

OPTIMARC® CV/CC 505

Multi-Process-Reliability-Portability

The digitally controlled OPTIMARC® CV/CC 505 provides constant voltage (CV) / constant current (CC) output for heavy duty welding applications delivering superior welding performance and faster response to changes at the arc. It is an ideally suited for fabricating with MIG and Flux Cored arc welding processes with 1.0mm to 1.6mm diameter solid and flux core welding wires. It is also ideal for use on SMAW with up to 6mm electrodes.

Take advantage of this inverter-based power source to achieve high input power factor ratings for real savings on your electric bills and decrease your welding costs.

Heavy fabrication welding operations will appreciate the broad multi-process performance of the CV/CC505-featuring robust stick, MIG and flux-cored wire welding as well as precision Touch-start TIG performance.

The machine can be operated on generator power which makes it a perfect welder for the field welding jobs using stick and self-shield wires.



Processes

GMAW, FCAW, GTAW (TIG), SMAW (STICK)

Description

Output **CV** **CC** **DC** Input **3** **50/60**
PHASE **Hz**

Suitable Wire Feeders

LWF®-32GS, LWF®-34GS, LN-25PRO

Available Accessories

[Requirements will vary based on process to be used]

Interconnection Cable Assembly (Includes control cable, welding cable and gas hose)
 Work Cable Assembly (with earth clamp)
 MIG Welding Torch
 Gas regulator / flow meter
 TIG Welding Torch
 Welding Cable Assembly (with electrode holder)
 Remote Output Controller

Lincoln Advantage

- Synergic function, preset voltage is matched with current automatically. Both current and voltage are pre-settable
- Light weight and Portable - easy to move
- Toughness. Test to strict IP 23 Classifications-designed for "Real" industrial conditions
- "Made To Last" PC Boards
 - ▲ "Trayed & Potted" PCB's filled with epoxy double locked and environmentally protected wiring harness connectors
 - ▲ Boards are carefully located to provide maximum protection from the environment
- A five position switch for welding process mode selection enabling the operator to easily select his chosen welding output for his specific welding application
- Full remote and multi-process capability-Stick, Touch-Start TIG, MIG & Flux-cored
- Lincoln Electric's latest generation of worldwide inverter technology for maximum reliability
- Unique low power consumption design with 85% efficiency with a high 0.94 power factor
- Touch-Start TIG for easy to achieve great arc starts minimizing tungsten contamination
- Digital Meters
 - ▲ Provide accurate weld parameter readings which are retained after welding
 - ▲ Allow auto fault diagnostic display
- 5-500 Amp output range for all recommended processes which is low enough for TIG welding on thin sheet metal and robust enough for stick welding with 6 mm electrode
- Sturdy Easy Access Front Panel door protects multi-pin control socket and weld terminals

TECHNICAL SPECIFICATIONS

Product Name	Product Number	Input power	Rated output Current/Voltage/Duty cycle	Power input at rated output [KVA]	Output range	Dimensions H x W x D [mm]	Net Weight [kg]
OPTIMARC® CV/CC 505	K60169-1	380V-415V[±10%] /3/50 or 60 Hz	SMAW 500A/40V/60% 390A/35.6V/100%	23 @ 60%	20.6-40V 15-500A	540 x 340 x 800	47
			GMAW 500A/39V/60% 390A/33.5V/100%		16-39V 50-500A		
			GTAW 500A/30V/60% 390A/25.6V/100%		10.2-30V 5-500A		

A CLOSER LOOK



Front Panel

- | | |
|--------------------------------------|-------------------------------------|
| 1. GAS SELECTION | 11. CRATER VOLTAGE |
| 2. WELDING MODE SELECTION | 12. CRATER CURRENT |
| 3. WIRE DIAMETER SELECTION | 13. HOT START |
| 4. ON/OFF POWER SWITCH | 14. ARC CONTROL |
| 5. CONTROL SWITCH | 15. LOCAL OUTPUT CONTROL |
| 6. THERMAL INDICATOR | 16. NEGATIVE OUTPUT STUD |
| 7. 2-STEP AND 4-STEP SELECTION | 17. POSITIVE OUTPUT STUD |
| 8. DIGITAL INDICATION VOLTAGE METER | 18. 6-PIN AMPHENOL CONNECTOR |
| 9. SYNERGIC | 19. 6-PIN LWF WIRE FEEDER CONNECTOR |
| 10. DIGITAL INDICATION CURRENT METER | 20. STATUS INDICATOR |

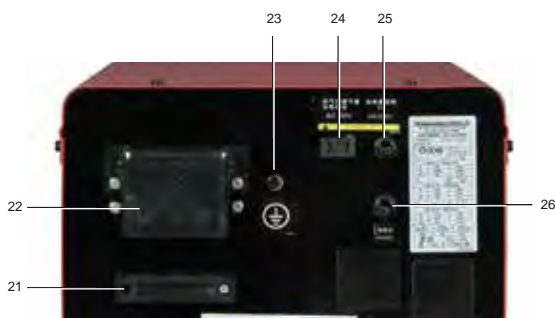
(Auto fault detection appears on 1. Ammeter & 2. Voltmeter)

*1 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.

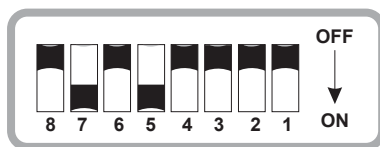
*2 Variable Arc Control

Adds or reduces inductance (arc energy), particularly for short-circuit transfer mode. Arc Control increases 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.



Rear Panel

21. INPUT CABLE HOLDING BRACKET
22. INPUT BOX
23. GROUND LEAD CONNECTION
24. AUX. VOLTAGE RECEPTACLE
25. FUSE AND FUSE HOLDER
26. FUSE AND FUSE HOLDER



DIP switches default setting position ex-work

"DIP" switches located on the internal PCB allow you to program the machine to perform as you want!

- ① ON = PREFLOW
- ② ON = LONG CABLE WELD MODE (Above 20 meters)
- ③ ON = CRATER REPEAT MODE
- ④ ON = TEST MODE
- ⑤ ON = SYNERGIC
- ⑥ ON = FAST RUN-IN
- ⑦ ON = 24V FEEDER APPLICATION
- ⑧ FEEDER SPEED CALIBRATION

LWF® Wire Feeder

	Order Number	Type	Description
LWF® wire feeder	K60137-1	LWF®-32GS	Two rollers drive, drive structure and wire reel protected, Euro style connection
	K60137-3	LWF®-34GS	Four rollers drive, drive structure and wire reel protected, Euro style connection
	K60137-9	LWF®-34GS	Four rollers drive, drive structure and wire reel protected, Asia style connection
Euro welding gun adaptor	KP61108-2	Euro style welding gun adaptor	Connect Euro style gun and Asia style wire feeder
Wheels*	KP61858-12	Front wheel	With brake
	KP61858-13	Back wheel	Without brake



LWF®-32GS Euro-style connection



LWF®-34GS Euro-style connection



LWF®-34GS Asia-style connection



Euro gun adaptor

Remarks:

* Wheels is not included in LWF wire feeder, it is optional.

INTERCONNECTION CABLES (includes welding cable, control cable and gas hose/water hose)

Product No.	Description	Product No.	Description	Product No.	Description
K60010-50-2M	Air cooled, 2M, 50mm ²	K60010-70-2M	Air cooled, 2M, 70mm ²	K69047-70-2M	Water cooled, 2M, 70mm ²
K60010-50-5M	Air cooled, 5M, 50mm ²	K60010-70-5M	Air cooled, 5M, 70mm ²	K69047-70-5M	Water cooled, 5M, 70mm ²
K60010-50-10M	Air cooled, 10M, 50mm ²	K60010-70-10M	Air cooled, 10M, 70mm ²	K69047-70-10M	Water cooled, 10M, 70mm ²
K60010-50-15M	Air cooled, 15M, 50mm ²	K60010-70-15M	Air cooled, 15M, 70mm ²	K69047-70-15M	Water cooled, 15M, 70mm ²
K60010-50-20M	Air cooled, 20M, 50mm ²	K60010-70-20M	Air cooled, 20M, 70mm ²	K69047-70-20M	Water cooled, 20M, 70mm ²
K60010-50-30M	Air cooled, 30M, 50mm ²	K60010-70-30M	Air cooled, 30M, 70mm ²	K69047-70-30M	Water cooled, 30M, 70mm ²
K60010-50-40M	Air cooled, 40M, 50mm ²	K60010-70-40M	Air cooled, 40M, 70mm ²	K69047-70-40M	Water cooled, 40M, 70mm ²
KP61156	Control Cable Socket				

LN-25 PRO WIRE FEEDERS

Product Name	Product Number	Input Power	Power Control
LN-25 PRO Standard	K2613-1	15-110VDC	Across the Arc
LN-25 PRO Extra Torque	K2613-2	15-110VDC	Across the Arc
LN-25 PRO Dual Power	K2614-1	15110VDC / 24-42VAC	Control Cable or Across the Arc
LN-25 PRO Pipe	K2614-5	15-110VDC	Across the Arc
Remote Controller, 8M	K60030-8M		
Remote Controller, 15M	K60030-15M		
Remote Controller, 30M	K60030-30M		
Welding Cable Assembly, 50mmx10M	K60031-50-10M		
Welding Cable Assembly, 50mmx30M	K60031-50-30M		



LN - 25 PRO



Remote Controller

MIG WELDING TORCH

	Product No.	Specification
LG351C air cooled MIG Welding Torch	K60111-3	350A@60% CO ₂ , 300A@60% Ar+CO ₂ , 3M, Asia Adaptor
	K60111-4	350A@60% CO ₂ , 300A@60% Ar+CO ₂ , 4M, Asia Adaptor
	K60111-5	350A@60% CO ₂ , 300A@60% Ar+CO ₂ , 5M, Asia Adaptor
	K60111-3E	350A@60% CO ₂ , 300A@60% Ar+CO ₂ , 3M, Euro Adaptor
	K60111-4E	350A@60% CO ₂ , 300A@60% Ar+CO ₂ , 4M, Euro Adaptor
	K60111-5E	350A@60% CO ₂ , 300A@60% Ar+CO ₂ , 5M, Euro Adaptor
LG501C air cooled MIG Welding Torch	K60110-3	500A@60% CO ₂ , 420A@60% Ar+CO ₂ , 3M, Asia Adaptor
	K60110-4	500A@60% CO ₂ , 420A@60% Ar+CO ₂ , 4M, Asia Adaptor
	K60110-5	500A@60% CO ₂ , 420A@60% Ar+CO ₂ , 5M, Asia Adaptor
	K60110-3E	500A@60% CO ₂ , 420A@60% Ar+CO ₂ , 3M, Euro Adaptor
	K60110-4E	500A@60% CO ₂ , 420A@60% Ar+CO ₂ , 4M, Euro Adaptor
	K60110-5E	500A@60% CO ₂ , 420A@60% Ar+CO ₂ , 5M, Euro Adaptor
SN 510 Water cooled MIG Welding Torch	K60163-3E	500A@60% CO ₂ , 450A@60% Ar+CO ₂ , 3M, Euro Adaptor
	K60163-4E	500A@60% CO ₂ , 450A@60% Ar+CO ₂ , 4M, Euro Adaptor
	K60163-5E	500A@60% CO ₂ , 450A@60% Ar+CO ₂ , 5M, Euro Adaptor

RECOMMENDED OPTIONS



STICK OPTIONS:

Electrode cable with holder

For stick welding, includes electrode cable with lug, and electrode holder, 500 Amp capacity

Order: K60057-70-3M 70mm² / 3M
 K60057-70-5M 70mm² / 5M
 K60057-70-10M 70mm² / 10M



TIG OPTIONS:

TIG Torch

WP-26V Two Cable Torch

Air-Cooled 200Amp, 2pcs, 12.5 or 25 ft, 60% duty cycle

Order: K60056-1 12.5ft
 K60056-2 25ft



Remote Output Control

Consists of a control box with choice of two cable length. Permits remote adjustment of output

Order: K857 25ft
 K857-1 100ft



Work Cable With Clamp

Used to connect work piece

Order No:
 K60027-50-4M Work cable with clamp, 50mm², 4M
 K60027-70-4M Work cable with clamp, 70mm², 4M



CO₂, Gas Regulator/Flow Meter

[Inlet G5/8"-14, Outlet M16X1.5/Ø8]

Includes CO₂ flow meter and CO₂ heater

Order No.:
 K60012-4-220



Argon regulator/Gas flowmeter

[Inlet G5/8"-14, Outlet M16X1.5/Ø8]
 Includes cylinder pressure gauge,
 argon flow meter

Order no:
 K60012-5



Water Cooler

Order Number: K60116-1



Tools Box

Order Number: K60117-1



Cart

Order Number: K60115-1

Swivel

Order Number: 7FL15710-1

Order Number	Type	Description
KP61858-1-0810	0.8/1.0 mm	Rollers for solid wire
KP61858-1-1012	1.0/1.2 mm*	Rollers for solid wire
KP61858-1-1216	1.2/1.6 mm	Rollers for solid wire
KP61000-14R	1.2/1.4 mm	Rollers for flux-cored wire
KP61000-16R	1.2/1.6 mm	Rollers for flux-cored wire
KP61000-20R	1.6/2.0 mm	Rollers for flux-cored wire
KP63315-5	inner dia. 1.6 mm	Outlet guide for Euro style, two rollers drive, 0.8/1.0 wire
KP61858-2-20*	inner dia. 2.0 mm	Outlet guide for Euro style, two rollers drive, 1.0/1.2 wire
KP61858-2-24	inner dia. 2.4 mm	Outlet guide for Euro style, two rollers drive, 1.2/1.6 wire
KP63315-7	inner dia. 3.0 mm	Outlet guide for Euro style, two rollers drive, 1.6/2.0 wire
KP63315-6	inner dia. 1.6 mm	Outlet guide for Euro style, Four rollers drive, 0.8/1.0 wire
KP61858-42-20*	inner dia. 2.0 mm	Outlet guide for Euro style, Four rollers drive, 1.0/1.2 wire
KP61858-42-24	inner dia. 2.4 mm	Outlet guide for Euro style, Four rollers drive, 1.2/1.6 wire
KP63315-8	inner dia. 3.0 mm	Outlet guide for Euro style, Four rollers drive, 1.6/2.0 wire
KP61858-60-18	inner dia. 1.8 mm	Outlet guide for Asia style, Four rollers drive, 0.8/1.0 wire
KP61858-60-20*	inner dia. 2.0 mm	Outlet guide for Asia style, Four rollers drive, 1.0/1.2 wire
KP61858-60-23	inner dia. 2.3 mm	Outlet guide for Asia style, Four rollers drive, 1.2/1.6 wire
KP61858-60-30	inner dia. 3.0 mm	Outlet guide for Asia style, Four rollers drive, 1.6/2.0 wire
KP61858-11		Inlet guide
KP61858-45		Middle guide assembly-four rollers drive

Remarks:

The item with * is packed when delivery for each kind of wire feeder.

RECOMMENDED OPTIONS

Configuration recommendation-Air cooling

Order Number	Description
K60169-1	OPTIMARC CV/CC 505 power source
K60137-3	LWF®-34GS four rollers wire feeder with Euro style connection
K60110-3E	LG 501C welding gun with Euro style connection
K60010-70-2M	2m, 70mm ² ,air cooling interconnection cable
K60027-70-4M	4m,70mm ² grounding cable
K60012-4-220	CO ₂ gas flowmeter inlet G5/8"-14,outlet M16X1.5/Ø8
K60115-1	Welding trolley
7FL15710-1	Wire feeder swivel

Configuration recommendation-Water cooling

Order Number	Description
K60169-1	OPTIMARC CV/CC 505 Power source
K60137-3	LWF®-34GS Four rollers wire feeder with Euro style connection
K60163-3E	SN 510-3M Water cooling welding gun with Euro style connection
K69047-70-2M	2m, 70mm ² ,water cooling Interconnection cable
K60116-1	11L Cooler
K60027-70-4M	4m,70mm ² Grounding cable
K60012-4-220	CO ₂ gas flowmeter Inlet G5/8"-14,outlet M16X1.5/Ø8
K60115-1	Welding trolley
7FL15710-1	Wire feeder swivel

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 customers 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 not 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.

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The product performance data of this brochure and related attachments are from LINCOLN ELECTRIC application engineering laboratory.

Except for special instructions, experiments on welding machines are conducted in accordance with the general standard of IEC60974-1; experiments on welding consumables are conducted in accordance with the general standard of AWS; for specific applicable standards on welding consumables please refer to the product page.

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OPTIMARC® CV/CC 505 2020/03

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