

MULTI-WELD™ SYSTEM

MULTI-SOURCE AND MULTI-WELD 350



For On-Site Multiple Stick and Wire Welding

MULTI-WELD™ SYSTEM



The Multi-Weld™ System

Lincoln's award winning Multi-Weld System offers an entirely new and better way to build large structures like ships, water towers, buildings, oil platforms or any other structure where the welder must come to the weld.

The Multi-Weld System allows operators to have high performance welding and control right where they need it...at the arc. Lincoln's Chopper Technology™ is used to provide the best possible arc for either stick, wire welding or arc gouging. Small and portable, the Multi-Weld 350 goes with the operator for local control which optimizes procedures, and eliminates the need for costly and bulky control cables.

The Multi-Source™

As a primary source of power, the Multi-Source eliminates many of the cable problems found at other job sites by providing a single weld cable that distributes the power. The Multi-Source may be centrally located to feed a few individual Multi-Weld 350s, or as many as 20 or more systems!

For a cleaner, safer job site, the high voltage input power to the Multi-Source can be kept away from high traffic areas. One low voltage cable, 80 volts DC, is brought from the Multi-Source to one or more "distribution boxes" where the welding will be done. The

Multi-Weld 350s are then simply "plugged-in" to the distribution box.

No need to clutter the job site with additional welding cables, power cables and control cables.

The Multi-Weld™ 350

Simply speaking, the Multi-Weld 350 packs a lot of power into a compact system. The Multi-Weld 350 is a 350 amp, 100% duty cycle DC+ welder capable of CV-wire, CC-stick or arc gouging. Multi-Weld 350s may be used singly or paralleled for 700 amps of superior arc gouging power!

ADVANTAGE LINCOLN

Simple, Easy to Use System

- No control cables. Single weld cable output from the Multi-Source to a few or several Multi-Weld 350s.
- Controls are located close to the operator for quick access.
- Each Multi-Weld 350 has easy to use controls and a large control knob designed for gloved hands. Two large, bright digital meters for accurate reading of amps and volts.
- Digital meters show preset values before welding and actual values while welding. Memory holds the values for 5-seconds after welding stops.
- Additional controls for hot start and arc force behind the hinged door of the Multi-Weld 350.

High Performance Welding

- Chopper Technology™ for quality welds with instant control of the arc for superior welding results.
- Constant voltage (CV) for MIG or flux-cored wire welding.
- Constant current (CC) for stick welding or arc gouging.
- Additional stick welding controls, behind a hinged door, include hot start, arc force and selection between E7018 and E6010 type electrodes.
- Arc gouging capability with a single Multi-Weld 350 and up to 5/16" electrode, or with paralleled units for up to 700 amps of power using a 3/8" electrode.
- Highly efficient design uses less than half the power of other grid systems.
- Independent arcs. Starting or stopping one Multi-Weld doesn't effect the welding of the others.

Expandable System

- Use as many arcs as you need for the job.
- One Multi-Source can simultaneously power up to:
 - 4 welders — .052" flux-cored wire @ 315A, 29V, 100% operating factor.
- (or) 5 welders — .045" flux-cored wire @ 255A, 29V.
- (or) 6 welders — 3/16", 7018 stick @ 225A, 28V.
- (or) 10 welders — 1/8" 7018 stick @ 130A, 27V.

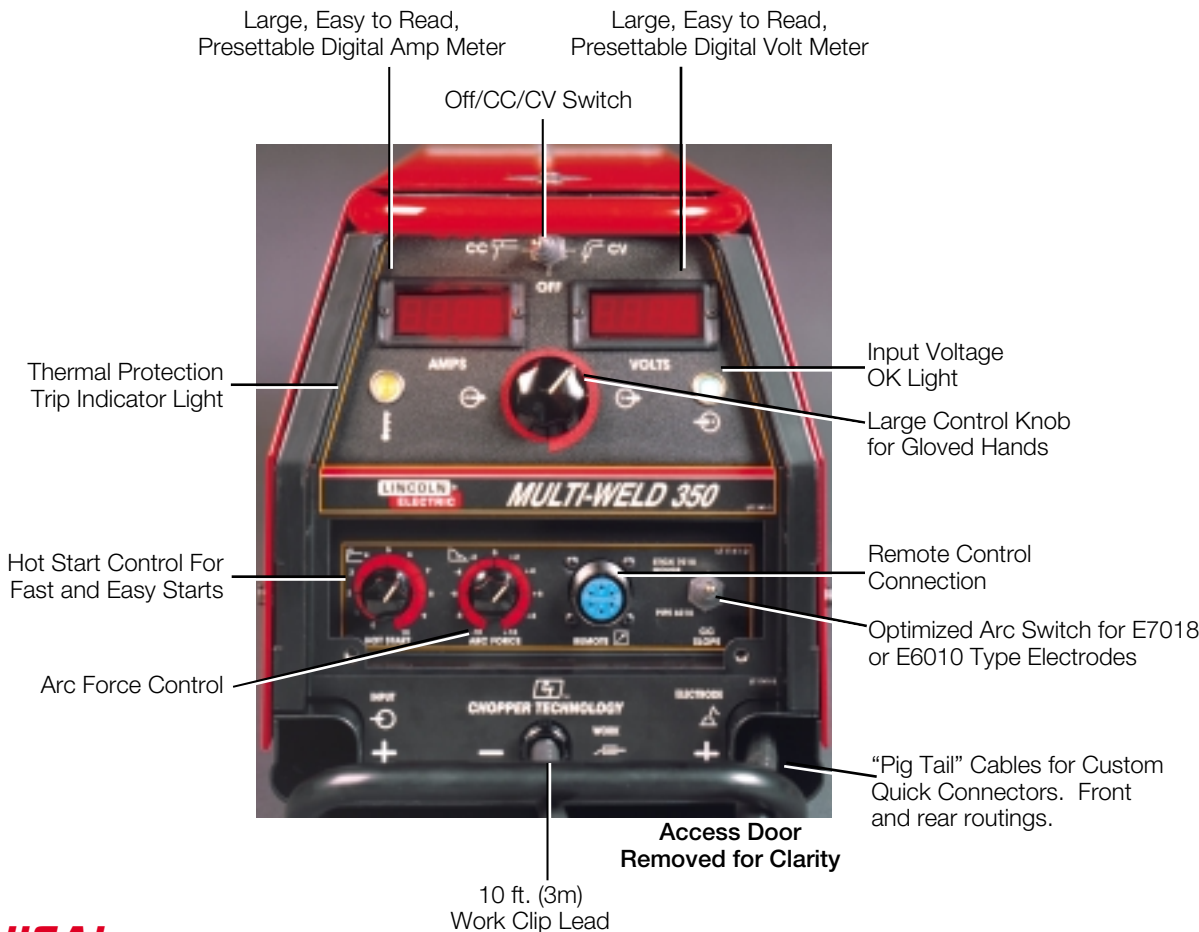
Robust Design

- The stainless steel Multi-Source is designed for severe outdoor duty and corrosion resistance. Stainless steel fasteners & extra corrosion protection is used throughout the machine to ensure a long, trouble-free life. Rated for 122°F (50°C) ambient air temperature.

- The Multi-Weld 350 is capable of continuous operation at 350 Amps in 122°F (50°C) ambient air temperature.
- Convenient carrying handles and skids double as extra protection from abuse in the field.
- Sealed and potted controls, and printed circuit boards for environmental protection and long life.
- Thermostat and voltage overload protection on Multi-Source and Multi-Weld 350.
- Fan-As-Needed on Multi-Source and Multi-Weld 350.



A CLOSER LOOK



TECHNICAL SPECIFICATIONS

Product Name	Ordering Information	Input DC Voltage	Rated DC Output Amps/Volts/Duty Cycle	Input Amps at Rated DC Output (80V DC)	Preset Output Range	Weight	Dimension (H x W x L)
Multi-Weld 350	K1735-1	80V DC (50-113 Peak Range)	350A/34V/100% DC+	165	Volts 15-40 Amps 30-350 (Max. 78 OCV)	59 lbs. (27 kg)	11.6x10.0x21.5 in. (295x254x546 mm)

Product Name	Ordering Information	Input AC Voltage	Rated DC Output Power/Duty Cycle	Input Voltage/Input Frequency Input Amps at Rated DC Output			Weight	Dimension (H x W x L)
Multi-Source	K1752-1	380-415/ 440-460/ 550-575 3 Phase 50-60 Hz	40 KVA/100% @ 80V DC (max)	400V/60 Hz 98A	460V/60 Hz 83A	575V/60 Hz 69A	992 lbs. (450 kg)	31x22x40 in. (787x559x1016 mm)
			36 KVA/100% @ 80V DC (max)	415V/50 Hz 99A	440V/50 Hz 79A	550V/50 Hz 66A		



Loading Multi-Weld 350 machines and Commander 500 on job site.

"We first purchased the Multi-Weld System because of power concerns in our shop - we were constantly adding transformers for additional power. Now, we have power sources that run many individual Multi-Weld 350 units off of each unit. This means that we have our fitters stick welding and tacking assemblies in one area of the shop while our fabricators are flux-cored welding in another area -- all off the same power source without experiencing any interference or drops in voltage."

Lee Roth
Quality Control Manager
Helmark Steel Inc. and
Falcon Steel Company

SYSTEM SELECTION

How Many Kilowatts Does Your Process Use?

Description	Diameter	Process	Kilowatts Used*
Flux-Cored Wire FCAW-GS	.035	300 ipm WFS, 130A, 24V	3.4
	.035	600 ipm WFS, 195A, 30V	6.4
	.045	300 ipm WFS, 185A, 28V	5.7
	.045	500 ipm WFS, 255A, 29V	8.1
	.052	250 ipm WFS, 210A, 26V	6.0
	.052	450 ipm WFS, 315A, 29V	10.4
	1/16	200 ipm WFS, 255A, 26V	7.3
		350 imp WFS, 350A**, 29V	11.2
MIG Wire GMAW	.035	150 ipm WFS, 120A, 19V	2.5
	.035	250 ipm WFS, 175A, 22V	4.2
	.045	125 ipm WFS, 145A, 19V	3.0
	.045	200 ipm WFS, 200A, 21V	4.6
Stick (7018) SMAW (7024) (6010)	1/8	130A, 27V	3.9
	3/16	225A, 28V	6.9
	3/16	260A, 27V	7.7
	1/8	120A, 36V	4.7
		NOTE: E6010 stick electrodes require higher voltages to "whip" properly. Higher voltage power sources like the Multi-Source are recommended for best welding performance.	
Air Carbon Arc Gouging	1/4	350A**, 34V	13.1
	3/8	700A**, 34V	26.2
		NOTE: Requires two Multi-Weld 350s in parallel.	

NOTE: * Kilowatts used = $\frac{\text{Amps} \times \text{Volts}}{1000} \div .91 \text{ Efficiency} = \text{KW input to Multi-Weld 350}$

** Maximum Rated Output of Multi-Weld 350

SYSTEM SELECTION (CONT.)

System selection is determined by kilowatts available on the power source. The Lincoln Multi-Source is recommended for optimum performance.

Note: For maximum output, set power source on "Constant Current" and select maximum output. "Constant Voltage" power sources and settings provide too low of voltage for proper performance.

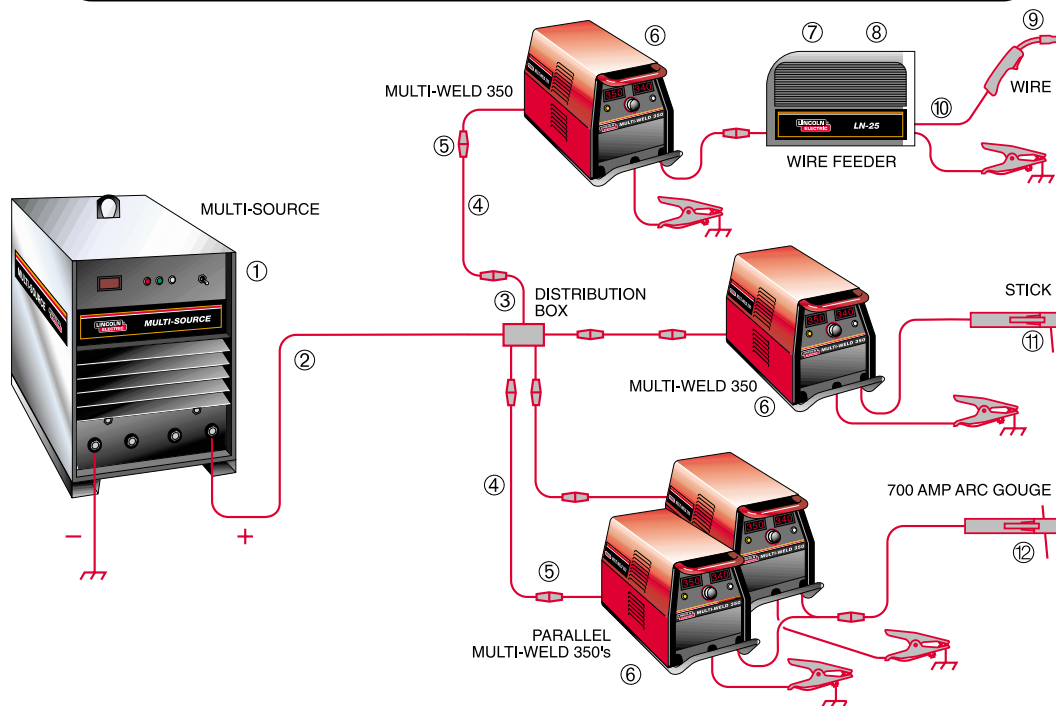
Power Source/Kilowatts Available

Power Source	Kilowatts Available @80V Output
Multi-Source	40

Power Source	Kilowatts Available @60V Output
R3R-400	12
R3R-500	12
TM-500	14
DC-600	15
DC-655	36
DC-1000	30
DC-1500	94
Classic II	11
SAE-400	22
Commander 300	11
Commander 400	11
Commander 500	14

The following is a typical Multi-Weld system setup.

Item No.	Product Name	Quantity	Ordering Information
1	Multi-Source	1	K1752-1
2	Input Cable 4/0 - 100 ft.	1	L-4/0-100
3	Distribution Box	1	K1736-1
4	Input Cable, 1/0 - 25 ft.	4	L-1/0-25
5	Welding Cable Connectors		
	Twist-Mate Male Connector	12	K852-70
	Twist-Mate Female Connector	12	K1759-70
6	Multi-Weld 350s'	4	K1735-1
7	LN-25	1	K449
8	.045-.052 Drive Roll Kit	1	KP653-052C
9	Magnum® 400 Gun & Cable Assembly (15 ft.)	1	K471-2
10	Gun Connector Kit	1	K466-1
11	Stick Electrode Holder	1	EH300-HD
12	Air Carbon Arc Gouging Torch	1	Alternate Supplier



PROCESS CAPABILITIES

The Multi-Weld 350 is a high performance DC+ welding power source. It is capable of the following processes:

Process	Electrode Wire/Stick	Electrode Polarity	Shielding Gas
Mild Steel FCAW Gas-Shielded Wire	.045" Outershield® 71M and MC-710	Positive (DC+)	CO ₂ or Blended
Mild Steel FCAW Self-Shielded Wire	.068" - 3/32" Innershield® NR-305 and NS-3M Only	Positive (DC+)	None Required (Self-Shielded)
Hardfacing Self and Gas-Shielded	.045 - 5/64" Lincore®	Positive (DC+)	As Required
Steel or Stainless SMAW, Stick	3/32" - 1/4" Jetweld® 7018 and Fleetweld® 6010	Positive (DC+)	None Required (Stick Electrode)
Mild Steel or Stainless MIG	.025" - .052" Super Arc™ L-50 and L-56 and Blue Max™	Positive (DC+)	CO ₂ or CO ₂ Ar Blended or Tri Mix
Aluminum MIG	3/64" - 1/16" SuperGlaze™ 4043 and 5356	Positive (DC+)	100% Argon
Air Carbon Arc Gouging	5/32" - 5/16"	Positive (DC+)	Compressed Air

AVAILABLE OPTIONS

Distribution Box

Makes connecting up to 10 Multi-Weld 350s quick and easy. Contains copper bus bar for connecting multiple "pig-tails". Four "pig tails" included.

Order K1736-1



Welding Cable Connectors

Twist-Mate™ plug for fast connection of additional Multi-Weld 350s.

Twist-Mate male plug for 1/0-2/0 (50-70 mm²) cable, up to 350 amp capacity. **Order K852-70.**

Twist-Mate male plug for 2/0-3/0 (70-95 mm²) cable, up to 400 amp capacity. **Order K852-95.**



Twist-Mate female plug for 1/0-2/0 (50-70 mm²) cable, up to a 350 amp capacity. **Order K1759-70.**

Twist-Mate female plug for 2/0-3/0 (70-95 mm²) cable, up to a 400 amp capacity. **Order K1759-95.**



Remote Output Control

Provides 25 ft. or 100 ft. (7.5m or 30m) of remote output control. Connects to 6-pin receptacle on front of Multi-Weld 350.

Order K857 - 25 ft. cable.

Order K857-1 - 100 ft. cable.



LN-25 Wire Feeder

The LN-25 is perfect for use with the Multi-Weld 350. It is designed to run "across-the-arc" with no control cables. This portable wire feeder offers constant wire feed speed in a rugged case. For more information, see literature E8.100. **Order K449**



MULTI-WELD SYSTEM ORDER FORM

PRODUCT DESCRIPTION	ORDER NUMBER	QUANTITY	PRICE
Multi-Weld 350 (80V DC 50-113 Peak Range)	K1735-1		
Multi-Source (380-415/440-460/550-575/3/50/60)	K1752-1		
Input Cable 4/0 - 100 ft.	L-4/0-100		
Distribution Box	K1736-1		
Input Cable, 1/0 - 25 ft.	L-1/0-25		
Welding Cable Connectors			
Twist-Mate Male Connector, 350 amp capacity	K852-70		
Twist-Mate Male Connector, 400 amp capacity	K852-95		
Twist-Mate Female Connector, 350 amp capacity	K1759-70		
Twist-Mate Female Connector, 400 amp capacity	K1759-95		
LN-25	K449		
.045-.052 Drive Roll Kit	KP653-052C		
Magnum [®] 400 Gun & Cable Assembly (15 ft.)	K471-2		
Gun Connector Kit	K466-1		
Stick Electrode Holder	EH300-HD		
Air Carbon Arc Gouging Torch	Alternate Supplier		
Options			
Remote Output Control			
-with 6 pin MS-type connector and 25' cable	K857		
-with 6 pin MS-type connector and 100' cable	K857-1		
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 these types of fabrication methods and service requirements.



THE WELDING EXPERTS

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