

Speedtec[®] 400SP / Speedtec[®] 500SP

Third Generation PULSE Range



Speedtec® 400SP 500SP



EXCELLENT PRODUCTIVITY



SUPERIOR ERGONOMICS



RUGGED RELIABILITY

SPEEDTEC® 400SP/500SP



Speedtec® 400SP 500SP

SPEEDTEC Product Evolution



1st Gen

- » MIG-M & Syn
- » TIG LIFT
- » STICK

2009



2nd Gen

- » MIG-M & Syn
- » MIG-Pulse
- » TIG LIFT
- » STICK, CAG
- » LACI (CheckPoint)

2014



3rd Gen

- » MIG-M & Syn
- » MIG-Pulse
- » MECHAPULSE
- » Short Speed Arc
- » High Penetration Speed
- » Soft Silent Pulse
- » TIG LIFT, TIG Pulse
- » STICK, CAG
- » LAN (CheckPoint)
- » Smart Cooler
- » ECO
- » 5 year warranty

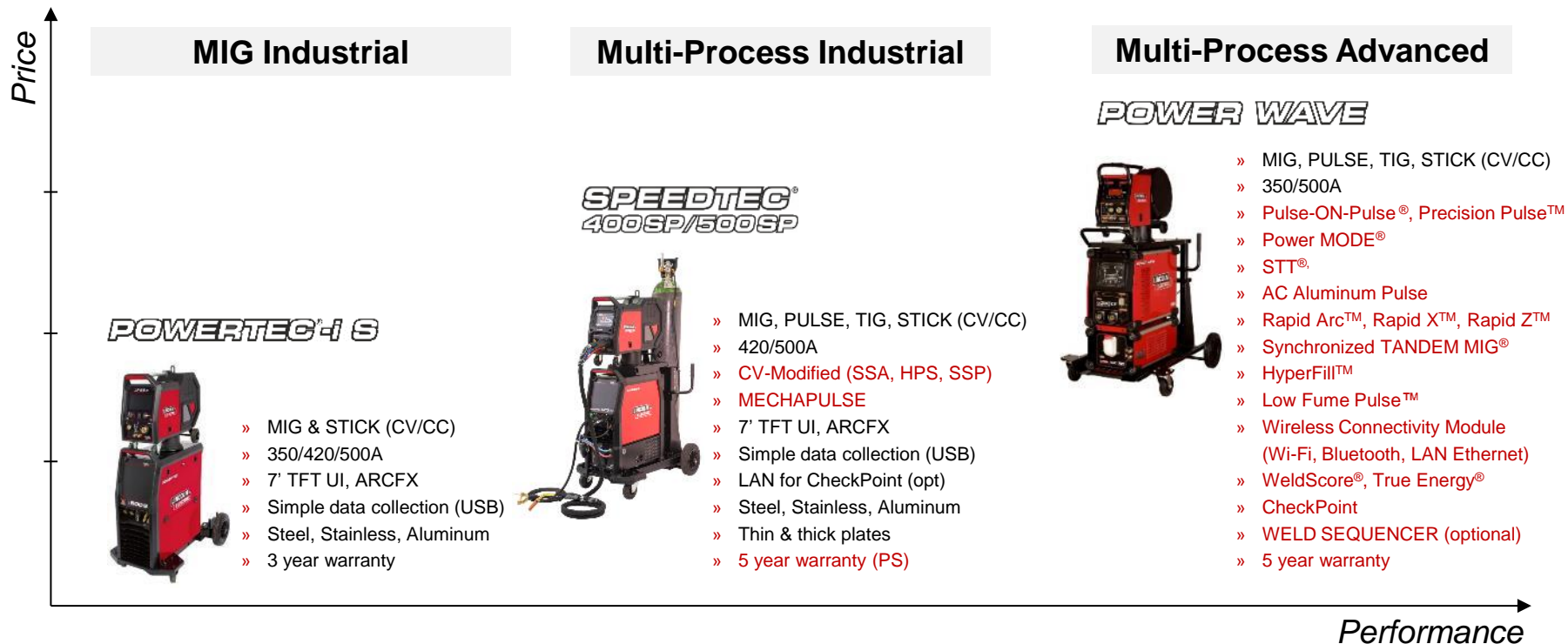
2021

LINCOLN
ELECTRIC

HIGHER
STANDARD.
2025 STRATEGY

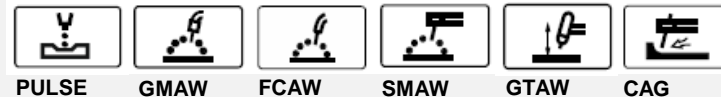
Speedtec® 400SP 500SP

SPEEDTEC Product Position



Speedtec® 400SP 500SP

Third Generation Multi-Process Power Sources



- Two standard models: **420A@100%** & **500@60%**
- Separate items with VRD enabled
- **Multi-Process:** GMAW (Manual & Synergic), FCAW, PULSE, SMAW (DC), GTAW (DC & DC Pulse), CAG
- **New High Efficiency Processes:**
 - **Speed Short Arc (SSA™)** modified CV mode, extended WFS in short arc which avoid globular mode & lower heat input,
 - **Soft Silence Pulse (SSP™)** modified **quiet** Pulse mode,
 - **High Penetration Speed (HPS™)** modified CV spray, lower energy and higher penetration.
- **MECHAPULSE™** function (with LF56D feeder) for high quality welds with rippled seam appearance.
- 3Ph 400V±15% (340-460V), 50/60Hz, OCV 65Vdc
- ECO Design: Efficiency >85% & Idle Power <50W
- Recommended fuse size: 25A (400SP) & 32A (500SP)
- Dimension HxWxL: 550 x 295 x 625mm
- Weight: 53,5kg (400SP); 54,5kg (500SP)
- Industrial grade IP23



K14258-1
SPEEDTEC® 400SP
420A@100%
K14258-2
SPEEDTEC® 400SP (VRD)



K14259-1
SPEEDTEC® 500SP
420A@100% / 500A@60%
K14259-2
SPEEDTEC® 500SP (VRD)

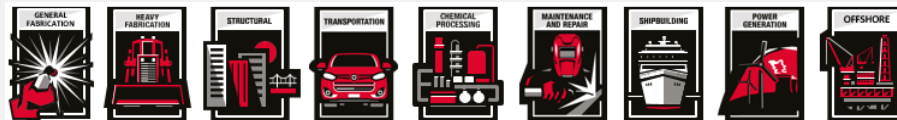
Included as standard:

- Input cable 5m without plug,
- Ground cable with clamp 3m/95mm²
- Gas hose 2m
- USB with Instruction Manual
- Spare fuses (2x 2A / 1x6,3A / 1x12,5A)



Speedtec® 400SP 500SP

Rugged Reliability – INDUSTRY COMMANDER



- **New industrial design:** very solid, metal made construction
- Focus on ergonomics
- Easy access to all components inside, easy maintenance and servicing.
- Designed to serve most industry segments, ready to use anywhere.
- **Double-side fully potted PCB**
- Inverter engine technology, high production efficiency
- Generator ready
- **ECO Friendly**, ready for 2023, automatic power-saving function:
 - Stand-by mode (level1) <39W
 - Shut-down mode (level2) <2,5W
- Intelligent F.A.N. (Fan As Needed) in the inverter
- **True HD** tested – made for the harsh environmental conditions
- Protection class IP23 for outdoor use
- **5 Years full parts and labor warranty ***



Cooling tunnel design components arranged to protect against dust and dirt

* Applies to the Speedtec power sources, 3 Years Standard Warranty +2 Years after registration:
www.lincolnelectric.com/LEExtranet/ProductRegistration/PRExtWarMain.aspx

INDUSTRY LEADING
5-YEAR WARRANTY*



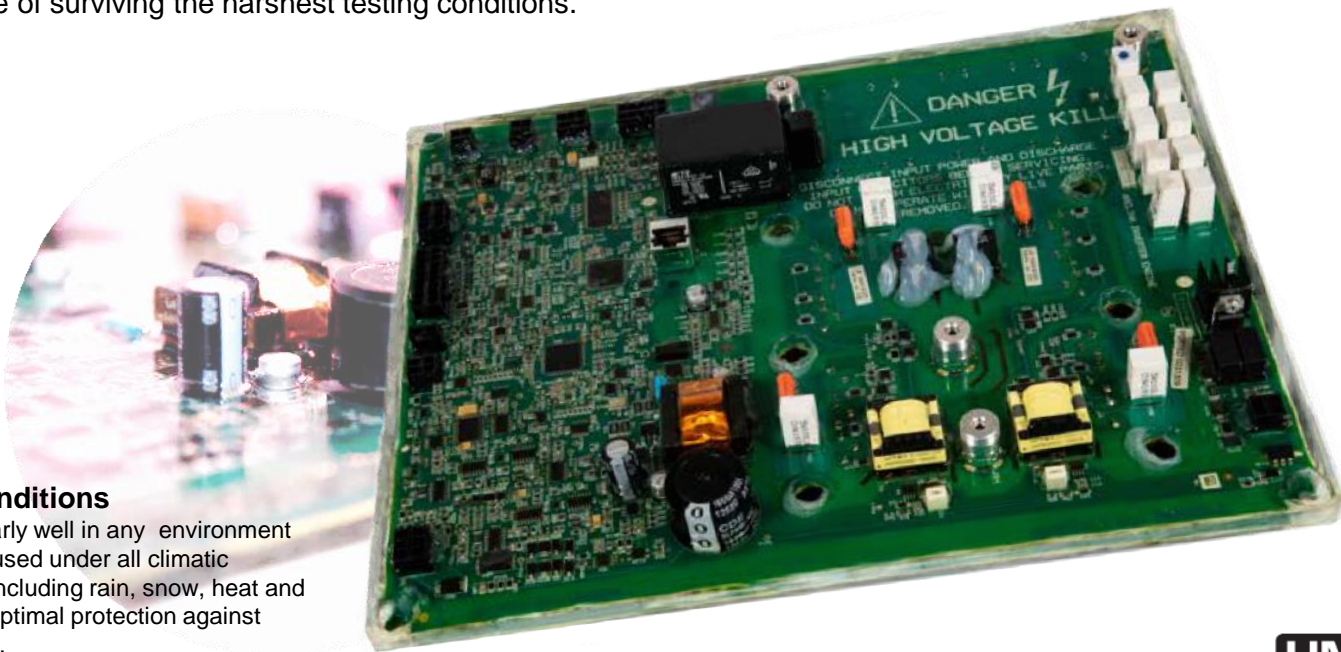
Speedtec® 400SP 500SP

Inverter Power Module

- **Machine heart** – Double-side fully potted PCB made at the Lincoln Electric Company.
- Fully encapsulated with vertical and inverted mounting position.
- Capable of surviving the harshest testing conditions.

Double-side fully potted PCB

High quality components covered on both sides with a thick layer of silicone to protect against dust and dirt which guaranteeing trouble-free operation and extended service life.



For all conditions

Fits particularly well in any environment and can be used under all climatic conditions (including rain, snow, heat and dusty) with optimal protection against metallic dust.

Globally unique! Most reliable solution!

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Speedtec® 400SP 500SP

Ready for tomorrow / ECO Design

New regulations obligatory date* is 2023

Key requirements:

- Reduced energy consumption (efficiency, idle power)
- Documentation requirements
- Aftersales services support



* Directive 2009/125/EC of the European Parliament and of the Council Publication in Official Journal 1.10.2019 - 2019/1784/EU

SPEEDTEC® 400SP/500SP

- Inverter technology – lower power consumption thanks to high efficiency **>85%**
- Idle power **<50W**
- Automatic power-saving modes & fan as needed (F.A.N.)
 - STANDBY mode (level1) **<39W**
 - SHUTDOWN mode (level2) **<2,5W**



STANDBY



SHUTDOWN



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Speedtec® 400SP 500SP

Modular Flexible Configurations



#	Item type	Item description	Item number (Air)	Item number (Water)
1	Power source	Speedtec® 400SP	K14258-1	
		Speedtec® 500SP	K14259-1	
2	Hose package	Air 1 m	K14198-PG	–
		Air 3 m	K14198-PG-3M	–
		Air 5 m	K14198-PG-5M	–
		Air 10 m	K14198-PG-10M	–
		Air 15 m	K14198-PG-15M	–
		Air 20 m	K14198-PG-20M	–
		Air 25 m	K14198-PG-25M	–
		Air 30 m	K14198-PG-30M	–
		Water 1 m	–	K14199-PGW
		Water 3 m	–	K14199-PGW-3M
		Water 5 m	–	K14199-PGW-5M
		Water 10 m	–	K14199-PGW-10M
		Water 15 m	–	K14199-PGW-15M
		Water 20 m	–	K14199-PGW-20M
Water 25 m	–	K14199-PGW-25M		
Water 30 m	–	K14199-PGW-30M		
3	Feeder	LF 52D	K14335-1	
		LF 56D	K14336-1	
4	Cooler	Coolarc® 60	–	K14297-1
5	Cart	Cart 4 wheels	K14298-1	
6	MIG guns	LGS2	see accessories	
7	Option	Gas flow meter KIT	K14175-1	
8	Option	Output connection KIT	K14337-1	



Speedtec® 400SP 500SP

LF52D & LF56D digital compatible feeders

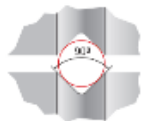
- Two feeders: **Advanced LF56D** (7" TFT) and **Standard LF52D** (LED)
- Rated output 500A@60%
- Input voltage 40Vdc
- **Four Rolls wire drive system, All driven**
- Wire Feed Speed range 1.5 ÷ 22 m/min
- Big spool 300mm, drum ready
- Lighting in feeder cabinet, inspection window
- Optional gas flow regulator KIT
- Euro gun connector, dinse socket for Stick and Gauging, water Quick Connectors
- Lincoln 12PIN remote socket on front (LF56D)
- Insulated lifting eye and MIG gun rest location on top
- Wheels in standard (Heavy Duty cart in option)
- Interconnection cable strain relief on the back side
- Protection rating IP23
- Weight: 17,7kg (LF56D) & 17kg (LF52D)
- Dimension HxWxL (mm): 516x302x642



LF56D & LF52D wire feeding system

Perfect Feedability

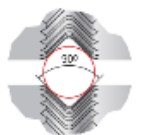
- Professional wire feeding system – robust and precise
- **4 individually driven rolls for extremely stable wire feeding for various wire types**
- Aluminum housing for a long service life
- **Big roll diameter (37mm) for optimal wire feeding**
- Color-coded for wire diameter indication, range 0.8-1.6mm wires
- Simple, tool-free roll change
- Factory-fitted with rolls for 1.0mm and 1.2mm steel and stainless steel



V-groove
for stainless steel, steel

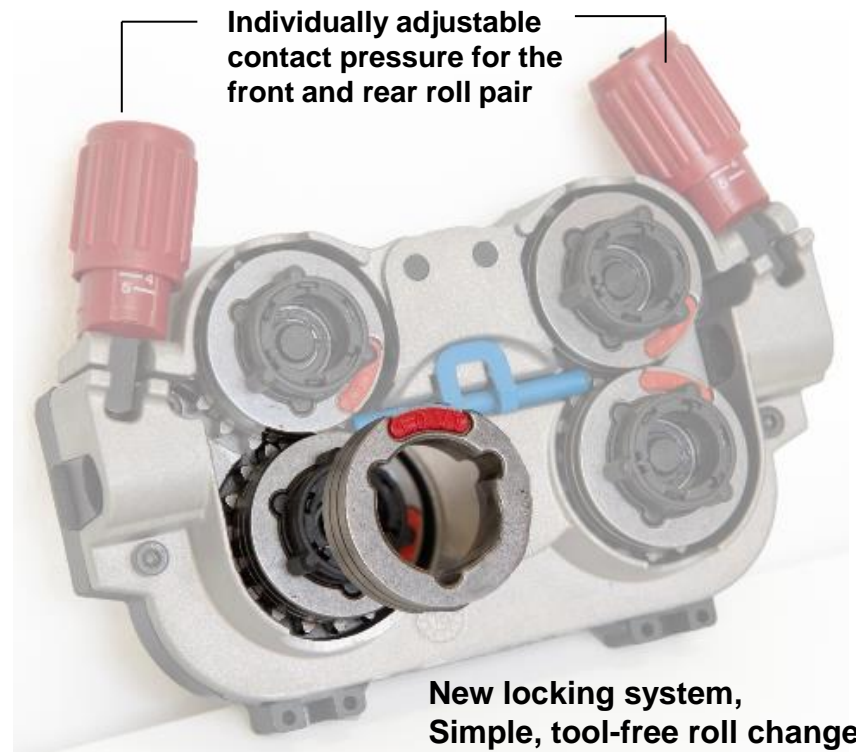


U-groove
for aluminium



V-groove, knurled
for flux cored wire

Color-coded
for wire diameter
differentiation



**Individually adjustable
contact pressure for the
front and rear roll pair**

**New locking system,
Simple, tool-free roll change**

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LF56D Feeder

Innovative Intuitive Interface – Easy Communication

- Two controls, one button for easy navigation
- Icon language for key commands on 7" TFT display
- Easy process and settings selection
- **MECHAPULSE™** for obtaining high-quality scaled Weld bead
- ARCFX™ – joint visualization
- Work point in material thickness (mm) / WFS / A
- Locking function / Limits / Memories / Jobs
- Interface available in languages:

(English, German, French, Polish, Finnish, Spanish, Italian, Russian, Dutch, Romanian, Slovakian, Hungarian, Czech, Turkish, Portuguese,)

NEW



NEW ENCODERS

for more precise adjustment.

NEW



CLOCK & CALENDAR

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

NEW



SPEAKER

Product operation (adjusting the encoders or pressing the button) and errors signaled by a sound. Training, advertising and other video displays now also include sound.



Auto

AUTO-SETTINGS

Preset parameters to increase productivity



USB CONNECTIVITY

Easy software update & diagnostics, weld log for quality monitoring

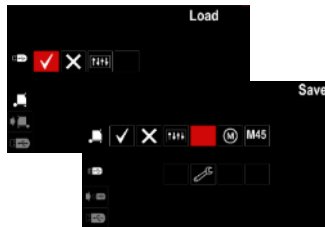
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LF56D Feeder

USB connectivity – Enhanced Functions

- FULLY & EASY system software update
- Diagnostics (Snap-shots)
- Transfer settings among machines:
 - current welding settings
 - configuration parameters (Pxx menu)
 - all welding programs in user memory
 - one of the welding programs
- 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 logs for quality data monitoring (data on feeder user interface screen or CSV file transfer)
- Document reading (including movies with tutorials or safety instructions)



Start Time	Average Wire Feed Speed [m/min]	Average Current [A]	Average Voltage [V]	Arc Time [min]	Weld Mode	Job Name	Job Name
26/09/2012 21:33	1,69	164	21,13	35	3	-	-
27/09/2012 18:50	1,69	185	21,22	23	3	-	-
27/09/2012 18:55	1,69	183	20,52	15	3	-	-
27/09/2012 18:58	1,69	182	21,16	32	3	-	-
27/09/2012 18:53	6,69	216	23,3	32	12	3	Welder 1
27/09/2012 18:55	6,69	218	22,59	33	12	3	Welder 1
27/09/2012 18:58	6,69	220	23,65	31	12	3	Welder 1
27/09/2012 18:52	6,69	214	22,58	32	12	3	Welder 1
27/09/2012 18:55	6,69	218	22,3	33	12	3	Welder 1
27/09/2012 18:52	4,31	140	21,4	33	12	-	-
27/09/2012 18:10	4,31	140	23,3	15	12	-	-
27/09/2012 18:18	4,31	140	23,3	14	12	-	-
27/09/2012 18:31	4,31	140	20,53	12	12	-	-
27/09/2012 18:25	4,31	140	23,3	14	12	-	-



LF52D Feeder

Standard User Interface – Basic Settings, Simple in Use

NEW!

User memory programs & welding process change:

- Simple and quick selection by pressing the button: 4 welding programs stored in user memory and 4 welding processes (GMAW, FCAW, SMAW or GTAW)
- LEDs showing the selected process

Quick and easy access to the most commonly used welding parameters

- **Arc Controls** (depend on the welding program)
- Torch trigger mode **2-step / 4-step**
- Wire Feed Speed **Run-in** function
- **Burn-back** time

SYN
SYNERGIC
SETTINGS



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LF52D Feeder

Standard User Interface – User memory programs & Welding process change



To change the welding process:
Press the left button.

"Pr" is shown on the left display and the actual program number on the right display.

Again, press the left button, the welding programs indicator will pass to the next program in the sequence.

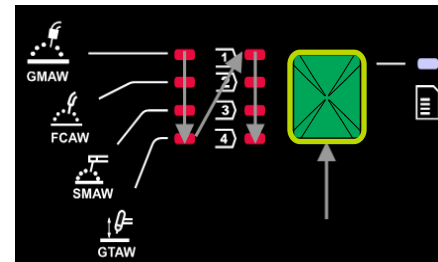
Press the left button until the LED Indicator will indicate desired welding program.



Simple and quick selection by pressing the button:

- 4 programs are fixed and cannot be changed (GMAW, FCAW, SMAW or GTAW)
- 4 welding programs stored in user memory
- LEDs showing the selected process

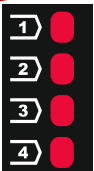
Symbol	Process	Program Number		
		Powertec®	Speedtec®	Flextec®
	GMAW (non-synergic)	2	5	10
	FCAW-GS	7	7	81
	SMAW	1	1	1
	GTAW	-	3	3



NEW!

To assign the welding program to user memory:

- Use the left button to select the user memory number: 1, 2, 3 or 4 (LED indicator will light up selected memory).
- Press and hold the left button until LED Indicator will blink.
- Use the right control to select the welding program (all programs are presented on sticker inside feeder chamber).
- To save the selected program, press and hold the left button until LED indicator will stop blinking.



LF52D Feeder

Standard User Interface – Quick Access Menu



To access the menu, press the **Right** button until the LED Indicator illuminates the required parameter. Set the parameter value with the Right Control. The set value is automatically saved. The parameter value is shown on the Right Display

Press the Right Button to go to the next parameter.
Press the Left Button to exit.

Access to the menu is not available under welding, or if there is a fault (status LED is not solid green).

Availability of the parameters in the **Quick Access Menu** depend on the selected welding program / welding process.

Wave Controls	Parameter	Range	Default value
	Pinch	-10.0 ÷ +10.0	0.0
	Frequency (SSP)	-10.0 ÷ +10.0	0.0
	Background Current (TIG Pulse)	20% ÷ 100%	60
	UltimArc™	-10.0 ÷ +10.0	0.0
	Arc Force (Stick)	-10.0 ÷ +10.0	0.0
	Hot Start (Stick&TIG)	0.0 ÷ 10.0	5.0
	Pulse Period (TIG Pulse)	0.03s ÷ 2.00s	1.00
	2-step / 4-step	2T or 4T	2T
	Run-in WFS	AUTO / OFF 1.49÷3.81 m/min	OFF for manual mode AUTO for synergic
	Burnback Time	AUTO / OFF 0.01 ÷ 0.25s	0.07s for manual mode AUTO for synergic



LF52D Feeder

Standard User Interface – functions in Basic and Advanced menu



To access the menu, press the **Left** and the **Right** buttons simultaneously.
User has access to two menu levels: Basic and Advanced.

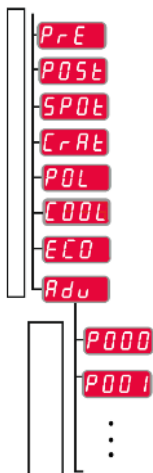
To exit from the menu with saved changes, press the Left and Right button simultaneously.
 System returns to the main menu automatically after one minute of inactivity.

Basic level is connected with Welding Parameters setting:

- Pre-flow time
- Post-flow time
- Spot welding
- Crater Procedure
- Polarization
- Cooler menu (Filling procedure; AUTO/ON/OFF)
- Green Mode menu (Standby/Shutdown)
- **Advanced Menu** ↓

Advanced Menu (P....) configure feeder functionality:

- WFS units (m/min or in/min),
- display Trim as Volts; display work-point as Amps,
- arc start/loss error time
- brightness control and restore factory settings,
- feedback persist and software version



Parameter	Range	Default value	
PrE 0.0	Preflow Time	AUTO / OFF / 0.1s ÷ 25s	0.2s for manual mode AUTO for synergic
POSt 0.5	Postflow Time	AUTO / OFF / 0.1s ÷ 25s	0.2s for manual mode AUTO for synergic
SPOT OFF	Spot Timer	OFF / 0.1÷120s	OFF
CrAt OFF	Crater Procedure	AUTO /OFF / 0.1 ÷ 10.0s	OFF
POL POS	Polarization	Positive / Negative	Positive
COOL FILL	Cooler	AUTO /ON / OFF / FILL	AUTO
ECO	Green Mode	Standby & Shutdown	OFF
Stby OFF	Standby	<50W	OFF
SHUT OFF	Shutdown	<10W	OFF
Adv	Advanced Menu	P...	



LF52D & LF56D Feeders

Sticker inside feeder chamber

NEW!

SOLID WIRES

Wire	0.6	0.8	1.0	1.2	1.4	1.6	1.8	2.0
KP14150 V06/08	✓							
KP14150 V08/10		✓						
KP14150 V10/12			✓					
KP14150 V12/16				✓				
KP14150 V12/25					✓			
KP14150 V05/11						✓		
KP14150 V14/20							✓	

CORED WIRES

Wire	0.6	0.8	1.0	1.2	1.4	1.6	1.8	2.0
KP14150 V10/12R			✓					
KP14150 V12/16R				✓				
KP14150 V16/20R					✓			
KP14150 V05/11R						✓		
KP14150 V14/20R							✓	

ALU WIRES

Wire	0.6	0.8	1.0	1.2	1.4	1.6	1.8	2.0
KP14150 M16/20A								✓
KP14150 U12/16A								✓
KP14150 M16/20A								✓
KP14150 U16/20A								✓
KP14150 M06/08A								✓

ALU WIRES SOLID WIRES CORED WIRES

GMAW (Synergic modes) - Standard CV, SSA, HPS

Material	Gas	Mode	0.6	0.9	1.0	1.2	1.32	1.4	1.6	0.030	0.035	0.040	0.045	3/64	0.052	1/16
Steel	CO ₂	Mode	83 / 11	18 / 13	26 / 15				185 / 19	12	15	18	21		24	
Steel	ArMIX		94 / 10	11 / 12	21 / 14	156 / 18	25 / 17	187 / 18	11	14	17	20			23	26
Steel (SSA)	ArMIX		91 / -		24 / -											
Steel (HPS)	ArMIX		117 / -		127 / -											
Stainless	ArMIX		81 / 28		31 / 26	81 / 27				20	24	30			41	
Stainless	Ar/Ha/CO ₂									31	35	39				
Stainless (SSA)	ArMIX		85 / -		35 / -	45 / -										
Aluminum AlSi	Ar					71 / 30				77 / 32		48			50	52
Aluminum AlMg	Ar					76 / 31				77 / 33		54			56	58
Metal Core	ArMIX					70 / 21		83 / 22		85 / 23				70	72	74
Cored Wire	CO ₂												83	85	87	
Cored Wire	ArMIX												82	84	86	
Si Bronze	Ar															
			198 / 35													

GMAW - Pulse (Synergic modes), SSP

Material	Gas	Mode	0.6	0.9	1.0	1.2	1.32	1.4	1.6	0.030	0.035	0.040	0.045	3/64	0.052	1/16	
Steel	ArMIX	Mode	88											18	18	22	
Steel (SSP)	ArMIX														23	27	
Stainless	ArMIX		66														42
Stainless (SSP)	ArMIX																
Aluminum AlSi	Ar																51
Aluminum AlMg	Ar																57
Metal Core	ArMIX																73
Cored Wire	ArMIX																75

SMAW / STAW / Gouge / GMAW / FCAW

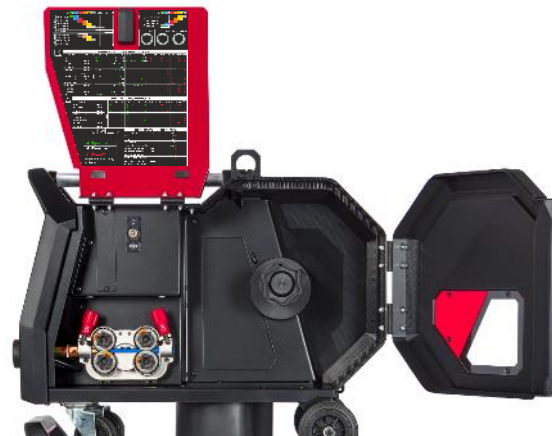
Process	Gas	Mode
Stick		1 / 1 / 1
TIG Lit		1 / 1 / 1
TIG Lit Pulse		1 / 1 / 1
Gouging (Compressed Air)		1 / 1 / 1
GMAW, STANDARD CV	ArMIX	1 / 2 / 10
GMAW, STANDARD CV	CO ₂	1 / 3 / 10
GMAW, STANDARD CV	Ar	1 / 4 / 10
FCAW-SS, STANDARD CV		1 / 6 / 50
FCAW-GS, STANDARD CV	ArMIX	1 / 7 / 81
FCAW-GS, STANDARD CV	CO ₂	1 / 8 / 81

- Speedtec™

- Powertec™

- Flextec™

If recalling is not possible it means the required program is not installed (March 2021)



Sticker inside feeder chamber with:

- numbers and description of all welding program available
- rolls KIT items order numbers and description



LF52D & LF56D Feeders

Different feeders for different needs



LF56D	Functions and features	LF52D
7" Color TFT	UI type	LED's
✓	Speaker	-
✓	Clock and calendar	-
✓	ARC™FX (work point in A/mm)	-
✓	Display view configuration	-
✓	Auto settings	-
49	Memory / Jobs	(4+4)
✓	Limits	-
✓	Locking function	-
✓	Languages selection	-
✓	USB connectivity	-
✓	Media files (Support)	-
✓	Weld Logs / History	-
✓	Cross-switch gun	-
✓	Push-Pull gun	-
✓	A/B procedure	-
✓	Quick Triger	-

	GMAW / FCAW	PULSE	Synergic	SSA/SSP/HPS	MECHAPULSE™	SMAW	GTAW	CAG
LF56D	✓	✓	✓	✓	✓	✓	✓	✓
LF52D	✓	✓	✓	✓	-	✓	✓	✓



New cooler COOL ARC® 60

Smart Cooler fully controlled by power source

NEW!

- Three modes **AUTO/ON/OFF** available to maximize energy savings
- **Filling procedure** managed from feeder user interface
- High cooling power **1,1kW@25°C**
- Strong pump (0.47MPa) to support proper cooling
- **Flow sensor** installed as standard for gun protection
- **LED lights** inside for perfect coolant level visibility
- **Coolant filter** to keep coolant clean
- Quick water connection on front and back side
- Flow sensor ON-OFF switch on the back
- Reservoir capacity 4,5L
- Protection class IP23, Weight 22kg

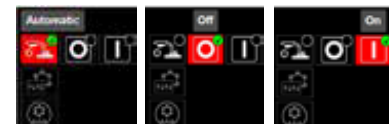
Filling Procedure

step by step detail filling instruction on feeder user interface



Three modes of operation available:

1. AUTO
2. OFF
3. ON



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Speedtec® 400SP 500SP

Superior Ergonomics



Ideal height for easy-to-view settings.

Simple navigation
also when using welding gloves

Gun holder
both sides



Practical handle
for safe movement of the machine

NEW

Heavy Duty 4-Wheel Cart

- Rubber bumpers
- Large wheels
- Extremely reliable and stable
- Low gas cylinder entry
- Easy maneuverability
- Small footprint
- 4 lifting eyes



NEW

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



NEW



Cable connections on front (in standard) and back rear side (in option)

New cooler COOLARC® 60

- Inlet on front for easy fill up,
- LED lights inside reservoir
- Additional water connections on the back

Cable Management System

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



Low gas cylinder entry makes loading very easy



LINCOLN ELECTRIC

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2025 STRATEGY

LF56D & LF52D

Superior Ergonomics

Gun Holder

MIG gun always at hand, ready to work



Front UI protection cover

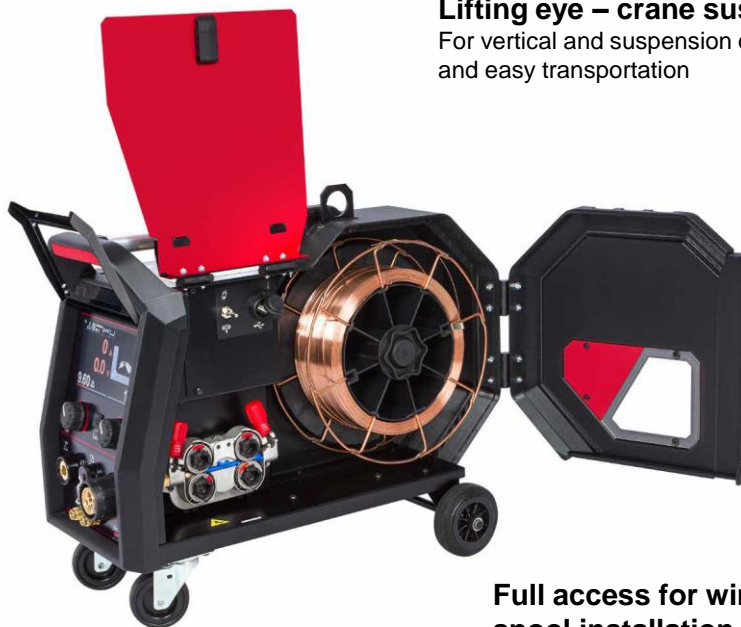
keep your UI safe



Flowmeter

For shielding gas flow setting (option)

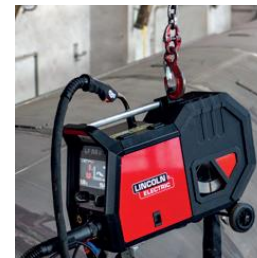
- Precise adjustment directly on site
- Practical especially with long hose packages



Perfect feedability with 4 Rolls.
Permanent internal lights.
Big wheels as standard for mobility.
Drum ready.

Lifting eye – crane suspension

For vertical and suspension operation, safe and easy transportation



Dust-proof wire spool cover Inspection window

easier notification for spool change



Full access for wire spool installation

Simple and comfortable spool change, new locking system

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HIGHER
STANDARD.
2025 STRATEGY

Speedtec® 400SP & 500SP

High Productivity

- **ALL Welding Modes installed as standard** – included in price
 - **Auto-settings** implemented to synergic welding modes
 - 49 memory locations (LF56D)
 - **Production Monitoring** (simple data collection on USB with LF56D or CheckPoint as paid option)
 - Quick-Trigger memory recall
 - Procedure A/B
 - Limits and Locking function
 - Up-Down or cross switch (joystick) gun compatible
 - Operator assistance on feeder screen (technical parameters, part numbers, welding variables, etc.)
 - Icon language supported by multi-languages descriptions
 - Sounds signals from the feeder available
 - Optional media files can be displayed on color screen
 - System monitor by Power Wave® Manager (system status, set-up, snapshots and more) and Software Update
 - Easy installation and configuration
- & many more.....

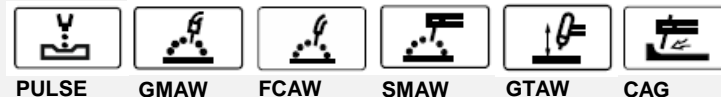


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Speedtec® 400SP 500SP

Welding modes available as standard



Wide range of weld modes:

» 3* Manual + Stick + 2*TIG + CAG = 7

» MIG CV modes = 31

» MIG Pulse modes = 21

» MIG Special modes = 12

TOTAL = 59 modes

» **MECHAPULSE™** function available with any synergic mode

		Wire Diameter						
		Gas	0.8	1.0	1.2	1.32	1.4	1.6
SYNERGIC Modes	Steel	CO ₂	93	10	20	-	-	105
	Steel	ArMIX	94 / 95	11 / 12	21 / 22	156 / 157	25 / 26	107 / 108
	Steel (SSA)	ArMIX	97	15	24	-	-	-
	Steel (HPS)	ArMIX	-	117	127	-	-	-
	Steel (SSP)	ArMIX	-	13	23	-	-	-
	Stainless	ArMIX	61 / 66	31 / 36	41 / 46	-	-	56
	Stainless (SSA)	ArMIX	65	35	45	-	-	-
	Stainless (SSP)	ArMIX	-	39	49	-	-	-
	Aluminum AlSi	Ar	-	-	71 / 72	-	-	73 / 74
	Aluminum AlMg	Ar	-	152	75 / 76	-	-	77 / 78
	Metal Core	ArMIX	-	-	81	-	83 / 84	85
	Cored Wire	ArMIX	-	-	91 / 92	-	-	-
Si Bronze	Ar	190	191	-	-	-	-	

xx - CV modes

xx - Pulse modes

Special modes

Mode #	Process	Procedure	Wire Size	Gas Type	
Manual	1	SMAW	Stick	Rutile & Basic	-
	3	GTAW	TIG (Touch Start)	-	Argon
	5	GMAW	CV	Non Synergic	
	6	FCAW-SS	FCAW-S	Non Synergic	Self Shielded
	7	FCAW-GS	FCAW-G	Non Synergic	Argon Mix
	8	GTAW	TIG Pulse (Touch Start)	-	Argon
	9	CAG	Gouging	Electrodes up to 10mm	Compressed Air

Materials:

Steel

Stainless Steel

Low Alloy Steel

Aluminum

MIG Brazing

Stick: Rutile & Basic



Speedtec® 400SP 500SP

High Productivity



SPEED SHORT ARC™ (SSA™) – faster travel speeds*

- **Increases travel speed up to 50%****
- **Reduces heat input up to 20%**
- Reduces distortion
- Improves out of position welds
- Designed for Carbon & Stainless Steel, thin plates 2-5 mm

* based on side by side comparison of SSA™ and standard CV mode (Short Arc)

** in automated applications

NEW

UP TO **40%**
COST
REDUCTION

HIGH PENETRATION SPEED™ (HPS™) – increased penetration with faster travel speeds*

- **Increases penetration**
- **Longer stick out applicable**
- Reduces heat input up to 20%
- Reduces distortion
- Reduces undercut effect
- Shorter preparation time
- Designed for Carbon Steel, thick plates > 6 mm

* based on side by side comparison of HPS™ and standard CV mode (Spray Arc)

NEW

UP TO **30%**
COST
REDUCTION

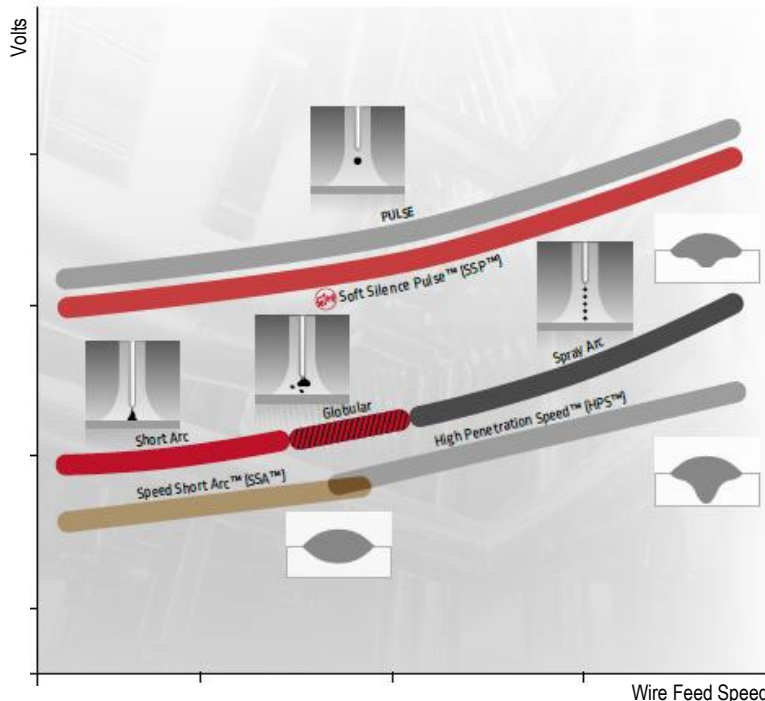
SOFT SILENCE PULSE™ (SSP™) – improved arc sound*

- **Reduces arc noise up to 8 dB**
- **Clearly better wetting for Stainless Steel**
- Reduces spatters level
- Eliminates undercut effect
- Efficient on Stainless Steel & Steel, all plate thicknesses

* based on side by side comparison of SSP™ and standard Pulse mode

NEW

UP TO **50%**
ARC NOISE
REDUCTION



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Speedtec[®] 400SP 500SP

Speed Short Arc[™] (SSA[™]) for faster welding with lower heat input



Speed Short Arc[™] (SSA[™]) is a semi-controlled short circuit mode which allows to shift globular behavior using wire feed speed normally reachable only in pulse mode.

Faster wire speeds require a medium current together with a large peak current in order to form and detach the droplet more quickly. The results is keeping benefit of short arc, SSA extend energy but avoid globular mode.

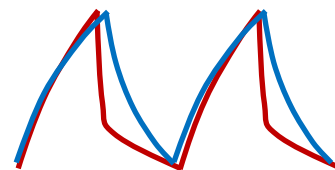
Mode #	Process	Wire Size	Wire Type	Gas Type	
97	GMAW	SSA (CV)	0.8	Steel	82Ar/18CO ₂
15	GMAW	SSA (CV)	1.0	Steel	82Ar/18CO ₂
24	GMAW	SSA (CV)	1.2	Steel	82Ar/18CO ₂
65	GMAW	SSA (CV)	0.8	Stainless	98Ar/2CO ₂
35	GMAW	SSA (CV)	1.0	Stainless	98Ar/2CO ₂
45	GMAW	SSA (CV)	1.2	Stainless	98Ar/2CO ₂

Applications & Characteristics

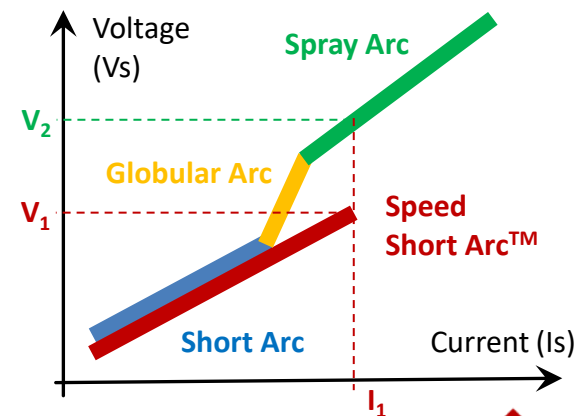
- Manual & Automatic
- Carbon Steel and Stainless Steel
- **Low thickness (2÷5mm)**
- Good behavior for root pass (Pipe)
- Weld in position even in 3G
- **Extended WFS range in short arc**
- Arc stable and rigid (dynamic), medium spatters

Benefits

- **Welding speed up to 50% faster** than traditional CV mode (in automated applications)
- **Up to 20% lower heat input** than traditional CV mode and less deformation
- Reduction of the deformation (thin materials) as the relatively lower heat input
- Handling ability largely improved and easily for welder's to use



Standard Short Arc
Speed Short Arc



Speedtec® 400SP 500SP

Speed Short Arc™ (SSA™) – applications



1

The **SSA™** mechanism reduces the **deformations**.

In the application of the SSA in the welding of (thin) sheets (3 mm), a marked **increase of the welding speed** gives rise to a **much lower linear energy (up to 20%)**.

The possible applications of the **SSA™** mainly consist of the welding of thin sheets in big pieces, where usually deformation problems are observed in the conventional arc processes.

Material S355

Thickness 3mm

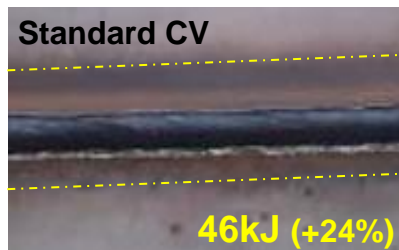
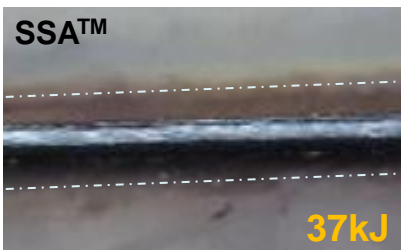
Fillet welding in a lap joint

Wire: Carbofil Gold Elite Ø1.0mm

Gas: M21

WFS = 10m/min

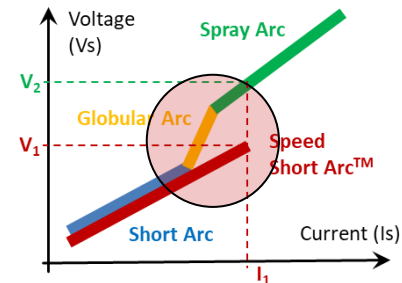
Travel speed (WeldyCar) = 120cm/min



2

Position welding

The **SSA™**, which is a **cold process**, allows of position welding with **lower energy** in the following arrangements: lap joints, fillet welds in downhand position and positioned filling of a groove.



3

An increase of the welding speed mainly face problems with arc stability and bad geometry of the weld beads (undercuts, arched beads...).

The **SSA™** allows of welding with short arc within the range of wire feed rates **belonging to the globular area and partially to the spray arc area**. It enables to increase significantly the weld speed.



Speedtec® 400SP 500SP

High Penetration Speed (HPS™)



High Penetration Speed™ (HPS™) is a spray arc transfer but using lower voltage and so lower energy. The slow electrical regulation allows to reach high penetration and better deposition with less deformation of base material.

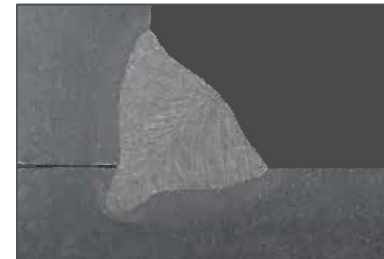
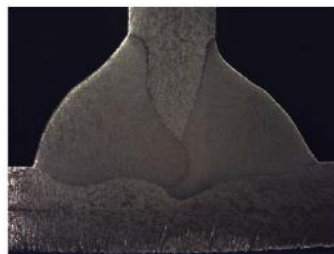
Applications & Characteristics

- Manual & Automatic
- Carbon Steel with high thicknesses (>6mm)
- **Long stick out applicable**
- **Deeper penetration**, directionally stable
- As spray arc flat & transverse position
- **Provides lower voltage and so lower energy**
- Virtually spatter free
- Very accurate and dynamic regulation of the welding parameters

Benefits

- **Longer stick outs** which enables narrower included angles to be used with reduces the number of passes needed for the same plate thickness
- **Up to 20% lower heat input** and less distortion than traditional CV spray arc
- Reduction of the deformation as the relatively lower heat input
- Increase travel speed up to 35% than traditional CV spray arc
- **No preparation until 6÷10 mm**
- **Less preparation from 12÷20 mm**
- Reducing of undercut effect

Mode #	Process		Wire Size	Wire Type	Gas Type
117	GMAW	HPS (CV)	1.0	Steel	82Ar/18CO ₂
127	GMAW	HPS (CV)	1.2	Steel	82Ar/18CO ₂



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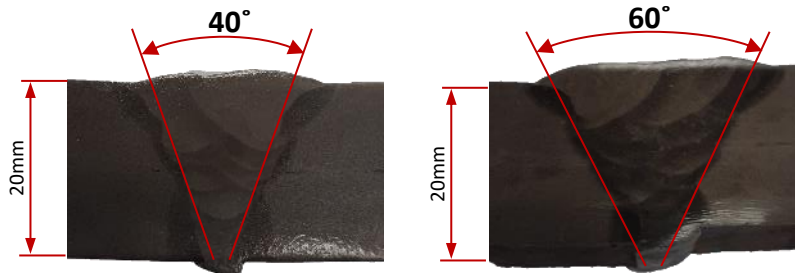
HIGHER
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Speedtec® 400SP 500SP

High Penetration Speed (HPS™) – applications



- 1** Filling work need less passes with HPS™ comparing a classic Spray Arc giving labor & material cost saving



HPS mode

8 passes

Duration: 8min 8s

260-270A/28-29V

Travel speed 55cm/min

CV classic Spray mode:

12 passes

Duration: 11min 38s

260-270A/30-31V

Travel speed 45cm/min

- 2** Due to **lower energy** base material has less distortion and structural changes constraints. The welding performances are stronger and the heat affected zone is reduced. No loose time in start again bad welding because flank effect.



- 3** Less time spent to prepare the pieces of 12÷20mm thicknesses, interpenetration of 6÷10mm thicknesses steel pieces are possible without any preparation (no machining).



Steel material
Thickness=10mm
No weld preparation
Perfect interpenetration
No undercut effect

- 4** Long stick-out to weld in very close angle. HPS™ gives the possibility to weld even in very restricted area. In fact the stick-out can be increased up to 25mm (even more in some conditions) without any arc instability. The arc keeps a perfect behavior and ensure a very deep penetration despite the high distance between the nozzle and the weld pool.



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Speedtec[®] 400SP 500SP

Soft Silence Pulse[™] (SSP[™])

Soft Silence Pulse[™] (SSP[™]) is a quiet pulsed mode recommended for the stainless steel applications. The SSP[™] produces a soft and stable arc with a good wetting of the weld bead. This wave shape gives a fine appearance of the weld bead.

Applications & Characteristics

- Manual
- Efficient on **Stainless Steel** and Carbon Steel
- All plate thicknesses
- Pulse transfer with a special waveform **producing a soft and silent arc**
- Provides lower voltage and so lower energy
- **Virtually spatter free**
- High productivity & travel speeds
- Gives good mechanical characteristics

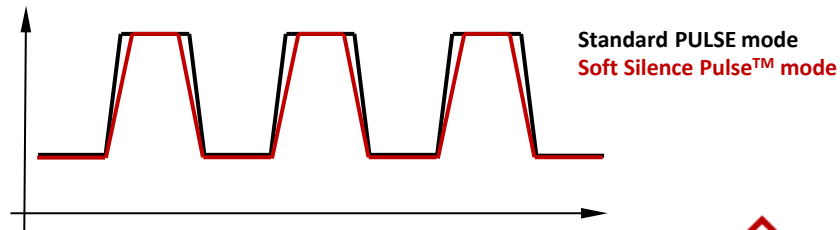
Benefits

- **The noise of the arc is reduces up to -8dB** comparing traditional Pulse mode what can be really appreciated when you have to weld in a confident area
- Gives **the best wetting of weld bead for Stainless Steel application**
- Low spatters as in pulse mode
- Undercut effect almost nonexistent
- Stability given by this transfer allows to weld in all positions

Mode #	Process		Wire Size	Wire Type	Gas Type
13	GMAW	SSP (Pulse)	1.0	Steel	82Ar/18CO ₂
23	GMAW	SSP (Pulse)	1.2	Steel	82Ar/18CO ₂
39	GMAW	SSP (Pulse)	1.0	Stainless	98Ar/2CO ₂
49	GMAW	SSP (Pulse)	1.2	Stainless	98Ar/2CO ₂



-8dB



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Speedtec® 400SP 500SP

MECHAPULSE™



MECHAPULSE™ function is available with LF56D feeder for all synergy modes and **produces very high quality welds with rippled seam appearance**. This effect is achieved by combining two operating points, two different wire feed speeds related to different arc welding power. This is an alternative phase of wire speed (cold and hot) in pulse or short arc transfer (but always the same transfer for both phases)

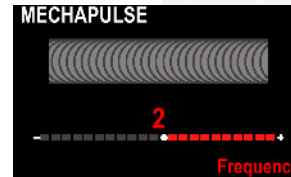
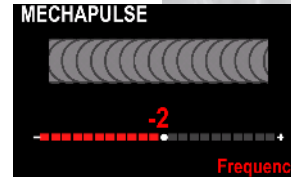
Applications & Characteristics

- Manual
- Carbon Steel, Stainless Steel & Aluminum
- All thicknesses (effective on thin sheets)
- **Weld bead with TIG appearance**
- Low heat input, less deformation

Benefits

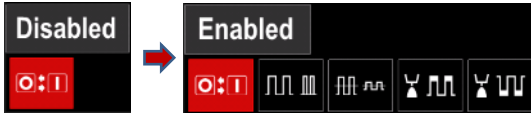
- **Increase travel speed (up 4x faster)** in comparison to TIG process
- Very efficient in aluminum (low thickness) avoid deformation
- **Higher productivity and better appearance**
- No need of weaving
- Effortless welding in vertical up position
- Easier welding in difficult positions
- Shorter training time

UP TO **50%**
COST
REDUCTION



Speedtec® 400SP 500SP

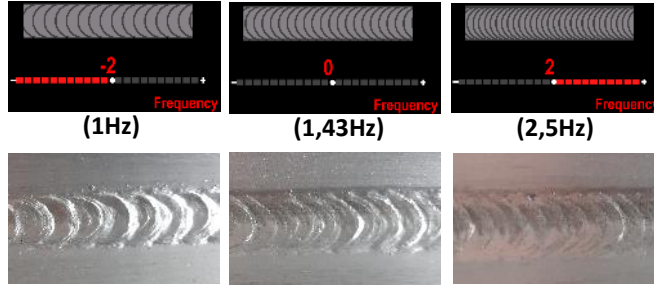
MECHAPULSE™



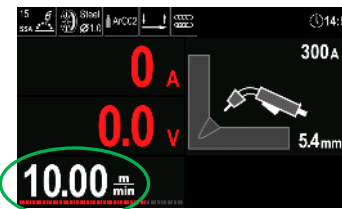
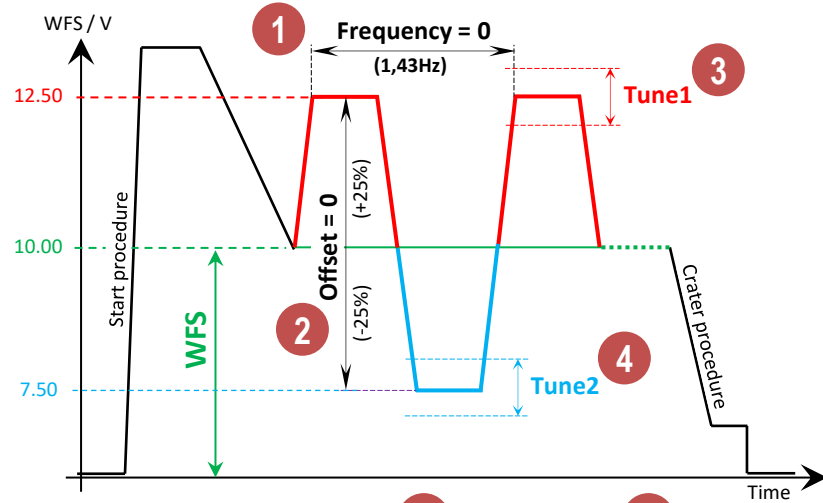
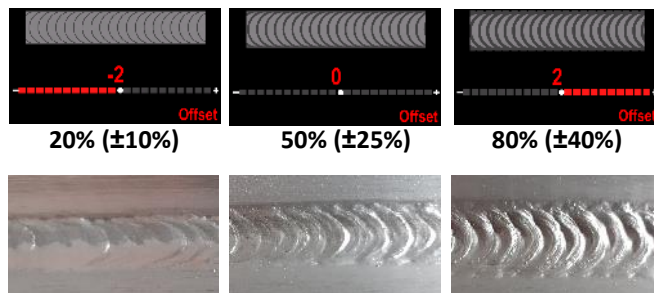
MECHAPULSE is automatic linking of two operating points, two different WFS (Hot and Cold) related to different arc welding power.



Frequency = density of ripple pattern



Offset = thickness / width of ripple pattern



Tune 1 = Hot (higher level)

Tune 2 = Cold (lower level)

- in pulse processes regulates the arc length
- in short arc processes (CV) regulates the voltage levels

WFS = reference work point for MECHAPULSE (average wire feed speed)



Speedtec® 400SP & 500SP

Data Monitoring – CheckPoint®

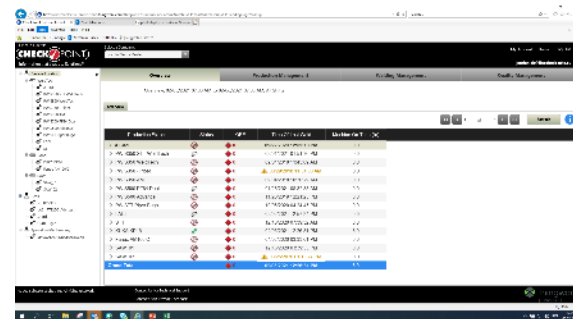
CheckPoint® * – option paid

* Temporary limited to English language



LIST PRICE 1100 euro

- » Production Management
- » Welding Management
- » Quality Management
- » Data Exporting



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Speedtec® 400SP 500SP

Options and Accessories



Available soon



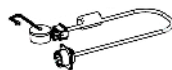
K14297-1
COOLARC 60



W000010167
FREEZCOOL
9,6L



K14337-1
Output connection KIT
(400SP/500SP)



K14348-1
12PIN Harness Socket KIT



K14203-1
Remote Control
RC-7 ADVANCED



K14350-1
Cart HD for feeders



K14298-1
CART 4 WHEEL



K14346-1
CART 4 WHEEL DUAL
(2 feeders + 2 gas cylinder)



K14347-1
Replaceable
front User Interface
U7 ADVANCED

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Speedtec® 400SP 500SP

What's new?

K14337-1 OUTPUT CONNECTION KIT (400SP 500SP) (optional KIT)

- ▶ Allows cable connection on the back of power source
- ▶ Required in configuration with CART 4 WHEEL DUAL



Cable connections on front as standard



Cable connections on back rear side with optional **K14337-1** KIT



Speedtec® 400SP 500SP

What's new?

K14348-1 12PIN REMOTE CONTROL KIT (400SP 500SP) (optional KIT)

- ▶ For connection of Remote Control RC-7 Advanced
- ▶ No possibility to connect analog remote controls

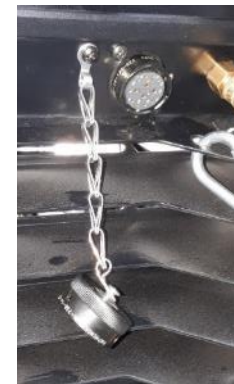
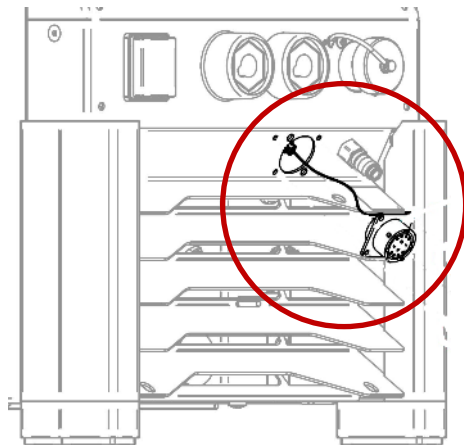


K14203-1
RC-7 Advanced



K10095-1-15M
Analog RC
(6PIN, 15m)

K2909-1
Adapter
12PIN(M)/6PIN(F)



Speedtec® 400SP 500SP

What's new?

K14203-1 REMOTE CONTROL RC-7 ADVANCED

- ▶ Full control from a distance (the same functionality as LF56D feeder: welding parameters, changing process/modes, memory or A/B procedure)
- ▶ Simple connection (direct connection to the feeder or to the Speedtec with 12PIN socket KIT (K14348-1))
- ▶ USB socket for fully welding system update or simple data collection
- ▶ Flexible configuration: can be simple put on the front of power source,
- ▶ Four magnets on the back for quick and easy installation anywhere
- ▶ Eyelet for hanging and foldable stand



7" TFT display
5m cable with 12pin plug
USB socket

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Speedtec® 400SP 500SP

What's new?

K14346-1 CART 4 WHEEL DUAL (400SP 500SP)

Two feeders on cart, flexible solution to increase productivity

- ▶ Two feeders instead one (don't work in the same time)
- ▶ Two different wires for different welding procedure
- ▶ Two guns ready to go at any time
- ▶ One cooler, two water cooled guns possible
- ▶ Smart box for cable connection
- ▶ Two big gas bottles capable
- ▶ Reduced installation time

Smart box
for cable
connection



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LF52D LF56D

What's new?

K14350-1 CART HD FOR FEEDER (LF52D LF56D PF22 PF26)

- ▶ One **Heavy Duty** cart for all feeders (LF52D/LF56D and PF22/PF26)
- ▶ Quick and Easy assembly without any additional tools reduced installation time
- ▶ **Large wheels** for easily effortlessly overcome obstacles such as cables or thresholds



Rear view

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Speedtec® 400SP 500SP

What's new?

K14347-1 REPLACEABLE FRONT USER INTERFACE (U7) (optional KIT)

- ▶ 7" TFT panel on power source (400SP & 500SP)
- ▶ Full control for Stick, TIG and Gouging processes without feeder
- ▶ Full control from power source when feeder is inaccessible (suspended)



Speedtec® 400SP 500SP

Options and Accessories

INTERCONNECTION CABLE

AIR:

K14198-PG	CABLE PACK 5PIN G 70MM2 1 M
K14198-PG-3M	CABLE PACK 5PIN G 70MM2 3M
K14198-PG-5M	CABLE PACK 5PIN G 70MM2 5M
K14198-PG-10M	CABLE PACK 5PIN G 70MM2 10M
K14198-PG-15M	CABLE PACK 5PIN G 95MM2 15M
K14198-PG-20M	CABLE PACK 5PIN G 95MM2 20M
K14198-PG-25M	CABLE PACK 5PIN G 95MM2 25M
K14198-PG-30M	CABLE PACK 5PIN G 95MM2 30M

WATER:

K14199-PGW	CABLE PACK 5PIN W 95MM2 1 M
K14199-PGW-3M	CABLE PACK 5PIN W 95MM2 3M
K14199-PGW-5M	CABLE PACK 5PIN W 95MM2 5M
K14199-PGW-10M	CABLE PACK 5PIN W 95MM2 10M
K14199-PGW-15M	CABLE PACK 5PIN W 95MM2 15M
K14199-PGW-20M	CABLE PACK 5PIN W 95MM2 20M
K14199-PGW-25M	CABLE PACK 5PIN W 95MM2 25M
K14199-PGW-30M	CABLE PACK 5PIN W 95MM2 30M



E/H-400A-70-5M
Electrode holder
400A/70mm² - 5m



GRD-400A-70-xM*
Ground cable 400A/70mm²;
x=5/10/15 m

GRD-600A-95-xM*
Ground cable 600A/95mm²;
x=5/10 m



W000010136
FLAIR 600 Gouging torch
with airflow regulated



LF52D & LF56D Feeders

Options and Accessories



LINC GUN™	
W10429-36-3M	LGS2 360 G-3.0M MIG GUN AIR COOLED
W10429-36-4M	LGS2 360 G-4.0M MIG GUN AIR COOLED
W10429-36-5M	LGS2 360 G-5.0M MIG GUN AIR COOLED
W10429-505-3M	LGS2 505 W-3.0M MIG GUN WATER COOLED
W10429-505-4M	LGS2 505 W-4.0M MIG GUN WATER COOLED
W10429-505-5M	LGS2 505 W-5.0M MIG GUN WATER COOLED



PRO-MIG Push-Pull Guns

(required adapter W10000031)

Gas cooled gun

W000385861 PROMIG PP 341 8M (Potentiometer)

Water cooled gun

W000385862 PROMIG PP 441W 8M (Standard)

W000385863 PROMIG PP 441W 8M
(Potentiometer)

W10000031 Adapter 12PIN->19PIN

K10413-PPW405-8M

Water cooled Push-Pull gun LG PPLG405WC
(350A@100%) 8m



KP10519-8

Adapter TIG EURO



WTT2 26 range

WTT2 18W range

WTT2 20W range



LF52D & LF56D Feeders

Options and Accessories

Roll Kit For Solid Wires	
KP14150-V06/08	ROLL KIT 0.6/0.8VT FI37 4PCS GREEN/BLUE
KP14150-V08/10	ROLL KIT 0.8/1.0VT FI37 4PCS BLUE/RED
KP14150-V10/12	ROLL KIT 1.0/1.2VT FI37 4PCS RED/ORANGE
KP14150-V12/16	ROLL KIT 1.2/1.6VT FI37 4PCS ORANGE/YELL
KP14150-V16/24	ROLL KIT 1.6/2.4VT FI37 4PCS YELL/GREY
KP14150-V09/11	ROLL KIT 0.9/1.1VT FI37 4PCS
KP14150-V14/20	ROLL KIT 1.4/2.0VT FI37 4PCS
Roll Kit For Aluminium Wires	
KP14150-U06/08A	ROLL KIT 0.6/0.8AT FI37 4PCS GREEN/BLUE
KP14150-U08/10A	ROLL KIT 0.8/1.0AT FI37 4PCS BLUE/RED
KP14150-U10/12A	ROLL KIT 1.0/1.2AT FI37 4PCS RED/ORANGE
KP14150-U12/16A	ROLL KIT 1.2/1.6AT FI37 4PCS ORANGE/YELL
KP14150-U16/24A	ROLL KIT 1.6/2.4AT FI37 4PCS YELL/GREY
Roll Kit For Cored Wires	
KP14150-V12/16R	ROLL KIT 1.2/1.6RT FI37 4PCS ORANGE/YELL
KP14150-V14/20R	ROLL KIT 1.4/2.0RT FI37 4PCS
KP14150-V16/24R	ROLL KIT 1.6/2.4RT FI37 4PCS YELL/GREY
KP14150-V09/11R	ROLL KIT 0.9/1.1RT FI37 4PCS
KP14150-V10/12R	ROLL KIT 1.0/1.2RT FI37 4PCS -/ORANGE
Wire Guides	
0744-000-318R	Wire Guide Set Blue 0.6÷1.6
0744-000-319R	Wire Guide Set Red 1.8÷2.8
D-1829-066-4R	Euro Wire Guide 0.6÷1.6
D-1829-066-5R	Euro Wire Guide 1.8÷2.8



Each roll KIT item # contains:

- metal wire guide for Euro socket
- 4 rolls
- plastic wire guide set



K14131-1
Arclink-T Flex



K14135-1
Arclink-T-Power



K14132-1
Adapter
5Pin(M)-12Pin(F)

LINCOLN
ELECTRIC

HIGHER
STANDARD.
2025 STRATEGY

LF52D & LF56D Feeders

Options and Accessories



K10158-1
Adapter for spool
type B300



K14091-1
Remote MIG
LF45PWC300-7M (CS/PP)



R-1019-125-1/08R
Adapter for spool S200



K10095-1-15M
Remote control (6PIN, 15m)



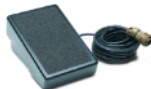
K14204-1
Wire feeder DRUM
Quick Connector



K2909-1
Adapter 12PIN(M)/6PIN(F)



K14175-1
Gas flow meter KIT



K870
Foot Amptrol



K10343
Innershield® gun adapter

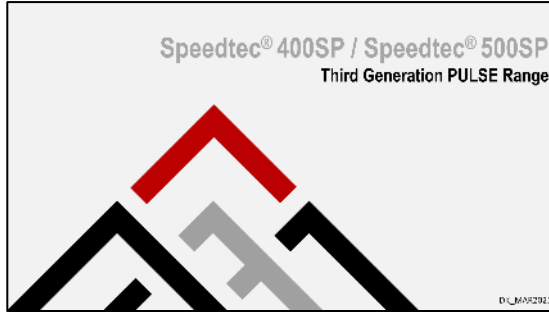


Speedtec® 400SP 500SP

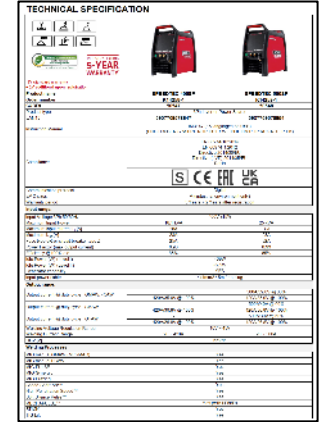
Marketing Tools / Find Information



Product Family Brochures



Power Point Presentation

A technical specification sheet for the Speedtec 400SP and 500SP. It includes a table with columns for "SPEEDTEC 400SP" and "SPEEDTEC 500SP". The table lists various technical parameters such as "Output Power", "Current", "Voltage", and "Frequency". There are also icons for CE, ENEC, UK, and CA certifications. A "5-YEAR WARRANTY" logo is visible at the top right.

Technical Specification (Excel file)



UI software simulator (training tool for laptop use)



Product movies



Instruction Manual IM3147

<https://lincolnelectric.com/>



Speedtec® 400SP 500SP

Why Speedtec? Value proposition



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**).



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.



RUGGED RELIABILITY

- ▶ **High duty cycle multi-process power sources.**
- ▶ **Double-side fully potted PCB** with superior resistance for dust, humidity, jerk or vibrations.
- ▶ Metal made, rugged, solid and very stable construction ready for any industrial environment.
- ▶ **True Heavy Duty confirmed by 5 Years Warranty*.**



SPEEDTEC® 400SP/500SP





THANK YOU

