

THE **NEXT** TIG GENERATION INVERTEC[®] 275TP



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LINCOLN[®]
ELECTRIC



THE NEXT TIG GENERATION

Processes

- GTAW
- SMAW

Materials

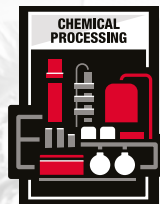
- Steel
- Stainless steel
- Low alloy steel

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%

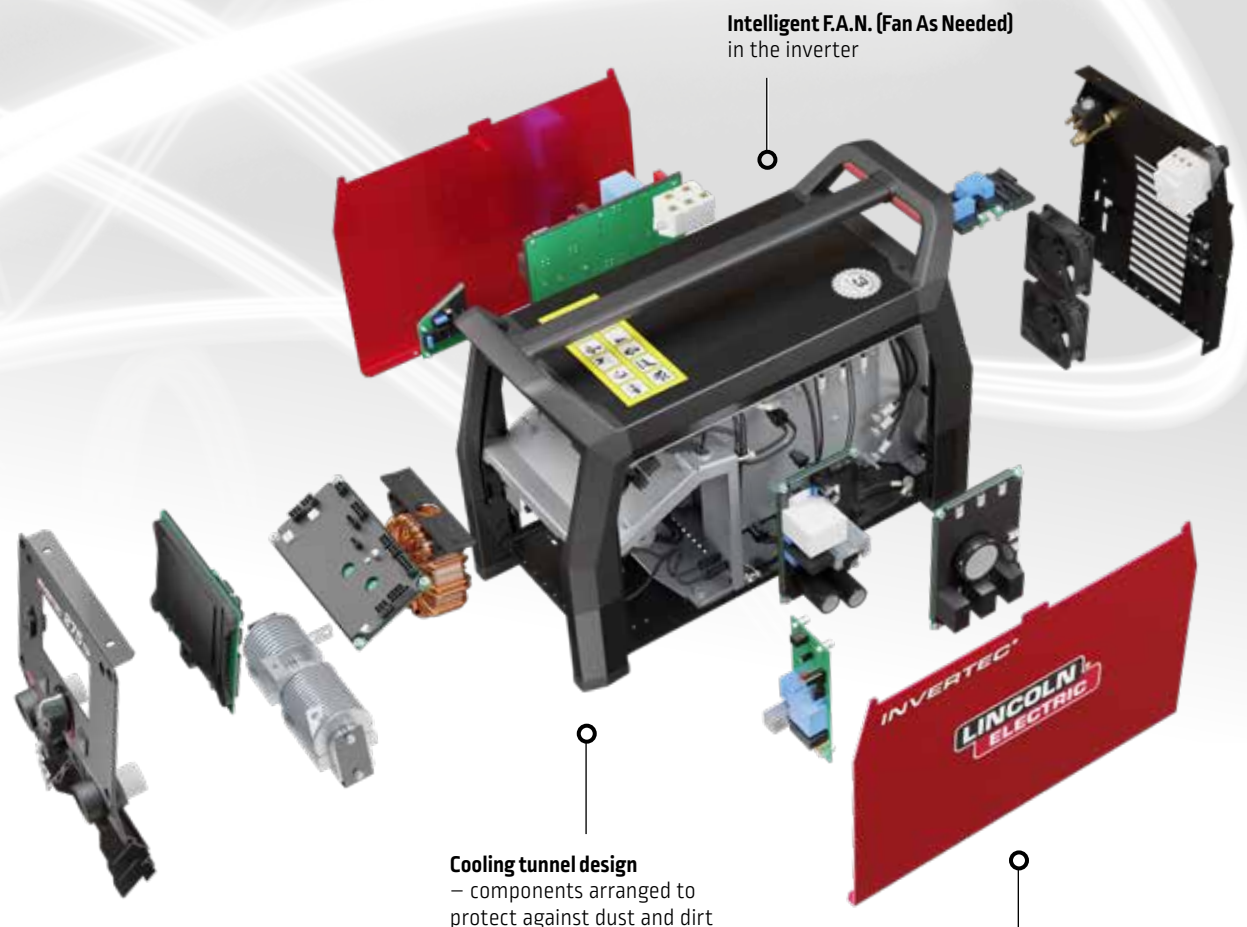
- High production efficiency
- Digital welding current control
- True HD tested – made for harsh environmental conditions

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



| | 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 ² – 5 m | GRD-300A-50-5M |
| 7 | Option | Foot remote control | K870 |
| 8 | Option | Manual 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® 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

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 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



EASY AND QUALITATIVE WELDING

GUIDED SETUP

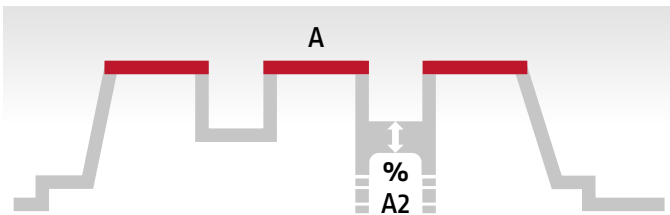
helps non-expert TIG welders to:

- 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

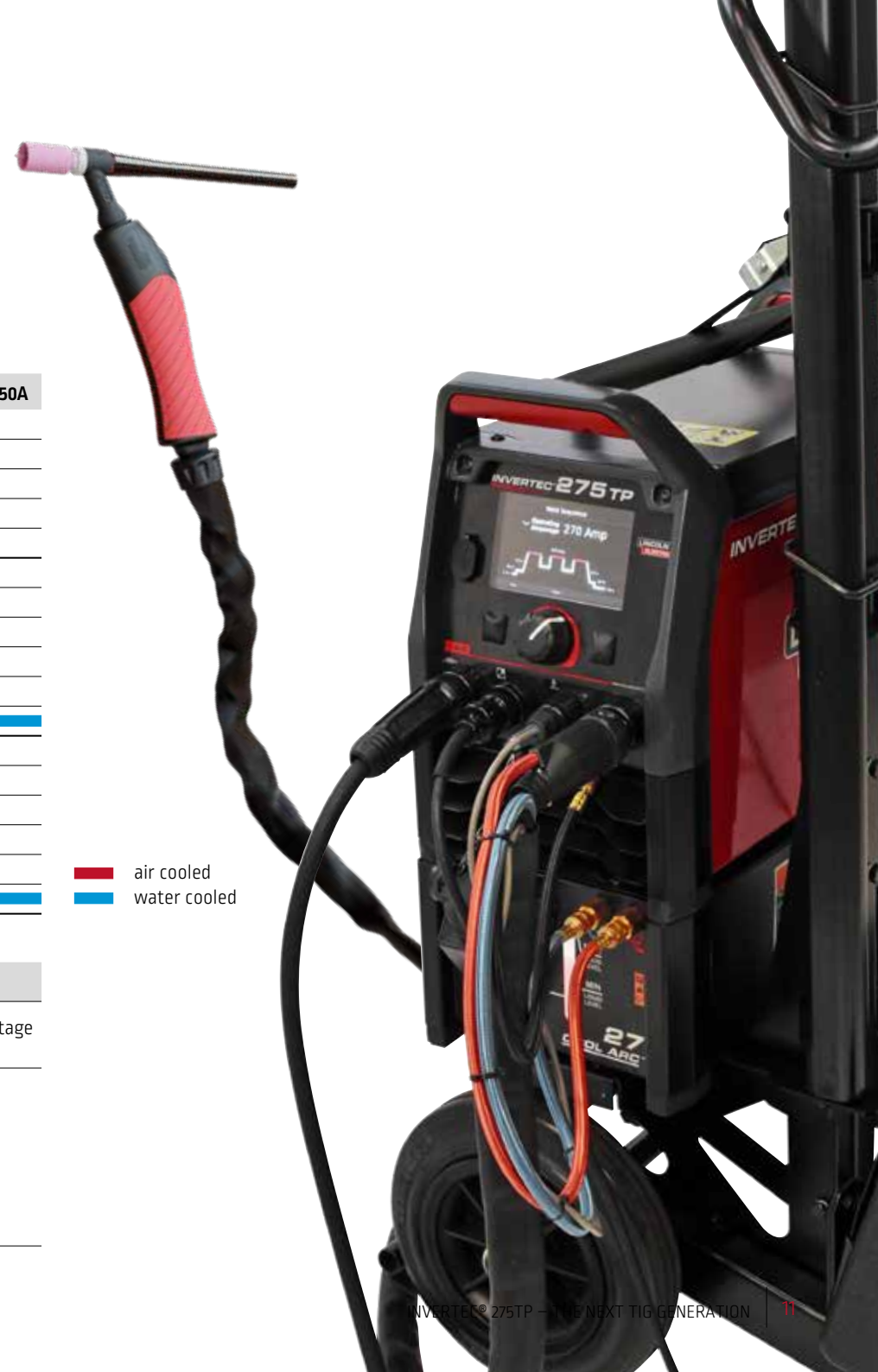
One machine, two processes

TIG torches

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

■ air cooled
■ water cooled

| | Rated Output | | Output Range | |
|------|---|-------------------------------|-----------------------|--|
| | Duty Cycle 40°C (based on a 10 min. period) | Output Current I ₂ | Welding Current Range | Peak Open Circuit Voltage U ₀ |
| 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 | |
| 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 | | |
| Manual remote control | K10095-1-15M | |
| Foot remote control | K870 | |

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



COOL ARC® 27
K14334-1

TIG RODS



CART 24
K14191-1

FREEZCOOL
W000010167



FOOT REMOTE CONTROL
K870



MANUAL REMOTE CONTROL
K10095-1-15M



PROTIG IIIS

PROTIG NGS

WTT2



GROUND CABLE

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 W x L 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 | 84 (11V VRD) | -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 W x L 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 W x L 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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