

# THE **NEXT** TIG GENERATION INVERTEC<sup>®</sup> 275TP



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**LINCOLN<sup>®</sup>**  
**ELECTRIC**



# THE NEXT TIG GENERATION

## Processes

- GTAW
- SMAW

## Materials

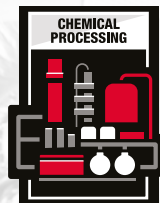
- Steel
- Stainless steel
- Low alloy steel

## Applications

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

The new **INVERTEC® 275TP** is a new generation TIG inverter 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® 275TP utilises digital communication systems and built-in communication devices such as USB, making it easy to monitor and track welding operations.

Modular system: Power sources 270A@40%, New compact and light cooler **COOL ARC® 27** with higher cooling efficiency, 2-wheeled **CART 24** constructed from solid metal, offering superior mobility and transportation in order to facilitate the most demanding welding applications in various segments.





# RUGGED RELIABILITY

## High duty cycle 270A@40%

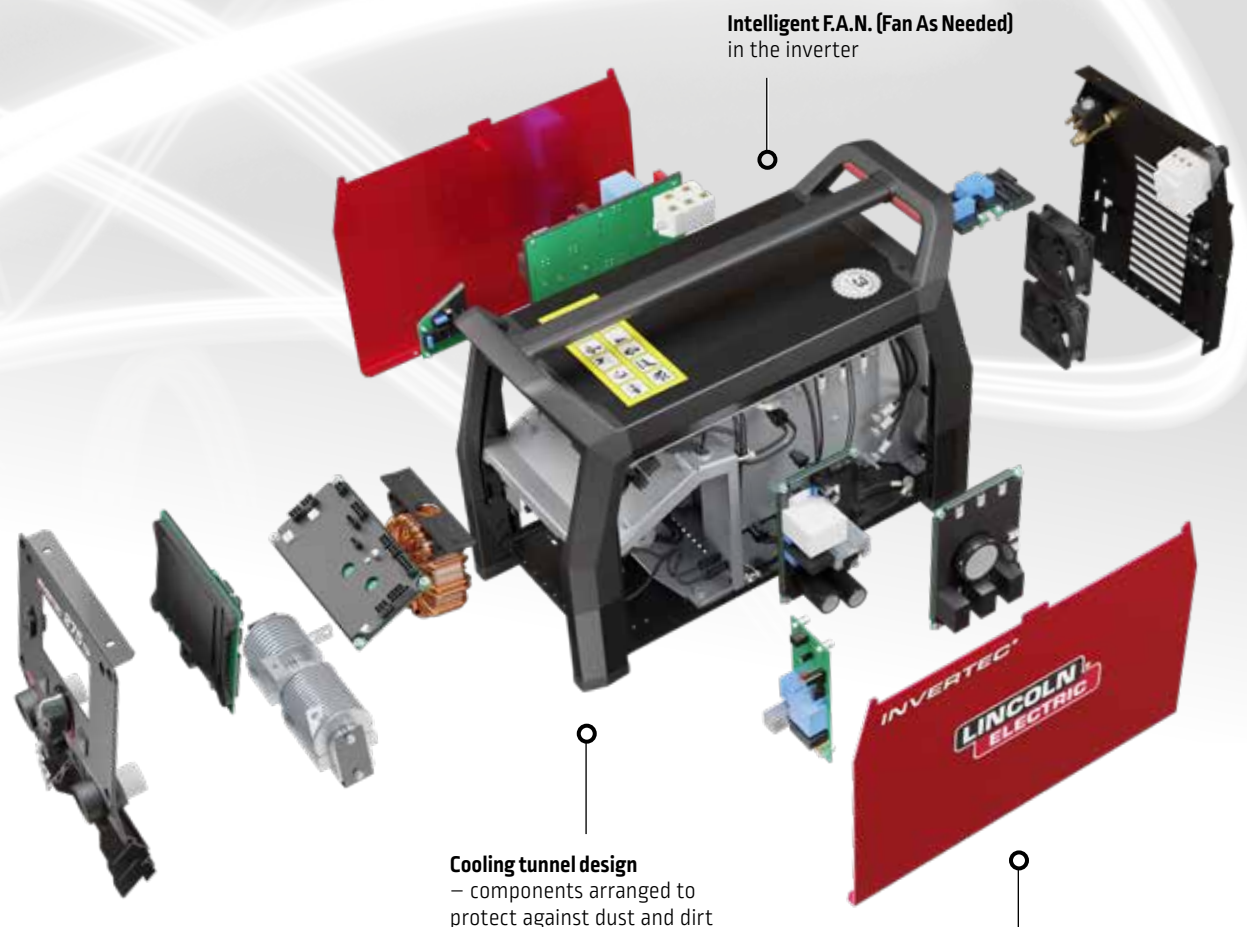
- High production efficiency
- Digital welding current control
- True HD tested – made for harsh environmental conditions

## 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

## Key technical data

- 400V ±15%, 3Ph 50/60Hz, generator ready
- Light weight – 16kg
- **270A@40% / 230A@60% / 200A@100%**
- Inverter platform product
- Idle power 19W and efficiency > 85%
- GTAW & STICK
- **GTAW manual and Synergic**
- **SMAW manual and Synergic – 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



## 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

LIGHT AND PORTABLE

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

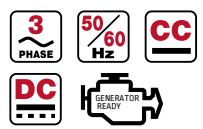
New stronger cooler

## CART 24

Stable design with robust steel pipe construction

# HIGH PERFORMANCE

# MODULAR DESIGN, FLEXIBLE CONFIGURATION



**Cellulosic**



	Item type	Item description	Item number
1	Power source	Invertec® 275TP	K14243-1
2	Cooler	Cool Arc® 27	K14334-1
3	Cart	Cart 24	K14191-1
4	TIG torches	WTT2	see accessories
		PROTIG IIIS	
		PROTIG NGS	
5	Welding consumables	TIG rods	see TIG ROD section
6	Welding cable	Ground cable 300A – 50 mm <sup>2</sup> – 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.





## 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

## COOL ARC<sup>®</sup> 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

# INNOVATIVE & INTUITIVE INTERFACE

- 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

200 Amp

New encoders for more precise adjustment

Colour display

1.5 s

10 %



# EASY COMMUNICATION



# THE NEXT TIG PROCESSES

## MOVE TO THE NEXT LEVEL OF TIG WELDING

### TIG DC 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**

### 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

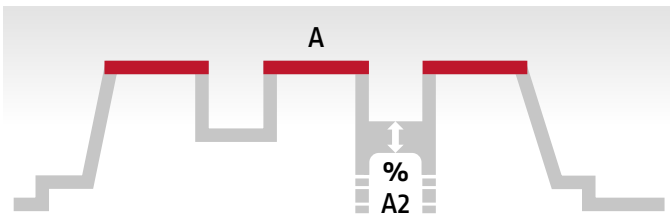
helps non-expert TIG welders to:

- 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

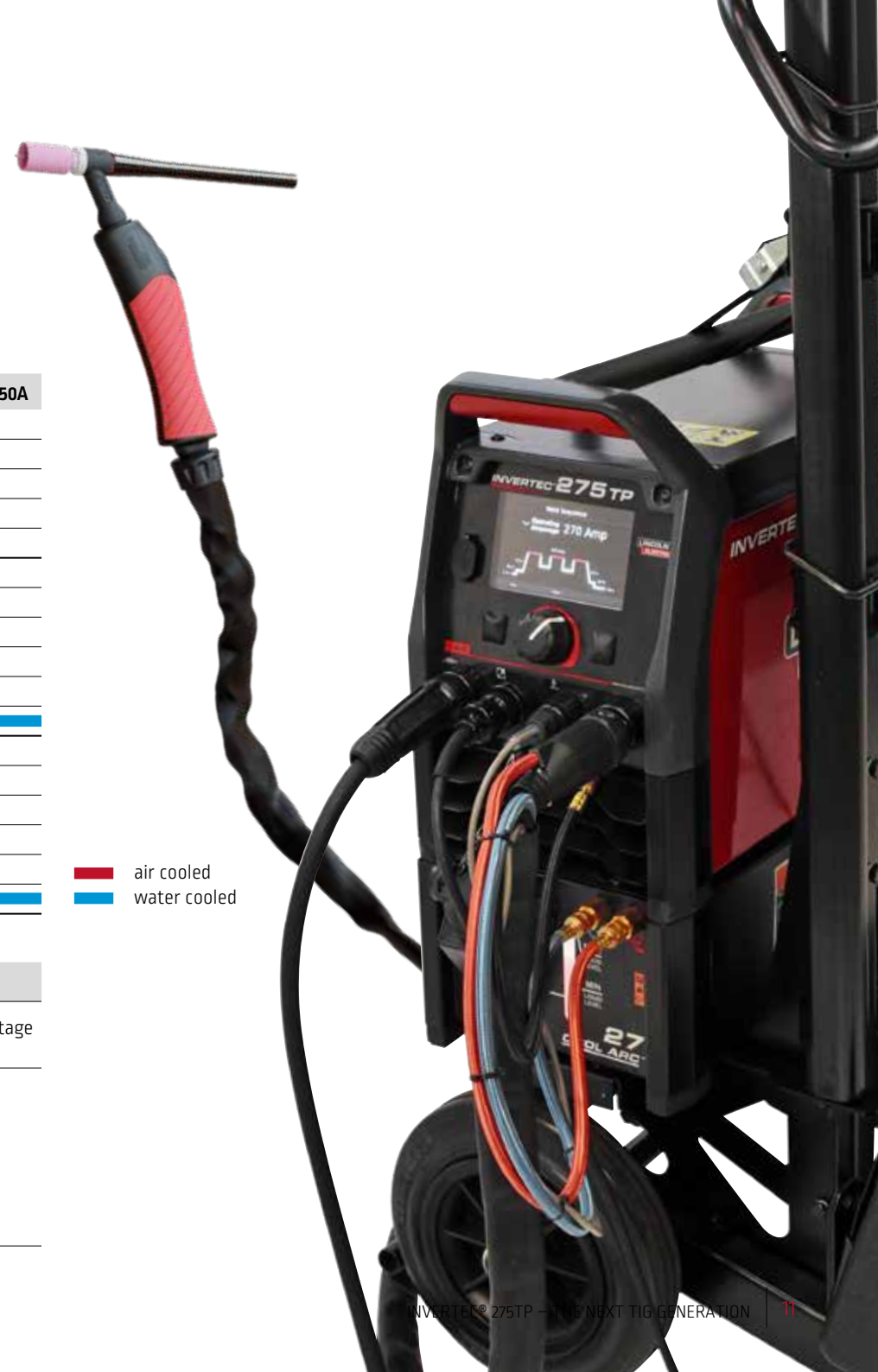
One machine, two processes

## 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%		110A										
				20	125A									
PROTIG IIS	10	60%	Industrial	110A										
				20	125A									
				30	135A									
				40	150A									
	35W	100%		110A										
				20	125A									
PROTIG NGS	10	60%	Industrial	110A										
				20	125A									
				30	135A									
				40	150A									
	35W	100%		110A										
				20	125A									

■ air cooled  
■ water cooled

	Rated Output		Output Range	
	Duty Cycle 40°C (based on a 10 min. period)	Output Current I <sub>2</sub>	Welding Current Range	Peak Open Circuit Voltage U <sub>0</sub>
GTAW	100%	200A	5-270A	84V
	60%	230A		
	40%	270A		
SMAW	100%	180A	5-250A	
	60%	230A		
	35%	250A		





# OPTIONS ON PROTIG NGS

The choice of the most demanding Clients

## 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 W3Si

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%)

- Solid rod with extra low carbon for welding stainless CrNiMo-steels, with high silicon for improved wettability.

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%)

- Solid rod with extra low carbon for welding stainless CrNiMo-steels, with high silicon for improved wettability.

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 <sub>1</sub> eff (A)	I <sub>1</sub> 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% 230A@60% 200A@100%	250A@35% 230A@60% 180A@100%	5-270	72 (11V V <sub>RD</sub> )	-10°C to +40°C	-25°C to +55°C	A	16	360 x 230 x 498	IP23

## 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.

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