

Next Generation of Ultimate Performance



SPEEDTEC® PULSE RANGE



LINCOLN®
ELECTRIC

NEXT GENERATION

Ultimate Performance

The Speedtec® 400SP and 500SP are third generation multi-process power sources offering superior quality welding with high efficiency processes which increase the productivity and are the next step in the future of professional welding.

The range is designed with the latest energy-saving inverter technology and rugged construction making them ready to work in even the most demanding environmental conditions.

Available in two versions – the 400SP and 500SP are paired with the advanced LF56D for more demanding applications. The new Coolarc® 60 cooler adds higher cooling efficiency, while the new four wheel cart with solid metal construction offers great functionality. A wide range of connection cables and accessories fit perfectly with all needs from most demanding welding applications in various segments.

The Speedtec platform is based on a digital communication system with build-in communications tools, such as ethernet or USB, allowing for accurate traceability and monitoring of your welding activities for outstanding welding performance.

Processes

GMAW, FCAW-G, FCAW-S, pulsed MIG, GTAW, SMAW, CAG and MIG brazing

Materials

Steel, stainless steel, low alloy steel and aluminium

Applications

General fabrication, heavy fabrication, structural, transportation, chemical processing, maintenance and repair and shipbuilding

Range

Speedtec 400SP® K14258-1

Speedtec 500SP® K14259-1

LF 56D K14336-1

Coolarc® K14297-1

Cart K14298-1



Excellent Productivity

- Speed Short Arc™ for faster welding with lower heat input.
- High Penetration Speed™ for deep penetration welding.
- Soft Silence Pulse™ reduces the noise and gives clearly better wetting for stainless steel.
- MechaPulse™ produces very high quality welds with rippled seam appearance.
- Production monitoring [Checkpoint]*.

Rugged Reliability

- High duty cycle multi-process power sources.
- Double-side fully potted PCB with superior resistance for dust, humidity, jerk or vibrations.
- Solid metal construction, rugged and very stable – ready for any industrial environment.

Superior Ergonomics

- Modular concept to build configuration for any requirements
- Ergonomics design make everyday welders work easier
- Innovative and intuitive user interfaces.
- Wide range of options and accessories.

* Requires purchase of a license key

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HIGH EFFICIENCY

Move to the Next Level of Professional Welding

Speed Short Arc™ (SSA™)

A semi-controlled short circuit mode which allows to shift globular behaviour using wire feed speed normally reachable only in pulse mode. The current values used in this mode are very different from those used in conventional "short arc" operation. Faster wire speeds require a medium current together with a large peak current in order to form and detach the droplet more quickly.



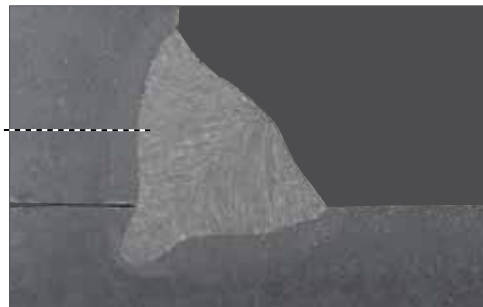
Soft Silent Pulse™ (SSP™)

This is a pulse transfer with a special waveform producing a soft and silent arc. The behaviour of the Soft Silent Pulse™ is very suitable for stainless steel application which requests the best wetting possible. Silence, because the noise of the arc is divided by two regarding a normal pulse mode what can be really appreciated when you have to weld in a confident area. Moreover the stability given by this transfer allows to weld in all positions and especially in vertical up without weaving when it is associated to a MechaPulse™ welding mode.



High Penetration Speed™ (HPS™)

HPS™ (High Penetration Speed™) is a special spray mode but with a focused arc offering higher penetration and combining two different main advantages: provides lower voltage and so lower energy; very accurate and dynamic regulation of the welding parameters. This association is able to carry out very high productivity with the optimal welding performance.



MECHAPULSE™

MECHAPULSE™ – GTAW appearance with GMAW weld bead with TIG appearance productivity*

- Increases travel speed (up 4x faster)
- Reduces heat input and distortion
- Eliminates in-line weaving
- Shorter training time
- Effortless welding in vertical up position
- Designed for Aluminium, Carbon and Stainless Steel, all thicknesses

* based on side by side comparison of MECHAPULSE™ and standard GTAW mode



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DATA COLLECTION

Connect to the World

With ethernet and USB compatibility.

CheckPoint®* – Data collection for your detailed analysis and quick decision making.

- Alerts
- Traceability (large quantities of weld statistics and monitor selected aspects of welding processes).
- Production Monitoring (to maximise productivity and quality of your welding operation).



USB Connectivity (with LF56D feeder)

- Fully system update and diagnostics (SnapShot).
- Transfer settings among machines.
- Simple welding data collection on USB (start time, average wire feed speed, average current, average voltage, arc time, welding mode/job number, job name).
- Weld quality data monitoring (data on feeder user interface screen or CSV file transfer).



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FLEXIBLE DESIGN



LF 56D



**SPEEDTEC®
400SP**
420A@100%



**SPEEDTEC®
500SP**
500A@60%



**CABLE
PACKAGE**



COOLARC® 60



**CART
4-WHEELS**



Item	Product	Product description	Part number (Air)	Part number (Water)
1	Power source	Speedtec® 400SP		K14258-1
		Speedtec® 500SP		K14259-1
2	Cable Package	Air 10 m	K14198-PG-10M	–
		Water 10 m	–	K14199-PGW-10M
3	Feeder	LF 56D		K14336-1
4	Cooler	Coolarc® 60	–	K14297-1
5	Cart	Cart 4 wheels		K14298-1

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MODULAR CONCEPT

Making the Welders Work Day Easier

Practical handle for effortless gripping even with gloves and safe movement of the machine



Ideal height for easy-to-view settings



Rotatable wire feeder swivel on the cart enabling rotation of the wire feeder and setting it in any position



Cable connections on front (standard) and back rear side (an option). All cable connections can easily be made without tools



Intermediate hose packages

- Heavy-duty protective hose and military-quality plugs
- Strain reliefs on both ends to keep connections well protected
- A wide range of lengths to choose (up to 30m), water or air

4 lifting eyes for easy hook-in and safe transportation

Rubber bumpers for feet protection



New Heavy Duty undercarriage features large wheels to effortlessly overcome obstacles such as cables or thresholds. Extremely reliable and stable, has passed incline stability tests on 15°. Easy manoeuvrability and small footprint.

Simple navigation even with welding gloves



Cable Management System for easy transportation of the whole welding system even with very long connection cable



Gun holder

Low gas cylinder entry makes loading very easy



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SUPERIOR ERGONOMICS

Packed with Great Features



Handy gun holder always at hand – ready to work



Dust-proof wire spool cover. Inspection window indicates level of wire spool. Simple and comfortable spool change. New locking system – spool cover stays always closed

Front UI protection cover keep your UI safe

Lifting eye for vertical and suspension operation. Also allows for safe and easy transportation

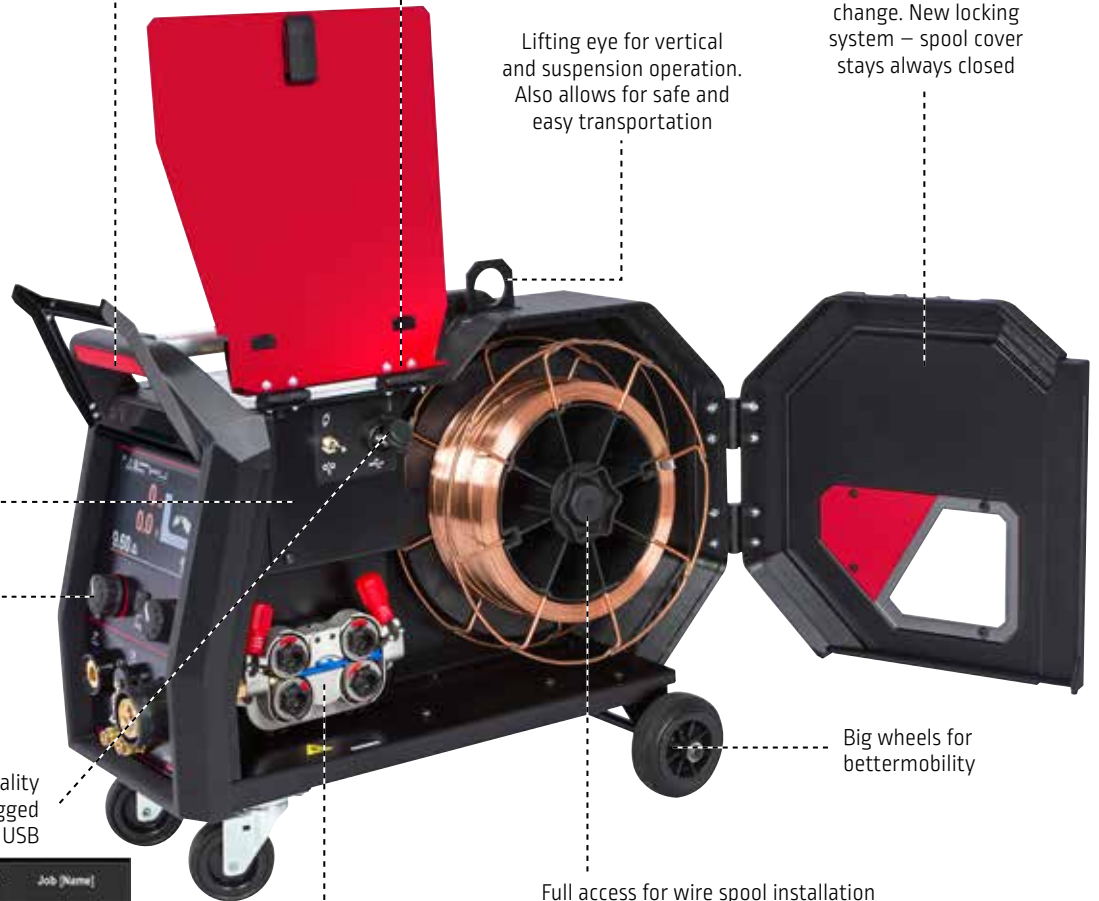


Flowmeter for shielding gas flow setting (optional). Allows for precise adjustment directly on site. Especially practical with long hose packages

New encoders for more precise adjustment

Clock and calendar. Weld quality data can also be monitored, logged and recorded using a USB

Big wheels for better mobility



Full access for wire spool installation

Professional wire feeding system features four driven wire feed rolls. Excellent wire feeding on every material. Permanent internal lights makes changing easier.

Start Time	Average WFS (m/min)	Average current [A]	Average voltage [V]	Arc Time [s]	Mode	Job	Job (Name)
26.09.2020 21:33	149	164	21.13	35	3	-	-
27.09.2020 19:53	149	165	21.23	23	3	-	-
27.09.2020 19:55	149	163	21.35	15	3	-	-
27.09.2020 19:59	149	163	21.16	32	3	-	-
27.10.2020 10:53	660	215	23.6	32	12	3	Welder 1
27.10.2020 10:55	660	218	23.55	33	12	3	Welder 1
27.10.2020 10:58	660	220	23.45	31	12	3	Welder 1
27.10.2020 11:02	660	214	23.56	32	12	3	Welder 1
27.10.2020 11:08	660	219	23.3	35	12	3	Welder 1
27.10.2020 11:12	431	140	20.4	33	12	-	-
27.10.2020 16:15	431	140	20.5	15	12	-	-
27.10.2020 16:18	431	140	20.3	14	12	-	-
27.10.2020 16:21	431	140	20.35	12	12	-	-
27.10.2020 16:25	431	140	20.5	14	12	-	-



Additional audio signals when adjusting the encoders and when any improper operation is selected. Training, advertising and other video displays now also include sound

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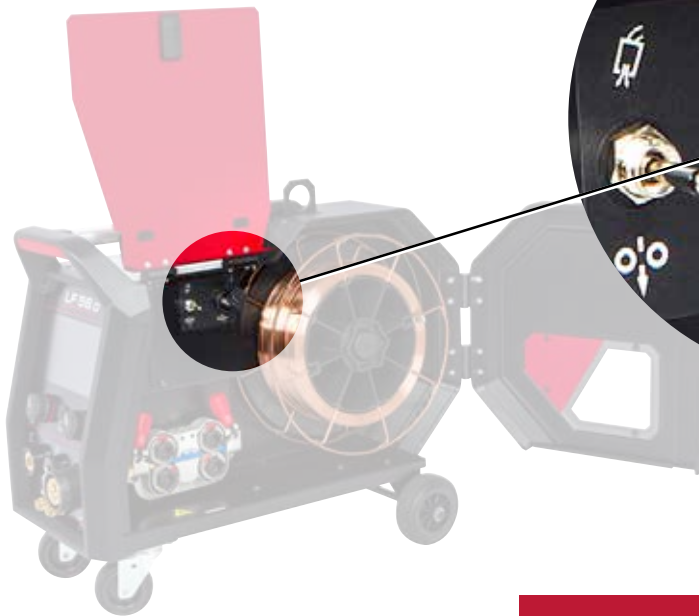
EASY COMMUNICATION

Innovative and intuitive interface

- Two controls, one button for easy navigation
- Icon language for key commands
- Easy process and settings selection
- MECHAPULSE™ for obtaining high-quality scaled weld bead
- ARCFX™ – joint visualisation
- Work point in material thickness (mm) / WFS / A
- Locking function / Limits / Memories / Jobs
- Interface available in many languages: English, German, French, Polish, Finnish, Spanish, Italian, Russian, Dutch, Romanian, Slovakian, Hungarian, Czech, Turkish, Portuguese



Simple navigation even when using welding gloves



Auto

Auto-settings

Preset parameters to increase productivity



USB connectivity

Easy software update and diagnostics, weld log for quality monitoring



Speaker

Product operation (adjusting the encoders or pressing the button) and errors signalled by a sound



New encoders

For more precise adjustment



Clock and calendar

Simple welding quality monitoring as weld log data recording on usb

178mm
COLOUR DISPLAY!



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PERFECT FEEDABILITY

Professional wire feeding system – robust and precise

- 4 individually driven rolls for extremely stable wire feeding for various wire types
- Aluminium housing for a long service life
- Big roll diameter (37 mm) for optimal wire feeding
- Simple, tool-free roll change
- Factory-fitted with rolls for 1.0 mm and 1.2 mm steel and stainless steel



Colour-coded for wire diameter differentiation

Steel	3-5
Stainless steel	
Braze	2.5-3.5
Flux cored	
Aluminium	1.5-2.5

Wire feeder pressure set-up

3-5	Steel
	Stainless steel
2.5-3.5	Braze
	Flux cored
1.5-2.5	Aluminium

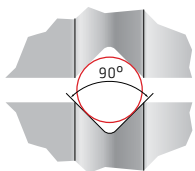


New locking system, quick exchange of roll and wire guides. Simple, tool-free roll change – just few steps

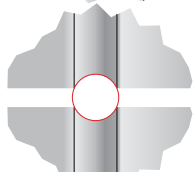
1. Unlock the roll fastener
2. Unlock pressure arm
3. Exchange the roll



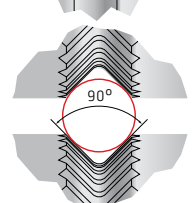
Individually adjustable contact pressure for the front and rear roll pair. Differently set-up for aluminium, steel, stainless steel, braze, flux cored wire



V-groove for stainless steel, steel



U-groove for aluminium



V-groove, knurled for flux cored wire

Roll Kit for aluminium wires	Product number
Roll Kit 1.0 / 1.2AT F137 4 rolls (red / orange)	KP14150-U10/12A
Roll Kit 1.2 / 1.6AT F137 4 rolls (orange / yellow)	KP14150-U12/16A
Roll Kit for solid wires	
Roll Kit 1.2 / 1.6VT F137 4 rolls (orange / yellow)	KP14150-V12/16
Roll Kit 0.9 / 1.1VT F137 4 rolls	KP14150-V09/11
Roll Kit for cored wires	
Roll Kit 1.2 / 1.6RT F137 4 rolls (orange / yellow)	KP14150-V12/16R
Roll Kit 1.4 / 2.0RT F137 4 rolls	KP14150-V14/20R

Connection for drum feed (optional). Less need to change wire spools saves time



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COOLARC® 60

- High cooling power 1.1kW@25°C
- Reservoir capacity 4.5 l
- Strong pump to support proper cooling (maximum pressure 0.47MPa)
- Protection class IP23



Additional water connections on the back (when the intermediate hose package is connected on the back)



Flow sensor ON-OFF switch handy during the filling procedure

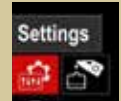


Three modes of operation available: AUTO/ON/OFF for better energy savings and extended service life

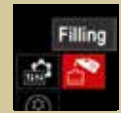
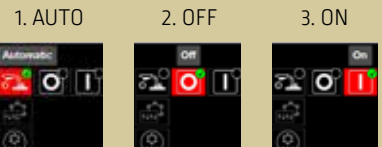
New Coolarc® 60 cooler fully controlled by power source



Cooler menu is available when cooler is connected



Settings – Three modes of operation available.



Filling procedure – step by step detail filling instruction



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TECHNICAL SPECIFICATIONS



Power Sources

Product	Product number	Primary voltage	Fuse size (A)	Max. input power (kVA)	Rated output (A) at +40°C		Welding voltage range (V)	Welding current range (A)	Open circuit voltage (peak)	Temperature range		EMC class	Weight (kg)	Dimensions W x L x D (mm)	Protection class
					100%	60%				Operating	Storage				
Speedtec® 400SP	K14258-1	400V/3Ph 50/60Hz ± 15%	25	18.1	420	-	15-45	20-420	65 Vdc	-10°C to +40°C	-25°C to +55°C	A	53.5	625 x 295 x 550	IP23
Speedtec® 500SP	K14259-1		32	25				500					20-500		



Wire Feeder – LF 56D (K14336-1)

Gun connection	Wire feed mechanism	Feed rolls diameter (mm)	WFS (m/min)	Filler wires diameter (mm)				Wire spool weight (max) (kg)	Wire spool diameter (max) (mm)	Maximum shielding gas pressure	Temperature range		EMC class	Weight (kg)	Dimensions W x L x D (mm)	Protection class
				Fe	Ss	Mc/Fc	Al				Operating	Storage				
Euro	4-rolls, All driven, single motor	37.2	1.5-22	0.8 to 1.6	0.8 to 1.6	0.9 to 1.6	1.0 to 1.6	18	300	0.5 MPa	-10°C to +40°C	-25°C to +55°C	A	17.7	302 x 642 x 516	IP23



Cooler – Coolarc 60 (K14297-1)

Cooling power @1l/min	Recommended coolant	Reservoir capacity (l)	Maximum pressure (MPa)	Temperature range		EMC class	Weight (kg)	Dimensions W x L x D (mm)	Protection class
				Operating	Storage				
1.1 kW @+25°C	FREEZCOOL	4.5	0.47	-10°C to +40°C	-25°C to +55°C	A	22	663 x 291 x 224	IP23



Cart – Cart 4 Wheels (K14298-1)

Max. gas cylinder diameter (mm)	Max. gas cylinder height (mm)	Front wheels diameter (mm)	Rear wheels diameter (mm)	Weight (kg)	Dimensions W x L x D (mm)	Other features
240	1,700	125	250	36	534 x 905 x 999	Low gas cylinder entry Rubber bumpers for feet protection 4 lifting eyes for easy transportation

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SPEEDTEC PACKAGES

Air Packages

- Speedtec Power Source
 - LF56 Wire Feeder
 - Interconnection Cable 10m
 - Cart Four Wheel
 - Work Return Lead (3m/95mm²)
 - Powercraft 360 G Gun (4m)
 - Flowmeter
 - Input Lead (5m)*
- *plug required to suit outlet 415/32A plug recommended

400SP Air Cooled K14258-1P
500SP Air Cooled K14259-1P



Water Packages

- Speedtec Power Source
 - LF56 Wire Feeder
 - Interconnection Cable (water) 10m
 - Cart Four Wheel
 - Work Return Lead (3m/95mm²)
 - Powercraft 500W Gun (4m) water cooled
 - Flowmeter
 - CoolArc 60 Water Cooler
 - Input Lead (5m)*
- *plug required to suit outlet 415/32A plug recommended

400SP Water Cooled K14258-1PW
500SP Water Cooled K14259-1PW



CUSTOMER ASSISTANCE POLICY

Lincoln Electric® business 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 to the extent permitted by law assumes no liability, 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. The provision of information or advice does not create, expand or alter this warranty. 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 this type of fabrication methods and service requirements. Subject to Change – This information is accurate to the best of our knowledge at the time of printing.

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