

DC-655

650 Amp DC Multi-Process Welding Power Source

This 650-amp, 100% duty cycle CV/CC power source is ideal for construction and shop fabrication because of its excellent arc performance and many energy saving features. This machine also has a high overall efficiency of 84% for even more energy and cost savings. Save money with the idle shut down timer that powers down the DC-655 when not in use for extra energy conservation. Keep internal components cool without wasting energy with Lincoln's Fan-As-Needed (F.A.N.) that shuts off automatically when the system is cooled. Don't think you're sacrificing arc performance for efficiency; the DC-655 features a calibrated output knob for precise procedure setting and adjustable arc force for a tailored arc and ultimate low end performance – down to 50 amps – for excellent stick, MIG and TIG performance.



Processes

Stick TIG MIG Flux-Cored
Subarc Gouging

Advantage Lincoln

- **CC Arc Force Control Knob with built-in "Hot Start".**
- **"Idle Shut Down mode" automatically shuts machine off when not in use to minimize power consumption.**
- **Fan-As-Needed™ – solid state thermally controlled cooling fan operates only when required. Minimizes power consumption, operating noise and dust intake.**
- **Full range calibrated output voltage and current control for easy operation.**
- **Separate output studs let you choose low or high inductance. Select high inductance for most stick and wire processes. Select low inductance for Innershield® NR®-211-MP, NR-212, and NR-203 type wires.**
- **Optional digital ammeter/voltmeter kit. Easy front panel installation.**
- **Panel switches are behind front latched panel, for remote or machine panel output control, and output "on" or remote "on" selection, and CC, CV Subarc or CV MIG mode selection.**
- **Low profile case allows stacking machines up to three high to conserve floor space. (Stacking not recommended when using undercarriage).**
- **Electronic and thermal protection from current overload and excessive temperatures.**
- **Function lights built into the printed circuit boards speed diagnosis.**

Description

Output



Input



Recommended General Options

Digital Meter Kit, Air Filter Kit, Dual Process Switch, Paralleling Kit, Remote Output Control, Remote Control Adapter, Deluxe Adjustable Gas Regulator & Hose Kit, Undercarriage

Recommended Stick Options

Accessory Kit

Recommended TIG Options

Pro-Torch™ TIG Torches, TIG Module, Docking Kit, Hand Amptrol™, Foot Amptrol, Remote Control Adapter, Amptrol Adapter Kit, Water Valve, TIG Control Cable Extension

Recommended Wire Feeders

LN-7, LN-7 GMA, LN-742, LN-8, LN-9, LN-9 GMA, LN-15, LN-23P, LN-25, LN-10, DH-10, Cobramatic®, NA-3, NA-5, LT-7

Order

K1609-2	DC-655	230/460/575/3/60
K1609-4	DC-655	460/3/60
K1610-1	DC-655	230/400/3/50/60

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)
DC-655	K1609-2	230/460/575/3/60	650A / 44V / 100% (815A / 44V / 60%)	122/61/49A	13-44V 50-815A Max. OCV: 46V (CV) 68V (CC)	27.5 x 22.2 x 38.0 (699 x 564 x 965)	720 (327)
	K1609-4	460/3/60		61A			
	K1610-1	230/400/3/50/60		122/70A			

Advantage Lincoln

- Recessed front panel protects operating controls from damage.
- Both 14 pin MS-style cable connection and terminal strip access for remote control and wire feeder connections and output studs for weld cables.
- Power on/off switch with pilot light and thermal trip indicator light.
- Circuit breaker protected 115V and 42V AC wire feeder auxiliary power.
- 115V duplex receptacle provides 20 amps of auxiliary power. (15 Amps for Canadian CSA model.)
- Line voltage compensation for maintaining weld consistency, even with line voltage changes of $\pm 10\%$.
- CSA approved and UL listed.
- Three year warranty on parts and labor.
- Manufactured under a quality system certified to ISO 9001 requirements.

System Selection

Typical MIG and flux-cored gas-shielded welding systems.

DC-655/LN-7 GMA

<i>.045 MIG Welding System</i>	
Description	Order Number
DC-655 power source	K1609-2
Digital Meter Kit	K1482-1
LN-7 GMA (Two Roll) wire feeder	K440-2
Feeder Control Cable – 10 ft.	K1818-10
.045-.052 Drive Roll – solid wire	KP653-052S
Universal Stand	K1524-1
Swivel Platform	K1557-1
Magnum® 400 Gun & Cable asbly	K471-2
Gun Connector Kit	K466-1
Weld Power Cable – 10 ft. (2 req'd.)	K1842-10
GC-500 Work Clamp	K910-2
Undercarriage (twin cylinder)	K842
Gas Regulator and Hose Kit	K586-1

DC-655/LN-10

<i>.045 MIG Welding System</i>	
Description	Order Number
DC-655 power source	K1609-2
Digital Meter Kit	K1482-1
LN-10 (Four Roll) wire feeder	K1559-3
.045 Drive Roll – solid wire	KP1505-045S
Swivel Platform	K1557-1
Magnum 400 Gun Package	K471-21 ⁽²⁾
Weld Power Cable – 10 ft. (2 req'd.)	K1842-10
GC-500 Work Clamp	K910-2
Undercarriage (twin cylinder)	K842
Gas Regulator and Hose Kit	K586-1

DC-655/LN-10

<i>3/32 Flux-Cored Gas-Shielded Welding System</i>	
Description	Order Number
DC-655 power source	K1609-2
Digital Meter Kit	K1482-1
LN-10 (Four Roll) wire feeder	K1559-3
3/32" Drive Roll	KP1505-3/32
Swivel Platform	K1557-1
Magnum 550 Gun & Cable Assembly	K598-11
550 Gun Receiver Bushing	K1500-3
550 Gun Connector Kit	K613-7
Weld Power Cable – 10 ft. (2 req'd.)	K1842-10
GC-500 Work Clamp	K910-2
Undercarriage (twin cylinder)	K842
Gas Regulator and Hose Kit	K586-1

DC-655/DH-10

<i>.045 MIG & 3/32 Flux-Cored Gas-Shielded Welding System</i>	
Description	Order Number
DC-655 power source	K1609-2
Digital Meter Kit	K1482-1
DH-10 (Four Roll) wire feeder ⁽¹⁾	K1499-3
.045 Drive Roll – solid wire	KP1505-045S
3/32" Drive Roll	KP1505-3/32
Magnum 400 Gun Package	K471-21 ⁽²⁾
Magnum 550 Gun & Cable Assembly	K598-11
550 Gun Receiver Bushing	K1500-3
550 Gun Connector Kit	K613-7
Weld Power Cable – 10 ft.	K1842-10
GC-500 Work Clamp	K910-2
Undercarriage (twin cylinder)	K842
Gas Regulator and Hose Kit	K586-1

NOTE: Systems do not include shielding gas. Sold separately.

⁽¹⁾Both electrodes must have the same polarity.

⁽²⁾Fully assembled, no gun connector required.

Recommended Options



Digital Meter Kit

Displays amps and volts.
Order K1482-1.



Air Filter Kit

Mounts on the front of the machine and uses cleanable, all metal air filters.
Order K1486-1.



Dual Process Switch

Mounts on front of machine and provides polarity change or electrical isolation. Great for arc gouging applications and where two separate feeders require different output polarity or inductance settings.
Order K1528-1.



Paralleling Kit

Permits paralleling of two DC-655's for welding currents of up to 1300 amps, 100% duty cycle. The "master" DC-655 controls both paralleled machines.
Order K1611-1.



Remote Output Control

Provides 25 ft. or 100 ft. (7.6m or 30m) of remote output control (6 pin plug connection). Requires K864 Control Cable Adapter. For 25 ft. (7.6m),
Order K857
For 100 ft. (30m),
Order K857-1.



Remote Control Adapter

Y connection adapter for connecting K857 Remote Voltage Control (6 pin plug connection) and wire feeder input cable (14 pin plug connection) to DC-655 14 pin receptacle.
Order K864.



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.



Undercarriage

Platform undercarriage with mountings for two gas cylinders at rear of welder.
Order K842.



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



TIG Module

Supplies high frequency for superior starting, contactor control, remote control capability and a gas valve for TIG welding.
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 in. (254 x 381mm). It includes a latch and provisions for a user-supplied padlock to lock the TIG Module in place.
Order K939-1.



Hand Ampctrl™

Varies current for making critical TIG welds. Fastens to the torch for convenient thumb control. Comes with a 25 ft. (7.6m) cable. Fully extend the slide forward to achieve maximum current. Returning to the start position finishes the weld and starts the afterflow cycle on systems so equipped.
Order K963-1
(For smaller handle 9, 17 or 20 series torches).
Order K963-2
(For larger handle 26 or 18 series torches).



Foot Ampctrl™

Varies current for making critical TIG welds. Depress pedal to increase current. Depressing pedal fully achieves maximum set current. Fully raising the pedal finishes the weld and starts the afterflow cycle on systems so equipped. Includes 25 ft. (7.6m) control cable.
Order K870.



Ampctrl Adapter Kit

Adapts Ampctrl's 6-pin MS-type plug connection to terminal strip on power source.
Order K843.



Water Valve

For use with TIG Module. Shuts off water flow when the arc is extinguished when using Magnum® water-cooled TIG torches.
Order K844-1.



TIG Control Cable Extension

Allows the TIG Module to be operated at up to 45 ft. (13.7m) from power source. Connects between the 2 ft. (0.6m) control cable and the TIG Module. 45 ft.
Order K937-45.

DC-655 Order Form

PRODUCT DESCRIPTION	ORDER NUMBER	QUANTITY	PRICE
DC-655 (230/460/575/3/60)	K1609-2		
DC-655 (460/3/60)	K1609-4		
DC-655 (230/400/3/50/60)	K1610-1		
Recommended General Options			
Digital Meter Kit	K1482-1		
Air Filter Kit (cannot be used with K1528-1)	K1486-1		
Dual Process Switch (cannot be used with K1486-1)	K1528-1		
Paralleling Kit	K1611-1		
Remote Output Control – MS Connector (use with K864):			
for 25 ft. (7.6m)	K857		
for 100 ft. (30m)	K857-1		
Remote Control Adapter	K864		
Deluxe Adjustable Gas Regulator & Hose Kit	K586-1		
Undercarriage	K842		
Recommended Stick Options			
Accessory Kit	K704		
Recommended TIG Options			
Pro-Torch™ TIG Torches	See Publication E12.150		
TIG Module	K930-2		
Docking Kit	K939-1		
Amptrol™ – Hand Operated			
For PTA-9, PTA-17 and PTW-20 TIG Torches	K963-1		
For PTA-26 and PTW-18 TIG Torches	K963-2		
Amptrol™ – Foot Operated	K870		
Remote Control Adapter	K864		
Amptrol Adapter Kit	K843		
Water Valve	K844-1		
TIG Control Cable Extension – 45 ft. (13.7m)	K937-45		
Recommended Wire Feeders			
LN-7 and LN-7 GMA Industrial Wire Feeder	See Publication E8.10		
LN-742 Industrial Wire Feeder	See Publication E8.20		
LN-8 Industrial Wire Feeder	See Publication E8.30		
LN-9 and LN-9 GMA Industrial Wire Feeder	See Publication E8.50		
LN-15 Portable Wire Feeder	See Publication E8.60		
LN-23P Portable Wire Feeder	See Publication E8.90		
LN-25 Portable Wire Feeder	See Publication E8.100		
LN-10 Advanced Four Drive Roll Wire Feeder	See Publication E8.200		
DH-10 Dual Head Version of LN-10	See Publication E8.200		
Cobramatic Deluxe Wire Feeder	See Publication E8.300		
NA-3 Automatic Wire Feeder	See Publication E9.10		
NA-5 Automatic Wire Feeder	See Publication E9.30		
LT-7 Submerged Arc Tractor	See Publication E9.70		
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.

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THE LINCOLN ELECTRIC COMPANY

22801 St. Clair Ave., Cleveland, OH 44117-1199 • 216.481.8100 • www.lincolnelectric.com