

TIG DC RANGE

PRESTOTIG 160 PFC / 180 FORCE
220 FORCE / 315 DC / 415 DC

PRECISION AND RELIABILITY

www.saf-fro.com

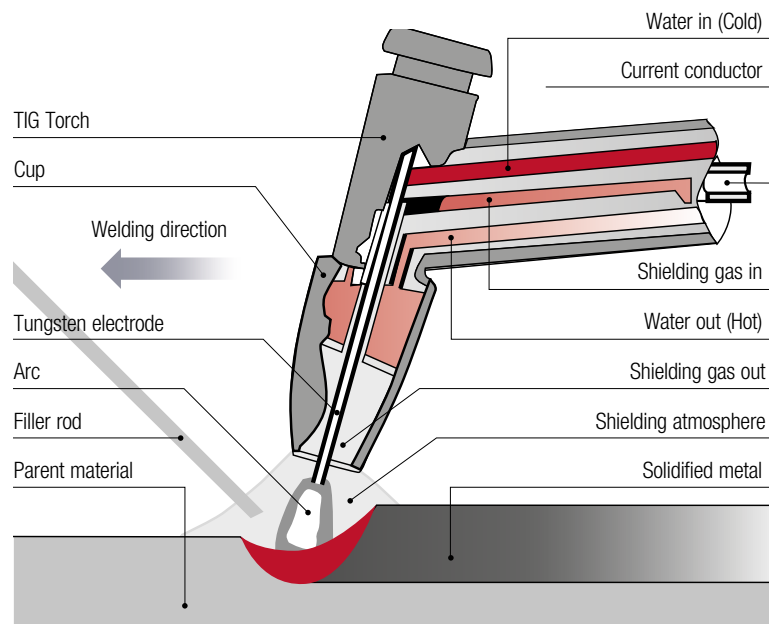

SAF-FRO

GTAW PROCESS

TIG welding produces an precise weld and is a commonly used as high quality welding process. TIG welding has become a popular choice of welding processes when high quality, precision welding is required. DC polarity is used in most welding applications. It produces a smoother welding output compared to AC. It creates a more stable arc, easier welding and less spatter.

ADVANTAGES

- Produces very high-quality, superior welds
- Leaves no slag or splatter
- Particularly high visual quality of weld seams
- Uses a number of shielding gases including Helium (He) and Argon (Ar)
- Is easily applied to thin materials and Welding yields low distortion
- Welds can be made with or without filler metal
- All welding positions are possible



APPLICATIONS WITH TIG DC

TIG MILD STEEL / STEEL WELDING

It is extremely common in fabrication because it is inexpensive compared with other steel alloys and is easy to weld, it is the most material in metal construction ahead of aluminum and stainless steel. Can be welded using tungsten inert gas (TIG) welding techniques, and the result is a clean and precise weld.

The biggest challenge is keeping the material distortion as low as possible. Selecting the correct welding process plays an important part in this.



TIG STAINLESS STEEL WELDING

The welding of stainless steel requires good material knowledge, because the many different alloys and steel types also have varied weld properties. The regular TIG stainless steel welding process has provided the lowest manual weld deposition rates and slowest weld speeds, making welding stainless steel much harder than normal steel.



TIG DC RANGE

| | DC Inverter | Reference | Voltage (V) | Input voltage tolerance | Frequency (Hz) | Output range (A) | Fuse Size (A) (slow) | Stick | Lift TIG | TIG HF | TIG PULSE | Up /down | Torch connector | PFC | Motor-generator compatibility | Cooling (Air / Water) | Memory | Meter (A / V) | Dimensions HxWxD (mm) | Weight (Kg) | Protection/ Insulation Class | Warranty (Years) |
|---------|---------------------|------------|-------------|-------------------------|----------------|------------------|----------------------|-------|----------|--------|-----------|----------|-----------------|-----|-------------------------------|-----------------------|--------|---------------|-----------------------|-------------|------------------------------|------------------|
| 1-phase | Prestotig 160 PFC | W000273518 | 230 | +/- 20% | 50/60 | 10-160 | 16 | • | • | • | | | S | • | • | Air | | | 205x345x460 | 9,5 | IP23S / H | 2 |
| | Prestotig 180 FORCE | W000382577 | 230 | +/- 20% | 50/60 | 5-160 | 16 | • | • | • | • | | S | • | • | Air / Water | • | • | 205x345x460 | 9,5 | IP23S / H | 2 |
| | Prestotig 220 FORCE | W000382578 | 230 | +/- 20% | 50/60 | 5-220 | 16 | • | • | • | • | | S | • | • | Air / Water | • | • | 205x345x460 | 9,5 | IP23S / H | 2 |
| 3-phase | Prestotig 315 DC | W000403580 | 400 | +/- 15% | 50/60 | 5-300 | 20 | • | • | • | • | • | C5B | | • | Air / Water | • | • | 349 x 247 x 502 | 22 | IP23S / H | 3 |
| | Prestotig 415 DC | W000403582 | 400 | +/- 15% | 50/60 | 5-400 | 30 | • | • | • | • | • | C5B | | • | Air / Water | • | • | 455 x 301 x 632 | 37 | IP23S / H | 3 |



Prestotig 160 PFC

Leading technology in TIG DC welding.
User friendly interface.

- Robust design – varnished PC boards
- Improved generator compatibility:
+/- 20% Input voltage variation, PFC controller
- Usable with great length of primary cable
(up to 70 m in 2,5 mm² section)
- Good welding in TIG HF and TIG Lift mode
- Hot start function and anti-sticking device
- Portable – light weight: only 9,5 kg
- Reduced noise – "intelligent" cooling fan
- Save energy – low current consumption
- Simple control panel – full control, easy set up
- 2 year warranty for labor and parts,
without limitation
- Remote control optionals



Input



Output



Processes

Stick, Lift TIG, TIG HF

Applications

- Boiler making
- Industrial plants, pipeline
- Metal and gantry construction
- Maintenance and repair



Unit Includes

Input cable (4 m)

Ground cable (3 m)

Gas hose (2 m)

Prestotig 180 FORCE

Smart switching, full flexibility.
Generator compatible,
ideal for site use.

- Smart switching 230/400V single phase
- HF and Lift TIG ignition
- HIGH speed PULSE to adjust the arc focus,
reduce distortion and increase travel speed
- Excellent arc characteristics for rutile,
basic and cellulosic electrodes up to 4,0 mm
- Fan as needed (F.A.N.™) built-in reduces
power and the intake of dust and fumes
- Remote control optionals
- Water Coolers and Carts available



Input



Output



Processes

Stick, Lift TIG, TIG HF,
TIG Pulse

Applications

- Light industrial/ Industrial
plants
- Maintenance and repair
- Process and food industry/
Metal construction



Unit Includes

Input cable (4 m)

Ground cable (3 m)

Gas hose (2 m)

Prestotig 220 FORCE

Advanced inverter technology for superior TIG performance. Very good HF arc ignition, stable, focused and fast arc.

- Excellent arc performance – perfect HF ignition, stable, focused and fast arc (for pulse and no pulsed arc)
- Simple control panel – full control, easy set up
- Energy efficient – PFC circuit, high efficiency, green mode
- Portable – Small, light weight
- PFC, protection 16A, 70 m input cable 2,5 mm², generator ready
- 2 year warranty – for labor and parts
- Remote control optionals
- Up/down function
- Water Coolers and Carts available

WARRANTY
2
YEARS

Input



Output



Processes

Stick, Lift TIG, TIG HF, TIG Pulse

Applications

- Light industrial, Motorsports
- Maintenance and repair
- Process and food industry



Unit Includes

Input cable (4 m)

Ground cable (3 m)

Gas hose (2 m)



PRESTOTIG 315 DC & 415 DC

Advanced inverter technology for superior DC TIG performance.
Industrial TIG welder for tough conditions.

- Full function user-friendly control panel layout with graph and a numeric display make it easy to set all welding parameters.
- Rugged construction : electrical safety (IP23S), potted PC boards and optimum airflow reduce contamination to extend the equipments life in the harshest environmental conditions.
- HF and Lift TIG ignition meeting all requirements.
- Perfect TIG HF starting with pre-settable starting mode.
- Complete TIG parameters setting: Pulse TIG with variable frequency that allows the welder to adjust the arc focus to suit the applications, 10 memory locations for personalized welding settings, TIG Spot welding.
- Water Coolers and Carts available.
- 3 year warranty – for labor and parts
- Remote control optionals
- Up/down function

Unit Includes

- Input cable (2 m)
- Gas connection kit



Input



Output



Processes

Stick, Lift TIG, TIG HF, TIG pulse

Applications

- Light industrial/ Industrial plants
- Maintenance and repair
- Process and food industry/ Metal construction

ALL MACHINES

BUILT FOR THE HEAVIEST INDUSTRIAL CONDITIONS

Developed and tested under the hardest conditions (TRUE HD) to grant the reliability you need.

- PCB board made in Lincoln Electric Company
- Fully encapsulated and vertically mounted
- Capable of surviving the harshest testing conditions
- Varnished and potted electronic boards



WATER COOLING SETUP



Freetig
W000382728



Coolertig 4
W000403941

SUGGESTED SETUP

TIG MILD STEEL / STEEL WELDING

| Welding thickness (mm) | Electrode diameter (mm) | Weld material (mm) | Current "DC" (A) | Argon (l/min) |
|------------------------|-------------------------|--------------------|------------------|---------------|
| 0,5 | 1,0 | – | 30-60 | 5 |
| 1,0 | 1,6 | – | 70-90 | 5 |
| 1,5 | 1,6 | 1,6 | 90-110 | 8 |
| 2,0 | 1,6 | 1,6 | 100-130 | 8 |
| 3,0 | 2,4 | 2,0 | 120-140 | 10 |
| 4,0 | 2,4 | 2,4 | 150-190 | 12 |
| 6,0 | 3,2 | 3,0 | 200-300 | 15 |
| > 6,0 | 4,0 | 3,0 | 300-400 | >15 |





TIG STAINLESS STEEL WELDING

| Welding thickness (mm) | Electrode diameter (mm) | Weld material (mm) | Current "DC" (A) | Argon (l/min) |
|------------------------|-------------------------|--------------------|------------------|---------------|
| 0,5 | 1,0 | – | 15-30 | 5 |
| 1,0 | 1,6 | – | 50-70 | 5 |
| 1,5 | 1,6 | 1,2 | 60-90 | 8 |
| 2,0 | 1,6 | 1,6 | 80-100 | 8 |
| 3,0 | 2,4 | 2,0 | 100-130 | 10 |
| 4,0 | 2,4 | 2,4 | 130-170 | 12 |
| 6,0 | 3,2 | 3,2 | 200-300 | 15 |
| > 6,0 | 4,0 | 3,2 | 300-400 | >15 |

TIG TORCHES

| Series | Size | Rate | Application | Extra Flex Cable | HD expendables | Up /Down | Ergonomic handle | Adjustable neck | Valve version available | Flex Neck version available | Round Handle | 110A | 125A | 135A | 150A | 180A | 200A | 220A | 250A | 350A | 450A | | | |
|------------|------|------|--------------|------------------|----------------|----------|------------------|-----------------|-------------------------|-----------------------------|--------------|------|------|------|------|------|------|------|------|------|------|--|--|--|
| WTT2 | 9 | 35% | Professional | | | | • | | • | • | | ■ | | | | | | | | | | | | |
| | 17 | | | | | | | • | | • | • | | ■ | | | | | | | | | | | |
| | 26 | | | | | | | • | | • | • | | ■ | | | | | | | | | | | |
| | 20 | 100% | | | | | • | | | | • | | ■ | | | | | | | | | | | |
| | 18 | | | | | | • | | | | • | | ■ | | | | | | | | | | | |
| PROTIG IIS | 10 | 60% | Industrial | • | • | | | | | | • | ■ | | | | | | | | | | | | |
| | 20 | | | • | • | | | | | | • | ■ | | | | | | | | | | | | |
| | 30 | | | • | • | | | | | | | • | ■ | | | | | | | | | | | |
| | 40 | | | • | • | | | | | | | • | ■ | | | | | | | | | | | |
| | 10W | 100% | | • | • | | | | | | | • | ■ | | | | | | | | | | | |
| | 35W | | | • | • | | | | | | | • | ■ | | | | | | | | | | | |
| | 40W | | | • | • | | | | | | | • | ■ | | | | | | | | | | | |
| PROTIG NGS | 10 | 60% | Industrial | • | • | • | • | • | | | | ■ | | | | | | | | | | | | |
| | 20 | | | • | • | • | • | • | • | | | | ■ | | | | | | | | | | | |
| | 30 | | | • | • | • | • | • | • | | | | ■ | | | | | | | | | | | |
| | 40 | | | • | • | • | • | • | • | | | | ■ | | | | | | | | | | | |
| | 10W | 100% | | • | • | • | • | • | • | • | | | ■ | | | | | | | | | | | |
| | 35W | | | • | • | • | • | • | • | • | | | ■ | | | | | | | | | | | |
| | 40W | | | • | • | • | • | • | • | • | | | ■ | | | | | | | | | | | |
| | 40W | | | • | • | • | • | • | • | • | | | ■ | | | | | | | | | | | |

Choose your module & your plug kit for Protig NG S

| | | |
|----------------|---|--|
| Button modules |  |  or  |
| Reference | WP10529-2 | WP10529-4 (10 kΩ) WP10529-3 (10 kΩ) |
| Plug kit | <ul style="list-style-type: none"> No plug kit needed Torch is connected to the machine through the C5B plug (5 pins) | <p style="text-align: center;">+</p>  WP10529-9 |
| Work with | <ul style="list-style-type: none"> Prestotig 315/415 DC Prestotig 315 AC/DC | <ul style="list-style-type: none"> Prestotig 315/415 DC Prestotig 315 AC/DC |

Adapters

For old torches with central gas to be connected to power sources with separate gas, use W000306140.



Dinse 9 to 13 mm
W000306139



For torches with separate gas to be connected to power sources with central gas, use W000306141.



Dinse 13 to 9 mm
038055011



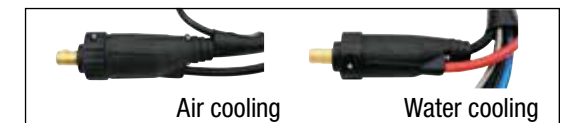
■ air cooled
■ water cooled

Connection



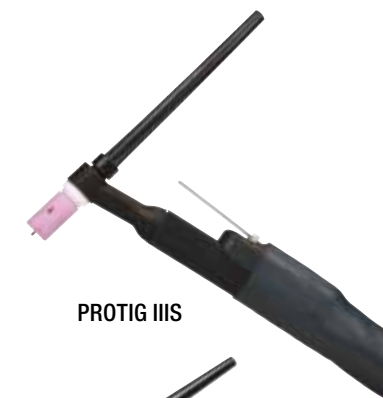
New Connector

Shaped cable output for a better robustness.



TIG TORCHES

| | | | PRESTOTIG | PRESTOTIG | PRESTOTIG | PRESTOTIG | PRESTOTIG |
|----------------------------------|--------------|--------------|------------|------------|------------|------------|------------|
| | | | 160 PFC | 180 Force | 220 Force | 315 DC | 415 DC |
| | | | W000273518 | W000382577 | W000382578 | W000403580 | W000403582 |
| TIG Premium torches Air | 5 m | 8 m | | | | | |
| PROTIG IIS 10 RL C5B-S | W000382715-2 | W000382716-2 | • | • | • | | |
| PROTIG IIS 20 RL C5B-S | W000382717-2 | W000382718-2 | • | • | • | | |
| PROTIG IIS 30 RL C5B-S | W000382719-2 | W000382720-2 | • | • | • | • | • |
| PROTIG IIS 40 RL C5B-S | W000382721-2 | W000382722-2 | | | • | • | • |
| PROTIG NGS 10 EB C5B-S | W000278394-2 | W000278395-2 | • | • | • | | |
| PROTIG NGS 20 EB C5B-S | W000278396-2 | W000278397-2 | • | • | • | | |
| PROTIG NGS 30 EB C5B-S | W000278398-2 | W000278399-2 | • | • | • | • | • |
| PROTIG NGS 40 EB C5B-S | W000278400-2 | W000278401-2 | | | • | • | • |
| TIG Premium torches Water | 5 m | 8 m | | | | | |
| PROTIG IIS 10W RL C5B-S | W000382723-2 | W000382724-2 | | • | • | • | |
| PROTIG IIS 35W RL C5B-S | W000382725-2 | W000382726-2 | | | | • | • |
| PROTIG IIS 40W RL C5B-S | W000382727-2 | – | | | | | • |
| PROTIG NGS 10W EB C5B-S | W000278402-2 | W000278403-2 | | • | • | • | |
| PROTIG NGS 35W EB C5B-S | W000278404-2 | W000278405-2 | | | | • | • |
| PROTIG NGS 40W EB C5B-S | W000278406-2 | W000278407-2 | | | | | • |
| TIG torches Air | 4 m | 8 m | | | | | |
| WTT2 17 RL S | W000278883 | W000278918 | • | • | • | | |
| WTT2 17 EB S | W000278881 | W000278920 | • | • | • | | |
| WTT2 26 RL S | W000278888 | W000278914 | • | • | • | | |
| WTT2 26 EB S | W000278886 | W000278916 | • | • | • | | |
| WTT2 26 RL C5B | W000278890 | W000278913 | | | | • | • |
| WTT2 26 EB C5B | W000278887 | W000278915 | | | | • | • |
| TIG torches Water | 4 m | 8 m | | | | | |
| WTT2 18W RL C5B | W000278898 | W000278899 | | | | • | • |
| WTT2 18W EB C5B | W000278896 | W000278901 | | | | • | • |
| WTT2 20W RL S | W000278893 | W000278906 | | • | • | | |
| WTT2 20W EB S | W000278891 | W000278911 | | • | • | | |
| WTT2 20W RL C5B | W000278894 | W000278905 | | | | • | • |
| WTT2 20W EB C5B | W000278892 | W000278909 | | | | • | • |



PROTIG IIS



PROTIG NGS



WTT2



PROTIG Wear part box

| | |
|--------|------------|
| 10/10W | W000606441 |
| 20 | W000306442 |
| 30 | W000306443 |
| 40/35W | W000306444 |
| 40W | W000306445 |

ACCESSORIES & OPTIONS

| | | PRESTOTIG 160 PFC | PRESTOTIG 180 Force | PRESTOTIG 220 Force | PRESTOTIG 315 DC | PRESTOTIG 415 DC |
|--|-----------------|----------------------|------------------------|------------------------|---------------------|---------------------|
| | | W000273518 | W000382577 | W000382578 | W000403580 | W000403582 |
| Water cooler | | | | | | |
| FREEZCOOL | W000010167 | • | • | • | | |
| FREEZCOOL (red) T°-27°C 10 l | W000010167 | | | | • | • |
| FREEZTIG | W000382728 | | | • | | |
| COOLERTIG 3 | W000403940 | | | | • | |
| COOLERTIG 4 | W000403941 | | | | | • |
| Cable Kits | | | | | | |
| KIT 25C50 – 200A – 25 mm ² – 3 m | W000260684 | • | • | | | |
| KIT 35C50 – 300A – 35 mm ² – 4 m | W000011139 | | | • | • | |
| KIT 50C50 – 400A – 50 mm ² – 4 m | W000260681 | | | | • | • |
| Ground cable assemblies | | | | | | |
| Clamp, Fast-mate, cable 300A – 50 mm ² – 5 m | GRD-300A-50-5M | | | | • | |
| Clamp, Fast-mate, cable 300A – 50 mm ² – 10 m | GRD-300A-50-10M | | | | • | |
| Clamp, Fast-mate, cable 400A – 70 mm ² – 5 m | GRD-400A-70-5M | | | | | • |
| Clamp, Fast-mate, cable 400A – 70 mm ² – 10 m | GRD-400A-70-10M | | | | | • |
| Remote controls | | | | | | |
| Foot amptrol, 6 pins, 7,6 m | K870 | | | | • | • |
| Control box, 15 m | K14147-1 | | | | • | • |
| Remote controls 10 m | W000219557 | | • | • | | |
| Foot Remote controls 10 m | W000241602 | | • | • | | |
| Extension 15 remote control | K14148-1 | | | | • | • |
| Cart | | | | | | |
| CART 3 | W000404145 | | | | • | |
| CART 4 | W000404146 | | | | | • |
| Universal Trolley | W000375730 | • | • | • | | |



FREEZCOOL
W000010167

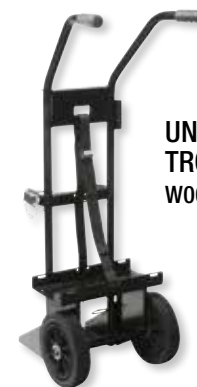
CABLE KITS
W000011139



FOOT AMPCTRL
K870



**UNIVERSAL
TROLLEY**
W000375730



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 |
| | 2,4 | | | T32T005R6S00 |
| | 3,0 | | | |

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 |
| | 2,4 | | | 583045 |
| | 3,2 | | | |

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:

Product advantages:

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

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

| 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



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CUSTOMER ASSISTANCE POLICY

The business of Lincoln Electric 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 inquiries 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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