

THE **NEXT** TIG GENERATION

INVERTEC® 275TP • INVERTEC® 300TP



LINCOLN
ELECTRIC

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LINCOLN®
ELECTRIC



THE NEXT TIG GENERATION

Processes

- GTAW
- SMAW
- Gouging (only Invertec 300TP)

Materials

- Steel
- Stainless steel
- Low alloy steel

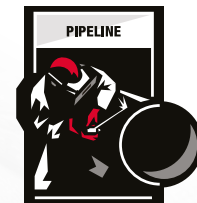
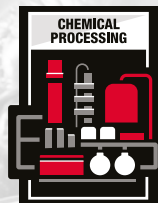
Applications

- General fabrication
- Heavy fabrication
- Structural
- Transportation
- Chemical processing
- Maintenance and repair
- Shipbuilding
- Offshore
- Pipeline

INVERTEC 275TP and **300TP** is a new generation TIG inverter range which is the next step in professional welding, offering excellent welding processes and high performance, to increase productivity. The new INVERTEC® is designed with the latest energy-saving technology and is ready to work in the most difficult environments, due to its unique design. To achieve excellent welding results, INVERTEC® utilises both digital and built-in communication systems and devices such as the USB port, making it easy to monitor and track welding operations.

Modular system offering superior mobility to facilitate the most demanding welding applications, within a variety of industry segments.

- Power Sources with a 40% high duty cycle
- New compact, light **COOL ARC® 27** offering greater cooling efficiency
- 2-wheeled, solid metal **CART 24**



RUGGED RELIABILITY

High duty cycle at 40 %

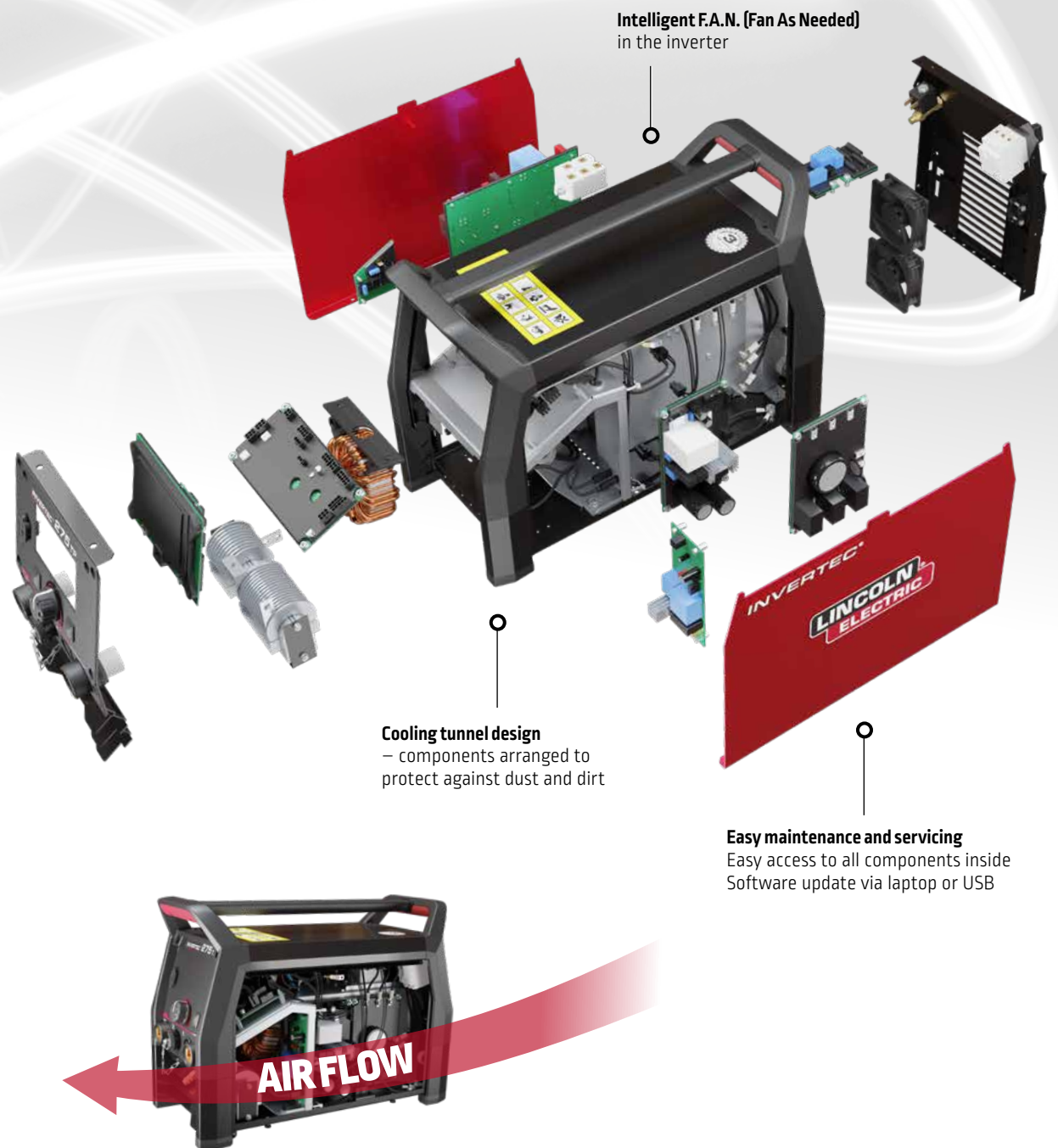
- High production efficiency
- Digital welding current control
- True HD tested – made for harsh environmental conditions

Inverter engine technology – ECO Friendly

- Lower power consumption due to high efficiency – energy cost saving
- Automatic power-saving modes [standby/shut-down function]
- Generator ready

Lincoln Electric Industrial design – ready to use anywhere

- **Double-sided fully potted PCB**
- Metal construction
- Protection class IP23
- **3 year full parts and labour warranty**



INVERTEC® 275TP & 300TP

Key technical data

- 400V ±15%, 3Ph 50/60Hz, generator ready
- Light weight – approx. 16kg
- **Invertec 275 TP: 270A@40% / 230A@60% / 200A@100%**
- **Invertec 300 TP: 300A@40% / 260A@60% / 230A@100%**
- Inverter platform product
- Idle power 19W and efficiency > 85%
- GTAW & STICK
- **GTAW manual and Synergic**
- **SMAW manual and Synergic – Pulse and Double Pulse**
- Intelligent F.A.N. (Fan As Needed)
- Customer Support
- USB Connectivity
- Voltage Reduce Device (VRD)
- Cellulosic 6010 stick capability
- **Industrial grade:** IP23, 3 Years Warranty, no limitation
- Gouging capability (only Invertec 300TP)



Included as standard

- Input cable 3 m (no plug)
- Gas hose 2 m
- Ground cable with clamp 3 m
- Metallic clips to fix the hose
- USB key with user manual
- Quick Start papers
- Front cover (only Invertec 300TP)

LIGHT AND PORTABLE

Front cover (standard for 300TP, optional for 275TP)

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



USB connectivity

New encoder for more precise adjustment.
Simple navigation even when using welding gloves

COOL ARC® 27
New stronger cooler

CART 24

Stable design with robust steel pipe construction

HIGH PERFORMANCE

MODULAR DESIGN, FLEXIBLE CONFIGURATION

Invertec® 300TP

3 PHASE **50/60 Hz** **CC**

DC GENERATOR READY

Cellulosic

Invertec® 275TP

2.2l **850 W**

COOL ARC® 27

2x

CART 24

PROTIG III S **PROTIG NGS** **WTT2**

TIG rods

	Item type	Item description	Item number
1	Power source	Invertec® 300TP	K14387-1
		Invertec® 275TP	K14243-1
2	Cooler	Cool Arc® 27	K14334-1
3	Cart	Cart 24	K14191-1
4	TIG torches	WTT2	see accessories
		PROTIG III S	
		PROTIG NGS	
5	Welding consumables	TIG rods	see TIG ROD section
6	Welding cable	Ground cable 300A – 50 mm ² – 5 m	GRD-300A-50-5M
7	Option	Foot Amptrol™	K870
8	Option	Remote control	K10095-1-15M

MODULAR CONCEPT MAKES EVERYDAY WELDERS WORK EASIER

Cart 24 – developed to store all accessories and makes everyday welding work easier.





COOL ARC® 27

NEW

- High cooling power 850W
- Reservoir capacity 2.2 l
- Strong pump to support proper cooling (max. pressure 7 bar)
- Protection class IP23

Simple Connection and Easy Installation

Flow sensor inside for gun protection

Coolant filter keeps coolant clean



LED lights inside reservoir for better visibility of the coolant level



USB CONNECTIVITY

Analysis and quick decision making

- Full system update & diagnostics
- Transfer settings between machines.
- Simple welding data collection on USB (start time, average current, average voltage, arc time, welding mode/job number, job name).
- Weld quality data monitoring (data on TFT user interface screen or CSV file transfer)
- Software updating

INNOVATIVE & INTUITIVE INTERFACE

200 Amp

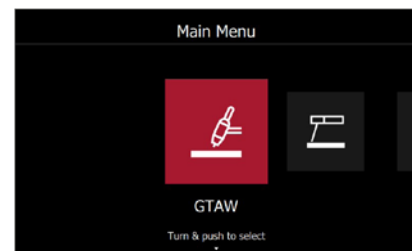
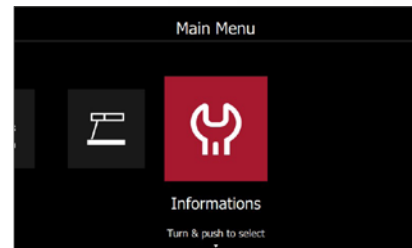
New encoders for more precise adjustment

- Two buttons, one control knob for easy navigation
- Icon language for key commands
- Easy process and settings selection
- Locking function / Limits / Memories / Jobs
- Interface available in languages: English, German, French, Polish, Finnish, Spanish, Italian, Russian, Dutch, Romanian, Norwegian, Swedish, Czech, Turkish, Portuguese

Colour display

1.5 s

10 %



EASY COMMUNICATION

THE NEXT TIG PROCESSES

MOVE TO THE NEXT LEVEL OF TIG WELDING

TIG DC DOUBLE PULSE

- Lower heat input which consequently reduces distortion and warpage in thin work pieces
- Allows for greater control of the weld pool
- Increases weld penetration, welding speed, and quality
- Provides good fusion at the toes of the weld, with less spatter than flat transfer and can be used to weld in all positions.
- **Pulse cycles fully regulated to allow up to 30% faster welding speed with less heat input**
- Ideal for CrNi welding and heat-sensitive materials

Tack for thin

- Fast and accurate tacking with minimal heat input to avoid any welding deformation
- **Ideal for spot welding activities multiple and repetitive where it is essential to create a uniform, controlled look**
- Uses heat to melt and fuse the surfaces of metal work pieces, which tends to make them harder
- Greater corrosion resistance for materials



UP TO
30%
FASTER
WELDING
SPEED



UNIFORM
AND
CONTROLLED
LOOK

EASY AND QUALITATIVE WELDING

GUIDED SETUP

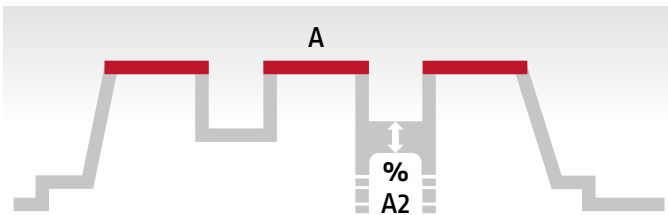
helps non-expert TIG welders to:

- Stabilise the arc
- Reduce the heat input
- Optimise the pulse
- Speed up the welding process
- Control the overall operation of the machine
- Save on current, filler material and gas
- Limit distortion on thin sheet metal

Following the indications on the screen, selecting the material type, thickness and type of joint the **Guide Setup** will set all correct parameters for an easy and qualitative weld

BI-LEVEL TIG FUNCTION

The possibility to use higher amps to add preheat and then weld with lower amps, moving between the two pre-set current values as many times as you like, simply pressing the torch button trigger.



With this sequence the arc is started in the 4S sequence, this means that steps 1 and 2 are the same. Quickly press and release the TIG torch trigger. The equipment will switch the current level from Set to A2 (background current). Each time this trigger action is

repeated, the current level will switch between the two levels. Press and hold the TIG torch trigger when the main part of the weld is complete. The machine will now decrease the output current at a controlled rate, or downslope time, until the Crater current is reached. This Crater current can be maintained as long as necessary.



Move quickly between 2 pre-set current values as many times as you like, simply pressing the torch button trigger

TIG AND MMA

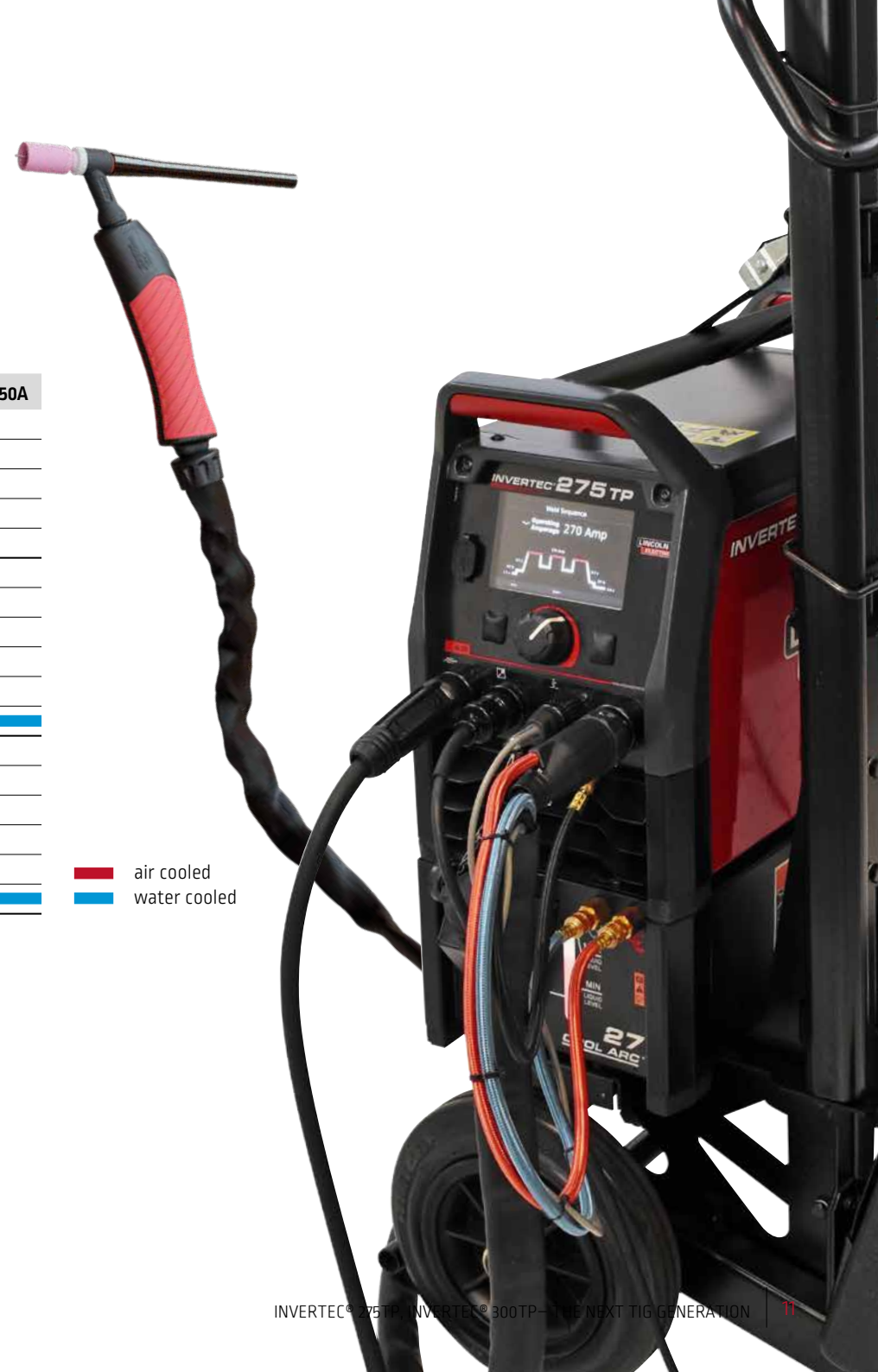
One machine, two processes

TIG torches

Series	Type	Rate	Application	110A	125A	135A	150A	180A	200A	220A	250A	350A	450A	
WTT2	9	35%	Professional	110A										
	17			125A										
	26			135A										
	18	100%		150A										
	20			180A										
PROTIG IIS	10	60%	Industrial	110A										
	20			125A										
	30			135A										
	40			150A										
	35W	100%		180A										
	40W			200A										
PROTIG NGS	10	60%	Industrial	110A										
	20			125A										
	30			135A										
	40			150A										
	35W	100%		180A										
	40W			200A										

■ air cooled
■ water cooled

Product	Item number	Rated output (A)		Welding current range (A)	Open circuit voltage (V)
		GTAW	SMAW		
Invertec® 275TP	K14243-1	270A@40% 230A@60% 200A@100%	250A@35% 230A@60% 180A@100%	5-270	72 (11V VRD)
Invertec® 300TP	K14387-1	300A@40% 260A@60% 230A@100%	300A@25% 250A@60% 210A@100%	5-300	



OPTIONS ON PROTIG NGS

The choice of the most demanding customers

Adjustable heads

Optional, adjustable torch bodies are available. Designed to make welding in limited access locations easier and comes with small and large heads mounted on air or water cooled bodies.



Customise your PROTIG NG torch with the following body bends and heads:

Air cooled body bent (10/20)	W000279381
Water cooled body bent (10W)	W000279382
Head PROTIG NG 10/10W	W000279383
Head PROTIG NG 20	W000279384

Modular system

All EB torches come with a single button module as standard. Additional control modules can be ordered.

Single button



Other buttons



Horizontal potentiometer	Vertical potentiometer	3 buttons module	Blade
W000279370 (4.7 Kohm)	W000279246 (4.7 Kohm)	WP10529-2	W000279245
WP10529-3 (10 Kohm)	WP10529-4 (10 Kohm)		

TIG RODS

MILD STEEL TIG RODS

LNT 26

AWS A5.18: ER70S-6
ISO 636-A: W 42 5 W3Si1

Shielding gas
I1: Inert gas Ar (100%)

- Solid rod for welding general construction in mild steel.
- Smooth bead appearance.

Product Name	Ø (mm)	Length (mm)	Weight per tube (kg)	Item Number
LNT 26	1.6	1000	5	T16T005R6S00
	2.0			T20T005R6S00
	2.4			T24T005R6S00
	3.0			T32T005R6S00

STAINLESS STEEL TIG RODS

LNT 304LSI

AWS A5.9: ER308LSi
ISO 14343-A: W 19 9 LSi

Shielding gas
I1: Inert gas Ar (100%)

- Used for welding of 304 and 304L stainless steel grades. The weld metal provides good corrosion resistance to intergranular attack from a range of liquid media. It is used for a wide range of applications including pipework and plate fabrication, vessel production etc.

Product Name	Ø (mm)	Length (mm)	Weight per tube (kg)	Item Number
LNT 304LSi	1.2	1000	5	580198
	1.6			582512
	2.0			582796
	2.4			582802
	3.2			583045

LNT 316LSi

AWS A5.9: ER316LSi
ISO 14343-A: W 19 12 3 LSi

Shielding gas
I1: Inert gas Ar (100%)

- Used for welding 316 and 316L stainless steel grades, in a wide range of applications including pipes and plates fabrication. The increased silicon content results in increased weld pool fluidity to give a smooth deposit appearance. The low carbon content increases the resistance to intergranular corrosion.

Product Name	Ø (mm)	Length (mm)	Weight per tube (kg)	Item Number
LNT 316LSi	1.0	1000	5	580259
	1.2			580235
	1.6			583915
	2.0			583922
	2.4			582819
	3.2			583571

TUNGSTEN ELECTRODES

A complete range of tungsten electrodes:

- Pure tungsten
- Tungsten + cerium
- ■ Tungsten + lanthanum
- Tungsten + rare earths

Product advantages:

- Very high life cycle
- Perfect arc ignition
- Very stable arc
- Tip longevity

Type	Metal		Arc stability	Striking	Lasting	Thermal resistance
	Aluminium	Steel & Stainless steel				
WP – pure tungsten	*		**	*	*	*
WC 20 – Cerium 2%		*	**	*	**	**
WL 15 – Lanthanum 1.5%	**	***	**	***	***	***
WL 20 – Lanthanum 2%	*	***	**	***	***	***
WS 20 – Rare earths 2%	*	*	**	***	***	***

*** Excellent ** Good * Average

ACCESSORIES

OPTIONS

Cool Arc® 27	K14334-1	
Freezcool (9.6 l cooling liquid)	W000010167	
Cart 24	K14191-1	
Extension Cord 15 m *	K14148-1	
Front cover	K14383-1	
Cart's interface for power source	K14384-1	
TIG PREMIUM TORCHES AIR	5 m	8 m
PROTIG IIIS 10 RL	W000382715-2	W000382716-2
PROTIG IIIS 20 RL	W000382717-2	W000382718-2
PROTIG IIIS 30 RL	W000382719-2	W000382720-2
PROTIG IIIS 40 RL	W000382721-2	W000382722-2
PROTIG NGS 10 EB	W000278394-2	W000278395-2
PROTIG NGS 20 EB	W000278396-2	W000278397-2
PROTIG NGS 30 EB	W000278398-2	W000278399-2
PROTIG NGS 40 EB	W000278400-2	W000278401-2
TIG PREMIUM TORCHES WATER	5 m	8 m
PROTIG IIIS 35W RL	W000382725-2	W000382726-2
PROTIG IIIS 40W RL	W000382727-2	—
PROTIG NGS 35W EB	W000278404-2	W000278405-2
PROTIG NGS 40W EB	W000278406-2	W000278407-2
TIG TORCHES AIR	4 m	8 m
WTT2 9 RL	W000278879	W000278922
WTT2 9 EB	W000278875	—
WTT2 17 RL	W000278884	W000278917
WTT2 17 EB	W000278882	W000278919
WTT2 26 RL	W000278890	W000278913
WTT2 26 EB	W000278887	W000278915
TIG TORCHES WATER	4 m	8 m
WTT2 18W RL	W000278898	W000278899
WTT2 18W EB	W000278896	W000278901
WTT2 20W RL	W000278894	W000278905
WTT2 20W EB	W000278892	W000278909
TORCHES ACCESSORIES		
Horizontal potentiometer	WP10529-3	
Vertical potentiometer	WP10529-4	
Up and Down buttons	WP10529-2	
REMOTE CONTROLS		
Remote control	K10095-1-15M	
Foot Amptrol™	K870	

* Only 2 Extension Cord for a maximum total length of 45 m can be used



COOL ARC® 27
K14334-1

TIG RODS



FREEZCOOL
W000010167



CART 24
K14191-1



CART'S INTERFACE FOR POWER SOURCE
K14384-1



GROUND CABLE



FRONT COVER
K14383-1



FOOT AMPTROL™
K870



REMOTE CONTROL
K10095-1-15M



PROTIG IIIS PROTIG NGS WTT2

TECHNICAL SPECIFICATION

POWER SOURCE

Product	Item number	Primary voltage	Fuse size (A)	I ₁ eff (A)	I ₁ max (A)	Max. input power (kW-kVA)	Rated output (A)		Welding current range (A)	Open circuit voltage (V)	Temperature range		EMC class	Weight (kg)	Dimensions H x W x D (mm)	Protection class
							GTAW	SMAW			Operating	Storage				
Invertec® 275TP	K14243-1	400V +/- 15% 3Ph	16	11.5	17.2	8.6 kW- 9.8 kVA	270A@40%	250A@35%	5-270	72 (11V VRD)	-10°C to +40°C	-25°C to +55°C	A	16	360 x 230 x 498	IP23
Invertec® 300TP	K14387-1						11,1kW 12,2 kVA	300A@40%								

COOLER

Product	Item number	Primary voltage	Cooling power @1l/min	Recommended coolant	Reservoir capacity (l)	Maximum pressure (MPa)	Temperature range		EMC class	Weight (kg)	Dimensions H x W x D (mm)	Protection class
							Operating	Storage				
Cool Arc® 27	K14334-1	565Vdc	850W	FREEZCOOL	2.2	7	-10°C to +40°C	-25°C to +55°C	A	8	160 x 230 x 498	IP23

CART

Product	Item number	Max. gas cylinder diameter (mm)	Max. gas cylinder height (mm)	Wheels diameter (mm)	Weight (kg)	Dimensions H x W x D (mm)	Other features
Cart 24	K14191-1	240	1700	250	33.8	1180 x 540 x 600	Low gas cylinder entry Drawer for storage of consumables Integrated cable management allowing for a neat work area Remote control and TIG rod housings Vertical design to save space in shop environments

THE NEXT TIG GENERATION

TEST RESULTS

Test results for mechanical properties, deposit or electrode composition and diffusible hydrogen levels were obtained from a weld produced and tested according to prescribed standards, and should not be assumed to be the expected results in a particular application or weldment. Actual results will vary depending on many factors, including, but not limited to, weld procedure, plate chemistry and temperature, weldment design and fabrication methods. Users are cautioned to confirm by qualification testing, or other appropriate means, the suitability of any welding consumable and procedure before use in the intended application.

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 information or advice about their use of our products. Our employees respond to enquiries to the best of their ability based on information provided to them by the customers and the knowledge they may have concerning the application. Our employees, however, are not in a position to verify the information provided or to evaluate the engineering requirements for the particular weldment. Accordingly, Lincoln Electric does not warrant or guarantee or assume any liability with respect to such information or advice. Moreover, the provision of such information or advice does not create, expand, or alter any warranty on our products. Any express or implied warranty that might arise from the information or advice, including any implied warranty of merchantability or any warranty of fitness for any customers' particular purpose is specifically disclaimed.

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.

Subject to Change – This information is accurate to the best of our knowledge at the time of printing. Please refer to www.lincolnelectric.eu for any updated information.



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