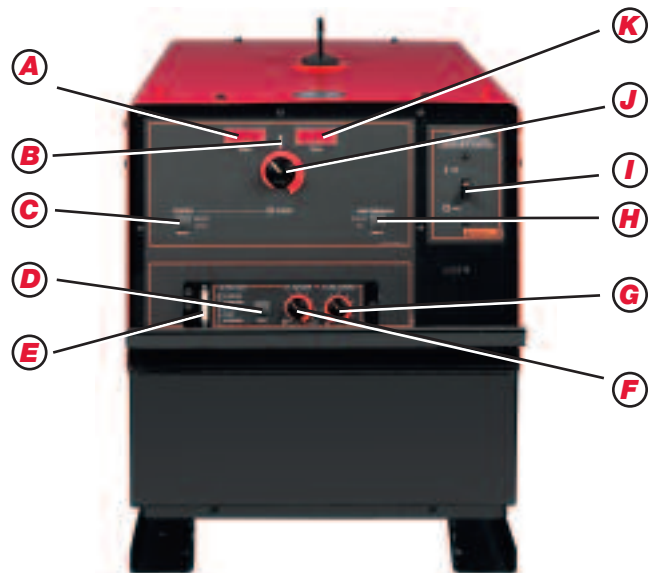
Set it to your preference to help control spatter levels or electrode stubbing as well as to improve weld toe wetting or to obtain a uniform bead shape.

Turn it down to obtain a softer arc or turn it up for a stiffer, more digging arc. For MIG, you can turn it up to aid with welding on open gaps, out-of-position work or for use with 100% CO₂ or 75% Ar / 25% CO₂.

FEATURES – KEY CONTROLS

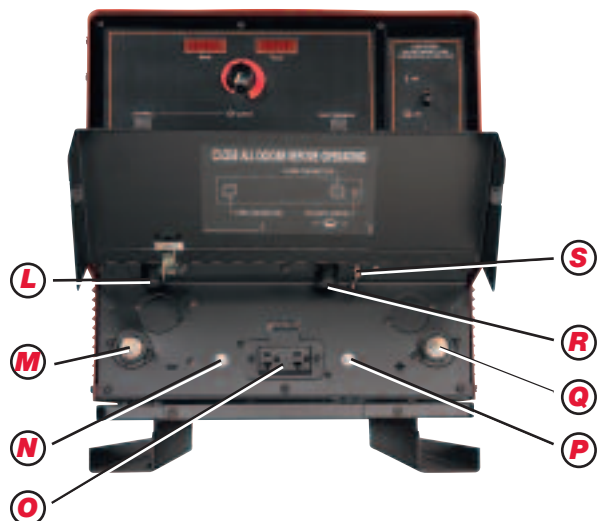
Upper Control Panel

- A) Large, bright, easy to read Amps Meter
- B) Thermal Overload Indicator Light
- C) Local/Remote Output Control Button
- D) Weld Mode Selector Button
- E) Serial Port for Software Updates
- F) Hot Start Control Knob
- G) Arc Control Knob
- H) Weld Terminals Button – On or Remotely Controlled
- I) Power On/Off Switch
- J) Output Amps or Output Voltage Control Knob
- K) Large, bright, easy to read Volt Meter



Lower Case Connection Panel

- L) 6-pin MS-Style Connector for Remote Control
- M) Negative Output Stud Terminal
- N) 24/42 Volt Circuit Breaker Reset Button
- O) 115 Volt AC Auxiliary Power Receptacles
- P) 115 Volt Circuit Breaker Reset Button
- Q) Positive Output Stud Terminal
- R) 14-pin MS-Style Connector for Wire Feeder Input Power and Remote Control (24V/42V/115V AC)
- S) Wire Feeder Voltmeter Polarity Switch

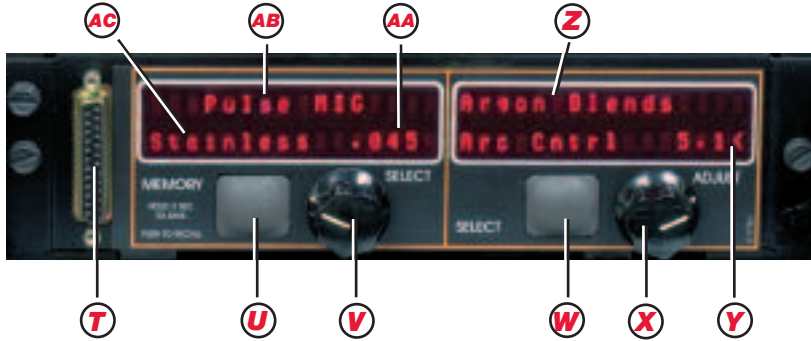


OPTIONAL ADVANCED PROCESS PANEL KIT

Add the Advanced Process Panel to gain access to Lincoln's Nextweld® Innovations, including Pulse-On-Pulse®, Power Mode®, Pulsed MIG.



- Displays gas, mode and wire size for easy setting and monitoring.
- Eight memories to quickly switch between weld modes.



Key Controls

- T) Serial Port for Software Updates
- U) Weld Mode Memory Set Button
- V) Weld Mode Select Knob
- W) Hot Start/Arc Control Select Button
- X) Hot Start/Arc Control Parameters Adjust Knob
- Y) Arc Control Setting
- Z) Shielding Gas Type
- AA) Consumable Diameter
- AB) Process
- AC) Material Type

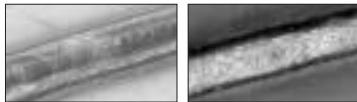


Pulse-On-Pulse® on 3mm Aluminum

Pulse-On-Pulse®

- Uses a sequence of varying pulse wave shapes to produce a TIG-like bead appearance and excellent weld properties when MIG welding aluminum.
- Pulse-On-Pulse® controls arc length and heat input together, making it easier to achieve good penetration.

For more information see Nextweld® Document NX-2.10



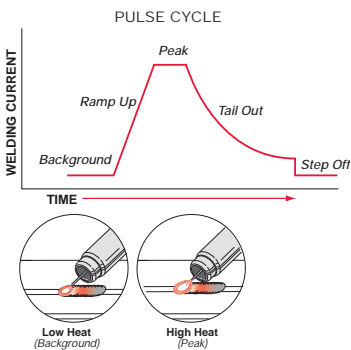
Power Mode® reduces spatter and improves bead appearance, even for low voltage procedures on stainless.

Power Mode® aids bead wetting and penetration on aluminum.

Power Mode®

- Uses high-speed regulation of output power to deliver extremely fast response to changes in the arc, for example, when using a whip technique.
- Improved MIG welding performance, including low spatter, very uniform, consistent bead wetting and controlled penetration.
- Great for low voltage applications on thin steel and stainless steel material less than 20 gauge (0.7 mm).
- Delivers excellent arc characteristics on aluminum and other alloys such as silicon bronze and nickel alloys.

For more information see Nextweld® Document NX-2.60



Pulsed MIG

- Varies weld current between peak (high heat) and background (low heat) current to provide better control of heat input.
- Reduces warping and burnthrough on thin materials.
- Enables in-the-flat, horizontal, vertical up, or overhead welding without a slag system. It can be used in hard automation, robotic, and semiautomatic applications.
- Optimized GMAW-P waveforms are available to use on aluminum, carbon steel, high strength low alloy steel, stainless steel, and nickel alloys.

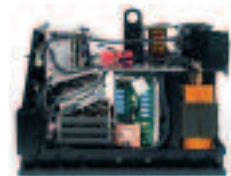
For more information see Nextweld® Document NX-2.70

QUALITY AND RELIABILITY

Robust Design

Safety, reliability and serviceability are built into Lincoln's inverter design.

- Inverter models operate at a high efficiency (88-90%) with a 95% minimum power factor at rated output and are capable of operating from a universal 3 phase input voltage (208 to 575 volts).
- Thermostatically protected.
- Electronic output over-current protection and electronic input over-voltage protection.
- Operating Temperature Range: -20°C to +40°C.
- Storage Temperature Range: -40°C to +40°C.
- Double insulation and varnish on main transformer.
- Shielded heavy duty input contactor in tightly sealed environmental enclosure.
- Tough PC Boards — potted and trayed, filled with epoxy, double locked harness connectors, environmentally protected connectors, electrical silicone grease, high current rating. Extra attention to detail provides excellent protection from dirt, dust and the environment.
- Efficient Cooling System with industrial motor with sealed bearings and metal fan blade.
- Fan-As-Needed™ — reduces power consumption, damaging thermal cycling and the amount of debris that gets drawn into the machine by shutting the fan down when it is not needed.



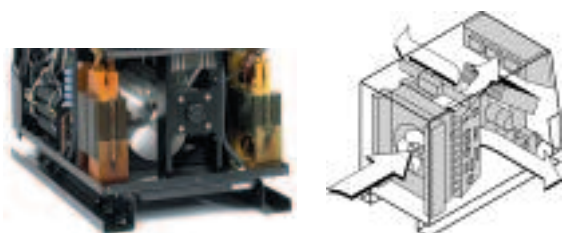
Open Construction for preventative maintenance and diagnostics.



Automotive Grade Sleeves protect leads from abrasion.



Electrical Connections coated with protective compound for long-term reliability in harsh environments.



Efficient Cooling System with Fan-As-Needed™.



Trayed and Potted PC Board provides excellent protection.

Rugged Testing and Reliability

All Lincoln inverters are fully tested for reliability before and after assembly.

- Each machine undergoes a functional weld test to ensure performance.
- Lincoln inverters are operated in an environmental chamber under extreme conditions of temperature and humidity.
- Mechanical testing, including vibration and drop testing is performed.
- Extensive temperature testing is performed to ensure that all components are running within allowable range.
- Three-year warranty on parts and labor.
- Manufactured under a quality system certified to ISO 9001 requirements and ISO 14001 environmental standards.
- Designed to the IEC/EN 60974-1 standard. Meets tough NEMA EW 1, CSA NRTL/C standards.
- Meets rigorous IP23S environmental rating.



Environmental Chamber



Manufacturing and Testing

READY-PAK® PACKAGES

Fully assembled and ready to weld. Select a Ready-Pak® Package and use one order number on your order form.

(Package does not include input power cord, shielding gas, welding electrode and personal protective equipment.)

V450-PRO/LF-72 Wire Feeder

Order K2494-1

- Invertec® V450-PRO power source
- LF-72 Heavy Duty Bench Model Wire Feeder
- Magnum® 400 Gun and 15 ft. Cable Assembly,
- .035-.045" (0.8-1.1 mm) Drive Rolls and Wire Guides
- Work and Wire Feeder 2/0 Welding Cable and Work Clamp Package - 10 ft. (3.0m)
- Harris® Flowmeter/Regulator with adapter and 10 ft. (3.0m) Hose

V450-PRO/LF-74 Wire Feeder

Order K2495-1

- Invertec® V450-PRO power source
- LF-74 Heavy Duty Bench Model Wire Feeder
- Magnum® 400 Gun and 15 ft. Cable Assembly,
- .035-.045" (0.8-1.1 mm) Drive Rolls and Wire Guides
- Work and Wire Feeder 2/0 Welding Cable and Work Clamp Package - 10 ft. (3.0m)
- Harris® Flowmeter/Regulator with adapter and 10 ft. (3.0m) Hose



Shown:
Invertec® V450-PRO/LF-72 Heavy Duty Wire Feeder Ready-Pak® Pkg.

TYPICAL V450-PRO WELDING SYSTEMS

For specific welding applications, assemble the products listed to best suit your needs.

V450-PRO/LF-74 Extra Torque: 5/64" (2.0mm) FCAW-SS Welding System

- | | |
|---|-------------------------|
| • Invertec® V450-PRO power source | K2420-1 |
| • LF-74 Bench Model, Heavy-Duty, Extra Torque Wire Feeder | K2426-3 |
| • 5/64" Drive Rolls and Wire Guides | KP1505-5/64 |
| • Lincoln Innershield® Gun and Cable Assembly | K1500-1 |
| • 10 ft. (3.0m) Magnum® Self-Shielded Gun and Cable Assembly, 5/64" | K115-5 |
| • Weld Power Cable – 10 ft. (3.0m) | K1842-10 ⁽²⁾ |
| • Work Cable and Clamp (GC-500) | K910-2 |
| • Dual Cylinder Platform Undercarriage | K1570-1 |
| • Harris® Flowmeter/Regulator and Gas Hose | K586-1 |

V450-PRO/DH-10 : .035" & .045" MIG Welding System

- | | |
|--|---------------------------|
| • Invertec® V450-PRO power source | K2420-1 |
| • DH-10 wire feeder | K1499-3 ⁽³⁾ |
| • .045 Drive Roll – solid wire | KP1505-045S |
| • .035 Drive Roll – solid wire | KP1505-035S |
| • Magnum® 400 Gun Package | K471-21 ⁽¹⁾⁽²⁾ |
| • Weld Power Cable – 10 ft. | K1842-10 ⁽²⁾ |
| • GC-500 Work Clamp | K910-2 |
| • Dual Cylinder Platform Undercarriage | K1570-1 |
| • Gas Regulator and Hose Kit | K586-1 |

⁽¹⁾Fully assembled, no gun connector required.

⁽²⁾Two required.

⁽³⁾Both electrodes must have the same polarity.



GENERAL OPTIONS



Advanced Process Panel
Includes Pulsed MIG, Pulse-On-Pulse® and Power Mode® capabilities. Alpha-numeric display for accurate setting.
Order K1763-1



Deluxe Adjustable Gas Regulator & 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



Cool-Arc™ 40 Water Cooler
Reliable and affordable water cooler for water-cooled MIG, TIG, or plasma cutting applications.
Order K1813-1 for 115V
Order K2187-1 for 230V



Lincoln Fume Extraction Systems
A full line of fume extraction systems are available.
Request Publications E13.11 Miniflex™ E13.40 Mobiflex™



Dual Cylinder Platform Undercarriage
Platform undercarriage for mounting two gas cylinders at rear of welder.
Order K1570-1

STICK OPTIONS



Accessory Kit – 400 Amp
For stick welding. Includes 35 ft. (10.7 m) 2/0 electrode cable with lug, 30 ft. (9.1 m) 2/0 work cable with lugs, headshield, filter plate, work clamp and electrode holder.
Order K704



Remote Output Control
For remote output of welding voltage. Consists of control box with 25 or 100 ft. (7.6 m or 30 m) of four conductor cable and 6-pin MS-type connector.
Order K857 for 25 ft. (7.6m)
Order K857-1 for 100 ft. (30m)

TIG OPTIONS



Pro-Torch® TIG Torch
V model two cable torches provide a convenient gas control valve to control shielding gas flow.

PTA-26V Two Cable Torch
Air-Cooled 200 amp
Order K1783-7 for 12.5 ft. 2 pc
Order K1783-9 for 25 ft. 2 pc

PTA-17V Two Cable Torch
Air-Cooled 150 amp
Order K1782-7 for 12.5 ft. 2 pc
Order K1782-9 for 25 ft. 2 pc

For High Frequency TIG Welding



TIG Module
Portable, high frequency unit with gas valve for TIG welding. Rated at 300 amps/60% duty cycle. Requires TIG Module Control Cable.
Order K930-2



Docking Kit
Provides a means to “dock” the TIG module on top of a flat-roofed power source, or any other flat surface measuring at least 10" x 15" (254 mm x 381 mm). Includes a latch and provisions for a user-supplied padlock to lock the TIG Module in place.
Order K939-1



TIG Module Control Cable
9-pin connector at the TIG Module to 14-pin MS type connector at the power source. (Contains input power source, control, contactor control, and ground circuits). For machines having a 14-pin remote control and power receptacle.
Order K936-1



Hand Amptrol®
Provides 25 ft. (7.6 m) of remote current control for TIG welding. (6-pin plug connection). Velcro straps secure torch.
Order K963-3 (one size fits all Pro-Torch TIG torches).



Foot Amptrol®
Provides 25 ft. (7.6 m) of remote current control for TIG welding. (6-pin plug connection).
Order K870



Arc Start Switch
May be used in place of the Foot or Hand Amptrol®. Comes with a 25 ft. (7.6 m) cable. Attaches to the TIG torch for convenient finger control to start and stop the weld cycle at the current set on the machine.
Order K814

INVERTEC® V450-PRO ORDER FORM

PRODUCT DESCRIPTION	ORDER NUMBER	QUANTITY	PRICE
INVERTEC® V450-PRO (208/230/460/575/3/50/60)	K2420-1		
INVERTEC® V450-PRO CE (380/415/3/50/60)	K2421-1		
INVERTEC® V450-PRO/LF-72 READY-PAK® PACKAGE	K2494-1		
INVERTEC® V450-PRO/LF-74 READY-PAK® PACKAGE	K2495-1		
RECOMMENDED GENERAL OPTIONS			
Advanced Process Panel	K1763-1		
Deluxe Adjustable Gas Regulator and Hose Kit	K586-1		
Cool-Arc™ 40 Water Cooler:			
For 115V	K1813-1		
For 230V	K2187-1		
Fume Extraction Systems:			
Miniflex™	See Publication E13.11		
Mobiflex™	See Publication E13.40		
Dual Cylinder Platform Undercarriage	K1570-1		
RECOMMENDED STICK OPTIONS			
Accessory Kit – 400 amp	K704		
Remote Output Control			
25 ft. (7.6 m)	K857		
100 ft. (30 m)	K857-1		
RECOMMENDED TIG OPTIONS			
Pro-Torch® PTA-26V Two Cable Torch, 12.5 ft. (3.8 m)	K1783-7		
Pro-Torch® PTA-26V Two Cable Torch, 25 ft. (7.6 m)	K1783-9		
Pro-Torch® PTA-17V Two Cable Torch, 12.5 ft. (3.8 m)	K1782-7		
Pro-Torch® PTA-17V Two Cable Torch, 25 ft. (7.6 m)	K1782-9		
TIG Module	K930-2		
Docking Kit	K939-1		
TIG Module Control Cable	K936-1		
Hand Amptrol®	K963-3		
Foot Amptrol®	K870		
Arc Start™ Switch	K814		
RECOMMENDED WIRE FEEDERS			
LN-8	See Publication E8.30		
LN-15	See Publication E8.60		
LN-25	See Publication E8.100		
LN-742	See Publication E8.20		
LF-72	See Publication E8.11		
LF-74	See Publication E8.11		
LN-10	See Publication E8.200		
DH-10	See Publication E8.200		
Cobramatic® Wire Feeder	See Publication E8.300		
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 responsible 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 these types of fabrication methods and service requirements.

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