

UTILITY MACHINE FOR THE OUTDOORS

Vantage® 435



Shown:
Vantage® 435
(K4107-2)

KEY FEATURES

When the job calls for structural steel welding and other rugged outdoor work, you need an engine-driven welder that covers all your process needs – stick, MIG, TIG, flux-cored and gouging – and also meets the latest diesel fuel emissions standards. Upgraded for Tier 4 Final (T4F) compliance, the Vantage® series has been re-engineered to deliver smoother arc characteristics and improved pipe welding capabilities.

Select the Vantage 435 for 400A/36VDC 100% duty cycle welding performance and gouging with up to 5/16 inch [8 mm] carbons.

- Optimal arc performance
- Cleaner, more reliable engine
- Low maintenance, reliable operations

Processes »

Stick, TIG, MIG, Flux-Cored,
Gouging

Output »



Input »



Product Number »

K4107-2

FEATURES

» Compact Case With Stainless Steel Enclosure

- Small size and light weight is suitable for many pickup trucks. Standard stainless steel roof, side panels and engine-access door deliver added protection and durability.

» Optimal Arc Performance

- Chopper Technology provides the best arc in the industry.
- Arclink provides synergic modes for stainless, aluminum, and steel.*
- Pulse modes available for minimal heat input and great out of position welding.*
- Enhanced gouging mode for smooth removal of material with up to 5/16 (7.9mm) carbons.

*Requires Power Feed 25M.

» Plenty of AC Generator Power

- 19 kW peak (17 kW continuous)
3-Phase 240V AC generator power. Will power industrial equipment such as a plasma cutter, pump or inverter welder.
- 12 kW peak (11 kW continuous)
1-phase AC generator power for common construction tools.

» Industrial Diesel Engine

- 4 cylinder 1800 RPM Deutz® diesel engine runs smooth and quiet. Dashboard gauge allows you to monitor performance at a glance.
- 20 gallon (76 liter) fuel tank for longer running time.

» Innovative Service Access

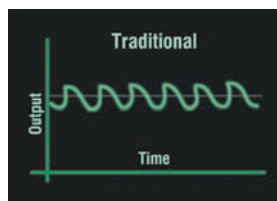
- Lockable, removable sliding engine access door provides ample space for engine and oil filter work without requiring a large clearance space on your truck. 55% more access than competitive product.
- Battery drawer on front of machine and top-mounted radiator cover provide convenient access to these systems. Patented tilt down control panel for easy servicing of internal components.

PERFORMANCE

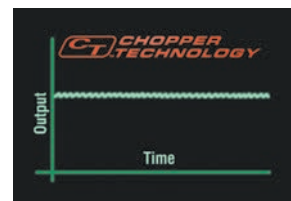
Arc Performance

- 400 amps @ 100% duty cycle with output range up to 520 amps. All ratings are at temperatures of 104°F/40°C.


WHAT IS CHOPPER TECHNOLOGY?



Traditional weld control is more variable around the desired output.



Chopper Technology delivers extremely fast response for tighter output control.

Patented and award-winning Lincoln Electric  Chopper Technology® delivers superior DC arc welding performance for general purpose stick, downhill pipe, DC TIG, MIG, cored-wire and arc gouging.

Benefits of  Chopper Technology include:

- Easy arc starting
- Smooth arc action
- Low spatter levels
- Excellent bead appearance

- Arc gouging with up to a 5/16 in. (7.9 mm) carbon. A separate arc gouging mode maximizes output.
- VRD™ (Voltage Reduction Device™) reduces OCV (open circuit voltage) in CC-stick welding mode for added safety.

WHAT IS VRD?

The VRD provides additional safety in the CC-stick weld mode, especially when working in an environment with a higher risk of electrical shock such as wet areas and hot, humid, sweaty conditions. The VRD™ reduces the OCV at the welding output terminals while not welding to less than 30 volts DC.

The VRD is activated by flipping a toggle switch inside the machine to the "ON" position. Indicator lights monitor the voltage: green for less than 30 volts while not welding, and either red (greater than 30 volts) or green while welding, depending on the actual voltage of the arc.

Other weld modes when VRD is on:

- Downhill Pipe – There is no output.
- CV-Wire – OCV is not reduced.
- Touch Start TIG – No difference in operation. TIG is normally a low voltage (less than 30 volts) operation.



VRD portion of nameplate with green light on.

- CC-stick mode is optimized for general purpose stick using E7018 low hydrogen electrode.
- Built-in "hot" start for easier starts and restrikes minimizing the electrode "sticking" to the work.

- Downhill pipe mode has arc force control for enhanced downhill pipe welding. The pipe mode is excellent for cellulosic electrodes and facilitates fast travel speeds, especially on fill passes. Adjust the arc force for a soft, buttery arc or a more forceful digging arc.
- Standard DC Touch Start TIG welding, not scratch start, for easy arc starting that avoids tungsten contamination and the need for high-frequency equipment.

WHAT IS TOUCH START TIG?

Touch Start TIG uses a very low voltage to sense when the tip of the tungsten electrode is touched to the work piece. When this occurs, a complete circuit is established. When the tungsten is then raised from the work piece, the circuit senses a change in voltage and initiates the appropriate welding current and voltage to support the TIG welding process.

Enjoy the added benefits of Lincoln Electric's Touch Start TIG when DC TIG welding. Not only do you avoid tungsten contamination when arc starting, but you also don't need extra high frequency equipment.

- Excellent CV wire welding with cored-wire and MIG (CO₂ and mixed gas).

Generator Performance

- 3-phase 240V AC generator power rated at 19 kW peak (17 kW continuous) output to power industrial equipment such as a plasma cutter, pump or inverter welder. Simultaneously weld and use 3-phase AC power – for example, up to 9,400 watts can be delivered while welding at 300 amps.
- 3-phase 240V receptacle on control panel eliminates the need to hard-wire the connections.
- The Vantage 435 provides added value at the job site by delivering up to 12 kW peak (11 kW continuous) watts of 1-phase AC auxiliary power for equipment such as a Lincoln Electric plasma cutter. Also use for lights, grinders and other common construction tools. And, you can simultaneously weld and have access to AC power – 4,700 watts can be delivered while welding at 300 amps.
- AC generator voltage is constant at 120V or 240V at any weld dial setting.
- Two 120V GFCI (Ground Fault Circuit Interrupter) modules are sealed from moisture for more reliable operation.
- All receptacles are circuit breaker protected. Each receptacle has a spring-loaded weather protective cover which keeps each receptacle protected from the environment when not in use.

SIMULTANEOUS WELDING AND AC GENERATOR POWER

Weld Amps		1-Phase			3-Phase			Simultaneous 1- and 3-Phase	
		Watts	Amps		Watts	Amps		Watts	Amps
0	AND	11,000	46	OR	17,000	41	OR	11,000	—
100		11,000	46		15,400	37		11,000	—
200		8,000	33		13,000	31		8,000	—
300		4,700	20		9,400	23		4,700	—
400		1,700	7		3,400	8		1,700	—
500		0	0		0	0		0	—

FEATURES

- Simple Controls – Keeps training time to a minimum. The flip-down control panel door keeps less frequently used dials out of the way. Scratch-resistant Lexan® nameplate.
- Digital meters for amps and volts output make it easy to precisely set your procedures.
- Large 20 gallon (76 liter) fuel tank provides run time for an extended day – over 16 hours of welding at 400A/36V/100% duty cycle output, or 36 hours at high idle.
- Engine hour meter makes it easy to schedule maintenance.
- LN-25 Ironworker™ across-the-arc wire feeder is a recommended option.
- 14-pin connector for Lincoln Electric wire feeders with control cables: LF-72, LF-74, Activ8™, LN-25 PRO Dual Power, and Flex Feed™ 74 HT. Also compatible with Magnum® SG spool gun system.
- Two Vantage 435 units can be paralleled in the CC-stick mode to increase output.
- Kilowatts available for Multi-Weld® 350 use: 6 KW @ 60V DC, 8.7 KW @ 58V DC.

KEY CONTROLS



QUALITY AND RELIABILITY

- Simple wire harnessing keeps connections to a minimum for greater reliability. Lead and harness strain reliefs on all control connections help ensure trouble-free performance.
- Engine protection system includes automatic shutdown for low oil pressure or high engine temperature.
- Indicator light turns on for low oil pressure or high engine temperature. A second indicator light turns on if the engine battery charging system malfunctions.
- Circuit breaker protection on the battery ignition system provides added component protection.
- Environmental friendly engine! The engine has a closed breather system to keep the engine compartment and ground clean. This system eliminates oil mist from collecting inside the engine compartment, especially on surfaces that would lower engine cooling efficiency.
- Self-bleeding engine simplifies startup if your fuel tank runs dry.
- Printed circuit boards are environmentally-shielded using Lincoln Electric's engineered potting and protective frame trays.
- Dependability and long life are aided by all-copper windings in rotor and stator with high quality insulation.
- Standard stainless steel roof, side panels and engine-access door deliver added protection, durability and corrosion-resistance. Eliminates the need to paint or replace rusting panels.
- Manufactured under a quality system certified to ISO 9001 requirements and ISO 14001 environmental standards.
- Canadian Standards Association (CSA) certified.
- Three-year Lincoln Electric warranty (engine is warranted separately by the manufacturer - see Engine Specifications, footnote 6).



MACHINE SPECIFICATIONS

Product Name	Ordering Information	Rated Output ⁽¹⁾ Current/Voltage/Duty Cycle	Output Range	Open Circuit Voltage	Auxiliary Power ⁽²⁾⁽³⁾	H x W x D in. (mm)	Weight lbs. (kg)
Vantage 435 Base Model	K4107-2	IEC Rating: 400A/36V/100%	30-520A CC/CV 20-250A TIG 30-525A Gouge	60V Max OCV @1800 RPM	1-Phase 12 kW Peak 11 kW Continuous 120/240V AC, 60Hz	Machine only 39.1 x 28.4 x 65.1 (994 x 721 x 1654)	1,382 (626)
Ready-Pak 1	K4107-2 RP1	Max Rating: 520A/30V/60%			3-Phase 19 kW Peak 17 kW Continuous 240V, 60Hz	To top of exhaust tube: 48.0 (1219)	
Ready-Pak 3	K4107-2 RP3						

(1) High Altitude: For maximum rating, derate the output 2.5% to 3.5% for every 1,000 ft. (300 m). High Temperature: For maximum rating, derate 2 volts for every 18°F (10°C) above 104°F (40°C).

(2) When welding, available AC generator power will be reduced. Output voltage is within +/- 10% at all loads up to rated capacity.

(3) 120V will operate either 60 Hz or 50/60 Hz power tools, lights, etc.

ENGINE SPECIFICATIONS

Engine Model	Description	Horsepower & Displacement	Capacities U.S. gal. (L)	Operating Speeds	Fuel Consumption gal/hr (L/hr)
Deutz D2.9L4 ⁽¹⁾ EPA Tier 4	4 Cylinder, 34.8 HP (25.9 kW) Naturally Aspirated Water-Cooled Diesel Engine	34.8 HP @ 1800 RPM 177 cu in. (2.9 L)	FUEL: 20 (75.7) OIL: 2.35 (8.9)	400A Load 1800 RPM High Idle 1800 RPM Low Idle 1500 RPM	1.53 (5.8) 0.54 (2.1) 0.50 (1.9)

(1) Deutz engine warranty is 3 years. Warranty is 3 years/3,000 hours whichever comes first for the compressor and 1 year/1,000 hours whichever comes first for the clutch, idler roll and automatic belt tensioner.

VANTAGE 435 PACKAGES	Product Number	Ready-Pak 1 (K4107-2-RP1)	Ready-Pak 3 (K4107-2-RP3)
Vantage 435	K4107-2	•	•
Medium Welder Trailer	K2636-1	•	•
Duo Hitch: 2 in. (51 mm) Ball/Lunette Eye Hitch (included)	—	•	•
Fender and Light Kit	K2639-1	•	•
Cable Rack	K2640-1	•	•
Cable Connectors (qty. 2)	K2487-1	•	
Electrode Cable 3/0, two 50 ft. (15.3 m) lengths (qty. 2)	K2485-3	•	
Electrode Cable 3/0, 10 ft. (3m)	K2483-3	•	
Work Cable 3/0, 50 ft. (15.3m)	K2484-3	•	
400A Electrode Holder	K909-8	•	
500A Work Clamp	K910-2	•	

• Included



120V



GENERAL OPTIONS

Power Plug Kit (20A)

Provides four 120V plugs rated at 20 amps each, and one dual voltage, full KVA (1-Phase) plug rated at 120/240V, 50 amps. 120V plug may not be compatible with common household receptacles.
Order K802N

Full-KVA Power Plug (1-Phase)

One dual voltage plug rated at 120/240V, 50 amps. NEMA 14-50P.
Order T12153-9

Full-KVA Power Plug (3-Phase)

One plug rated at 240V, 50 amps. NEMA 15-50P.
Order T12153-10

Full - KVA Adapter Kit (1-Phase)

Provides convenient connection of Lincoln Electric equipment having a 240V AC 1-phase plug (NEMA 6-50P) to the full-KVA receptacle on Lincoln engine-driven welders.
Order K1816-1

Medium Welder Trailer

For heavy-duty road, off-road, plant and yard use. Includes pivoting jack stand, safety chains, and 13 in. (330 mm) wheels. Stiff .120 in. (3.0 mm) welded rectangular steel tube frame construction is phosphate etched and powder coat painted for superior rust and corrosion resistance. Low sway suspension gives outstanding stability with manageable tongue weight. Wheel bearings are packed with high viscosity, high pressure, low washout Lubriplate™ grease. Includes a Duo-Hitch™ – a 2 in. (51 mm) Ball/Lunette Eye combination hitch. Overall width 60 in. (1524 mm). Overall length 124 in. (3150 mm).
Order:
K2636-1 Trailer
K2639-1 Fender & Light Kit
K2640-1 Cable Rack

Shown with optional
K2639-1 Fender &
Light Kit

Four-Wheeled Steerable Yard Trailer

For off-road, plant and yard use. Includes an automatically engaging drawbar lock when the drawbar is raised to the vertical position. 13 in. (330 mm) wheels. Wheel bearings are packed with high viscosity, high pressure, low washout Lubriplate grease. Stiff 3/16 in. (4.8 mm) welded rectangular steel frame construction is phosphate etched and powder-coat painted for superior rust and corrosion resistance. Also includes a Duo-Hitch – a 2 in. (51 mm) Ball/Lunette Eye combination hitch. Overall width 55 in. (1397 mm). Overall length 124 in. (3150 mm).
Order K2641-2



Spark Arrestor Kit

Mounts to muffler exhaust to significantly reduce spark emissions.
Order K3985-1

Polarity/Multi-Process Switch

For easy polarity switching. Example: DC-stick root pass on pipe & DC+ stick for hot, fill and cap passes. Also for an easy process change. Example: DC+ stick root pass on pipe and DC- Innershield™ self-shielded flux-cored wire for hot, fill and cap passes. 6 & 14-pin remote connections can be made to this unit. For all Lincoln Electric Chopper Technology engine-driven welders. Mounts on roof with K2663-1 Docking Kit.
Order K2642-1

Docking Kit

Secures the K2642-1 Polarity/Multi-Process Switch to the engine-driven welder roof. Release latch permits removal of K2642-1 Polarity/Multi-Process Switch. Made from stainless steel for rust-free operation. For all Lincoln Electric Chopper Technology™ engine-driven welders.
Order K2663-1

STICK OPTIONS

Accessory Kit

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, cover plate, work clamp and electrode holder. 400 amp capacity.
Order K704

Remote Output Control

Consists of a control box with choice of two cable lengths. Permits remote adjustment of output.
Order:
K857 for 25 ft. (7.6 m)
K857-1 for 100 ft. (30.5 m)

Remote Output Control with 120V AC Receptacles

Remote weld output control box with two 120V AC receptacles having GFCI (Ground Fault Circuit Interrupter) protection. One cord for both remote and power. 100 ft. (30.5 m) length. Permits remote adjustment of weld output and power for tools (such as a grinder) at the work. 20 amp capacity.
Order K2627-2



TIG OPTIONS

Pro-Torch™ PTA-26V TIG Torch

Air-cooled 200 amp torch (2 piece) equipped with valve for gas flow control. 25 ft. (7.6 m) length.
Order K1783-9

Magnum Parts Kit for PTA-26V TIG Torch

Magnum Parts Kit provides all the torch accessories you need to start welding. Parts Kit provides collets, collet bodies, a back cap, alumina nozzles and tungstens in a variety of sizes, all packaged in an easy to carry reclosable sack.
Order KP509

Foot Ampctrl™

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

Hand Ampctrl™

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]

Square Wave® TIG 200

This 46 lb (21 kg) TIG and stick welder includes adjustable AC Frequency Control and AC Balance for great results on aluminum, pulse mode and 120V or 230V input power capability.
Order K5126-1

WIRE FEEDER OPTIONS

LN-25 Ironworker® Wire Feeder

Portable CV unit for flux-cored and MIG welding with MAXTRAC™ wire drive system. Includes digital meters for wire feed speed/ amperage and voltage, gas solenoid, internal contactor and 5/64 in. (2.0 mm) drive roll kit for cored wire. Has 83% reduced wire feed speed capability for 6 o'clock pipe welding with Innershield wire.
Order K2614-9

K126 PRO Innershield Gun

For self-shielded wire with 15 ft. (4.5 m) cable. For .062-5/64 in. (1.6-2.0 mm) wire. Includes K466-10 Connector Kit.
Order K126-12

Drive Roll and Guide Tube Kit

For .068-.072 in. (1.7-1.8 mm) cored or solid steel wire.
Order KP1697-068



RECOMMENDED ACCESSORIES



Magnum® PRO 350
Ready-Pak® 15 ft., .035-5/64 in.
 Magnum PRO MIG/flux-cored welding guns are rated 100% duty cycle. The guns are designed for high amperage, high duty cycle applications in extreme environments where heat-resistance and fast serviceability are key.
Order K2652-2-10-45



Drive Roll and Guide Tube Kit
 For .035 in. and .045 in. (0.9-1.1 mm) solid steel wire.
Order KP1696-1



Magnum SG Spool Gun
 Hand held semiautomatic wire feeder. Requires SG Control Module and Input Cable.
Order K487-25



SG Control Module
 The interface between the power source and the spool gun. Provides control of the wire speed and gas flow. For use with a spool gun.
Order K488



Input Cable
 (For SG Control Module)
 For Lincoln Electric engine power sources with 14-pin MS-type connection, separate 115V NEMA receptacles and output stud connections.
Order K691-10



PLASMA CUTTING
Tomahawk® 1000
 Cuts metal using the AC generator power from the engine-driven welder. Requires the T12153-9 Full-KVA Power Plug (1-Phase).
Order K2808-1



ADVANCED PROCESS
Power Feed® 25M
Plastic Case Wire Feeder
 ArcLink® enabled feeder accesses pulse and synergic modes. Also provides 8 memories with limits for process control.
Order K2536-5



Power Feed 25M
Aluminum Case Wire Feeder
 ArcLink® enabled feeder accesses pulse and synergic modes. Also provides 8 memories with limits for process control.
Order K2536-4



Deluxe Adjustable Gas Regulator & Hose Kit
 Accommodates CO₂, argon, or argon-blend gas cylinders. Includes a cylinder pressure gauges, dual scale flow gauge and 4.3 ft. (1.3 m) gas hose.
Order K586-1



Micro Wire Straightener
 Straightens .035-1/16 inch (0.9-1.6 mm) wire for use with portable feeders.
Order K1733-4



Heavy Duty ArcLink Control Cable
Order K2683-25, 25 ft. (7.6 m)
K2683-50, 50 ft. (15.2 m)
K2683-100, 100 ft. (30.5 m)

PRODUCT SPECIFICATIONS

Product Name	Product Number	Rated Output @ 104°F [40°C]: Current/Voltage/ Duty Cycle	Output Range	Engine	No. of Cylinders	HP & Speed (rpm)	H x W x D in (mm)	Net Wt. lb (kg)
Vantage® 435 Base Model	K4107-2	<u>IEC Rating:</u> 400A/36V/100%	30-520A CC/CV 20-250A TIG	Deutz® D2.9L4 Diesel Engine EPA Tier 4 Final Compliant	4	34.8 @ 1800	Machine only 39.1 x 28.4 x 65.1 (994 x 721 x 1654)	1382 (626)
Ready-Pak® Pkg. 1	K4107-2-RP1	<u>Max Rating:</u> 520A/30V60%	<u>3-Ph/AC Power:</u> 19 kW peak 17 kW continuous					—
Ready-Pak® Pkg. 3	K4107-2-RP3		<u>1-Ph/AC Power:</u> 12 kW peak 11 kW continuous				To top of exhaust tube: 48.0 (1219)	

For best welding results with Lincoln Electric equipment, always use Lincoln Electric consumables. Visit www.lincolnelectric.com for more details.

Manufactured at a facility with certified ISO Quality and Environmental Management Systems.

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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 information or advice about their use of our products. Our employees respond to inquiries to the best of their ability based on information 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. Accordingly, Lincoln Electric does not warrant or guarantee or assume any liability with respect to such information or advice. Moreover, the provision of such information or advice does not create, expand, or alter any warranty on our products. Any express or implied warranty that might arise from the information or advice, including any implied warranty of merchantability or any warranty of fitness for any customers' particular purpose is specifically disclaimed.

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