

# TIG AC/DC WELDER

● Heavy Industrial ● Medium Industrial

TIG AC/DC 281 Pulse

The TIG AC/DC 281 Pulse is an industrial, heavy-duty, powerful, portable, and versatile welding machine. The professional pulse features of the machine combined with its HF start, make it ideal for welders looking to perform high-quality TIG welds even on very thin materials with no distortion.

The TIG AC/DC 281 Pulse welding machine is an inverter-based arc welding power source with advanced waveforms, and pulse controls making it the best professional choice for all industrial workshops.

The TIG AC/DC 281 Pulse welding machine offers excellent welding performance and various professional functions. A 5-inch color display with automatic controls makes the setup and operation quick and easy. Furthermore, All the features can be easily customized and saved in the available memory settings.

## FEATURES

- A 5-inch LCD screen allows both experienced and novice users to operate the device quickly and easily, ensuring correct setting and parameter selection, reducing parameter setting time, and increasing actual welding time.
- Capability of TIG welding on aluminum and steel workpieces up to 3/8 inch (9.5 mm) of thickness with a maximum output of 280 amps.
- AC Waveforms:
  - Progressive square wave for increased torch speed, depth of penetration, and rapid cooling of weld pools.
  - Sine wave for simulating a conventional power source and reducing noise level.
  - Triangular wave for reducing the overall heat input and increasing the peak current to control the distortion of thin materials.
- Up to 10 memory locations to store important weld parameters. Adjustable soft welding start and minimal distortion on thinner materials.
- Adjustable powerful start which is required for thicker materials. Adjustable balance settings which provide full control to mix the cleaning and penetration sequences, during aluminum welding.
- High frequency (HF) for perfect arc starts and stability.
- Tested in (104°F/40°C), designed for the toughest conditions.
- Digital control of all welding parameters.
- Amperage control is accessible by foot pedal.



## PROCESSES



GTAW (AC/DC) - HIGH FREQUENCY START

SMAW

- Pulse TIG welding allows for better arc control and reduces work piece distortion.
- Ideal for welding thin and thick materials.
- Excellent welding characteristics in Stick mode with the most rods.
- Ability to use up to 165 feet (50 meters) leads without any power loss at the welding circuit.
- Digital adjustment of pre-flow, initial amperage, welding amperage, initial slope, pulse parameters, final slope, and post flow on LCD screen.
- Arc Force automatically selects the best welding arc dynamics (in Stick mode).
- Ability to pre-set all welding parameters.
- Fan cooled and thermally protected against overheating.
- Ability to communicate with Canaweld auxiliary cooling systems.
- Metal face panel.
- Generator compatible.
- Comprehensive 3 years warranty for the machine and 5 years for some parts.
- Innovative wind tunnel.

### TIG AC/DC 281 Pulse Technical Specification

Process	Unit	TIG AC	TIG DC	Stick
Display Type		5 inch LCD		
Input Voltage, Single Phase, 50/60 Hz	V	208 to 240 (±10%)		
Primary Current@Max Welding Current	A	50.5		50
Maximum Primary Effective Current (I1 eff max)	A	27.8		29
Welding Current Range	A	5 - 280		5 - 225
Welding Current @ 30% Duty Cycle in 104° F (40° C)	A	280		225
Welding Current @ 60% Duty Cycle in 104° F (40° C)	A	230		160
Welding Current @ 100% Duty Cycle in 104° F (40° C)	A	180		140
Open Circuit Voltage	V	72		72
<b>Stick Parameters</b>				
Stick Modes				AC and DC
Arc Force				0 – 10
Hot Start				0 - 10
<b>TIG Parameters</b>				
TIG Ignition Types		TIG HF , TIG Lift		
TIG Process Modes		Pulse, Stitch, Cold, No-Pulse		
TIG Output Control		2T , 4T , Foot Pedal		
Pre-flow	sec	0.05 – 5.0		
Initial Amperage	A	5 – 280		
Initial Slope	sec	0.0 – 20.0		
Peak Welding Amperage	A	5 – 280		
Final Slope	sec	0.0 – 20.0		
Final Amperage	A	5 – 280		
Post flow	sec	0.1 – 25		
<b>TIG Pulse Parameters</b>				
Pulse Functions		Pre Flow, Initial Amperage, Initial slope, Welding Amperage, Base Amperage, Pulse Duty Cycle, Pulse frequency, Final slope, Final Amperage, Post Flow		
Base Amperage	A	5 – 280		
Pulses Frequency	pps	0.5 – 999		
Pulse Duty Cycle	%	5 – 95		
<b>TIG AC Parameters</b>				
AC Waveshape		Squarewave, Sine wave, Triangular wave		
AC Controls		Frequency , Balance		
Balance	%	50 – 75		
Frequency	Hz	50 – 250		
<b>TIG Sequence Control Parameters</b>				
ON Time( Stitch and Cold)	sec.	0.1 – 10.0		
OFF Time( Stitch and Cold)	sec.	0.1 – 10.0		
Maximum Material Thickness (TIG)		3/8 in. (9.5 mm)		
Maximum Electrode Diameter (Stick)				3/16 in. (4.8 mm)
Minimum Power of Generator	kw	12.5		
Cooling of Torch		Air / Water		
Weight	lb. (Kg)	40 lb. (18 kg)		
Dimensions Including Handle (D, W, H)	in. (mm)	23.6 x 8 x 15.7 inch (600 X 205 X 400 mm)		

CANAWELD RESERVES THE RIGHTS OF CHANGING THE SPECIFICATION WITHOUT NOTICE

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## TIG Process Advantageous in comparison with other arc welding process:

**TIG welding machines** are mainly used for welding clean and root passes. They are very popular when very thin materials need to be welded.

In TIG process the machine amperage is controlled with a foot pedal during welding; which is not available in other welding processes.

TIG welding is a very versatile process for many reasons.

First, the shielding gas (argon) used in TIG welding can be used for all welding applications. Also, almost all ferrous and non-ferrous metals can be welded with TIG AC/DC. Steel and stainless steel, aluminum, titanium, nickel alloy, magnesium, copper and brass, are some examples.

Welding in all positions are possible with TIG process. Another versatility of TIG process is that filler material isn't always necessary. There is no need to clean the weld area after welding. It means that the welded part is more or less ready for use once the welding is complete.



**Application:** Aerospace Industries, Aluminum Industries, Heavy and medium duty Fabrication, Car Industries, Automotive Parts and Bodies, Truck and Trailers manufacturing, Work/Service Trucks, Railcar, Train manufacturing, Machine or parts manufacturing, Medical Industries, Boat/Yacht, shipbuilding, Food Industries and High Purity Processing, Training school, Civil Construction, Mechanical Contractors, Refineries, Installation, Maintenance and repair-field operation, Plumbing & HVAC .

#### Available Models :

TIG AC/DC 281 PULSE , Air Cooled Package (PLC2380155)

TIG AC/DC 281 PULSE , Water Cooled Package (PLC2380156)


The TIG AC DC 281 Pulse machine offers two modes of operation :

- Air-cooled mode for welding up to 200A and water-cooled mode for heavy-duty, up to 280A .
- the equipment automatically restricts the TIG welding amperage to 200A (in AC mode ) and 250A (in DC mode ) to prevent possible damage to the air-cooled torch .



## What Is Included

### TIG AC/DC 281 Pulse (Air Cooled Package)

ITEM	Description	PART NO.	
TIG AC/DC 281 Pulse	Machine TIG AC/DC 281 PULSE	PLB2380155	
Ground Clamp Set	400 A, 10ft, Cable Size AWG 1 (42.4 mm) , Cable Plug 35-70	ALP1980462	
Electrode Holder Set	400 A, 10ft , Cable Size AWG 1 (42.4 mm), Cable Plug 35-70	ALP1980463	
TIG Torch	Premium TIG Torch T3FX, Air cooled, 240 AMP, 12.5 ft, 9 Pin	CWT3FX-S1-4M-SL-ATP18	
Regulator	UL-Approved FM1400RH Series, 60 CF, Single Stage For Argon	CWFM-1400-60CF-AR	
Gas Welding Hose	1/4" Argon Inert Hose (10 ft)	TLJ1080188	
TIG 281 Air Cool Consumable Package (ALPTIGCON281)	Long Back Cap	CWT3LBC	
	Heat Zone Isolator	CWT3SN	
	Head Gasket	CWT3GS	
	Spanner	CWAT-SP	
	Ceramic Cup #6 3/8" (10 mm)	CWT3CC06	
	Ceramic Cup #7 7/16" (11 mm)	CWT3CC07	
	Ceramic Cup #8 1/2" (12.5 mm)	CWT3CC08	
MIX OF TEN TIG TUNGSTEN ELECTRODE (CWMIX10)	Collet Body 1/16" (1.6 mm)	CWT3CB16	
	Collet Body 3/32" (2.4 mm)	CWT3CB24	
	Collet Body 1/8" (3.2 mm)	CWT3CB32	
	TIG Tungsten Electrode 1.6 white	CTE500-WH-1167	
	TIG Tungsten Electrode 1.6 Red	CTE500-RE-1167	
	TIG Tungsten Electrode 2.4 White	CTE500-WH-3327	
	TIG Tungsten Electrode 2.4 Blue	CTE500-BL-3327	
	TIG Tungsten Electrode 2.4 Gold	CTE500-GO-3327	
	TIG Tungsten Electrode 2.4 Red	CTE500-RE-3327	
	TIG Tungsten Electrode 3.2 White	CTE500-WH-0187	
TIG Tungsten Electrode 3.2 Blue	CTE500-BL-0187		
TIG Tungsten Electrode 3.2 Gold	CTE500-GO-0187		
TIG Tungsten Electrode 3.2 Red	CTE500-RE-0187		
Foot Pedal	Foot Pedal 9 Pin Connector for TIG AC/DC 281 Pulse	TGJ2580472	

# TIG AC/DC WELDER

TIG AC/DC 281 Pulse

Water Cooled Package

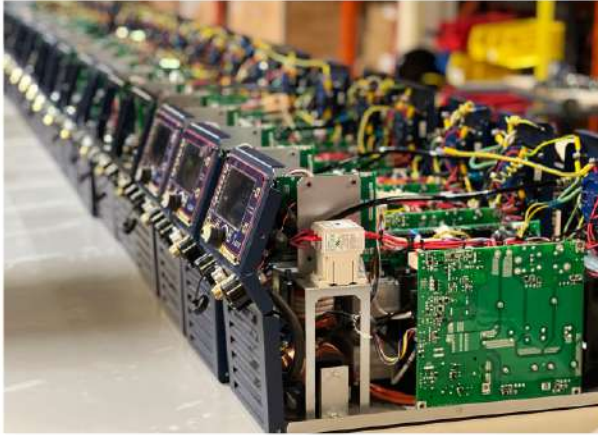


CU-H1  
Cooling Unit

## What Is Included













### TIG AC/DC 281 Pulse (Water Cooled Package)

ITEM	Description	PART NO.	
TIG AC/DC 281 Pulse	Machine TIG AC/DC 281 PULSE	PLB2380155	
Ground Clamp Set	400 A, 10ft, Cable Size AWG 1 (42.4 mm) , Cable Plug 35-70	ALP1980462	
Electrode Holder Set	400 A, 10ft , Cable Size AWG 1 (42.4 mm), Cable Plug 35-70	ALP1980463	
TIG Torch	Premium water Cooled Tig Torch 18SC, Heavy Duty, 12.5 ft	CWSG18SC-S1-12-4M	
Regulator	UL-Approved FM1400RH Series, 60 CF, Single Stage For Argon	CWFM-1400-60CF-AR	
Gas Welding Hose	1/4" Argon Inert Hose (10 ft)	TLJ1080188	
TIG TORCH CONSUMABLE SET (ALPTORCHCON18)	collet 1.6	CWU10N23	
	collet 2.4	CWU10N24	
	collet 3.2	CWU10N25	
	STANDARD NOSE COLLET BODY 3.4 mm BORE	CWUNCB-53	
	Gas Lens Cup 6 mm	CWU54N16	
	Gas Lens Cup 8 mm	CWU54N14	
	Back Cap Long	CWU57Y02	
MIX OF TEN TIG TUNGSTEN ELECTRODE (CWMIX10)	Back Cap Medium	CWU300M	
	TIG Tungsten Electrode 1.6 white	CTE500-WH-1167	
	TIG Tungsten Electrode 1.6 Red	CTE500-RE-1167	
	TIG Tungsten Electrode 2.4 White	CTE500-WH-3327	
	TIG Tungsten Electrode 2.4 Blue	CTE500-BL-3327	
	TIG Tungsten Electrode 2.4 Gold	CTE500-GO-3327	
	TIG Tungsten Electrode 2.4 Red	CTE500-RE-3327	
	TIG Tungsten Electrode 3.2 White	CTE500-WH-0187	
	TIG Tungsten Electrode 3.2 Blue	CTE500-BL-0187	
	TIG Tungsten Electrode 3.2 Gold	CTE500-GO-0187	
TIG Tungsten Electrode 3.2 Red	CTE500-RE-0187		
Foot Pedal	Foot Pedal 9 Pin Connector for TIG AC/DC 281 Pulse	TGJ2580472	
Cooling Unit	Cooling Unit CU-H1	CGB10084320	



The procedure of designing, production, assembling, and strict quality control of products are according to IEC, CSA, and other international standards. This procedure ensures the highest possible quality level. **Therefore, CANAWELD warranties 3 years for the machines and 5 years for some parts.**

### OPTIONAL ACCESSORIES

PRODUCT	PART NO.	
Premium TIG Torch T3FX, Air cooled, 240 AMP, 12.5 ft,9Pin	CWT3FX-S1-4M-SL-ATP18	
TIG Torch Water Cooled 12 ft	CWSG18SC-S1-12-4M	
TIG Torch Water Cooled 25 ft	CWSG18SC-S1-25-8M	
Electrode holder Set , 400 A, 10ft, Cable Size AWG 1 (42.4 mm), Cable Plug 35-70	ALP1980463	
Electrode holder Set , 400 A, 20ft, Cable Size AWG 1 (42.4 mm), Cable Plug 35-70	ALP1980468	
Electrode holder Set , 400 A, 30ft, Cable Size AWG 1 (42.4 mm), Cable Plug 35-70	ALP1980469	
Electrode holder Set , 400 A, 50ft, Cable Size AWG 1 (42.4 mm), Cable Plug 35-70	ALP1980470	
Ground Clamp Set , 400 A, 10ft, Cable Size AWG 1 (42.4 mm), Cable Plug 35-70	ALP1980462	
Ground Clamp Set , 400 A, 20ft, Cable Size AWG 1 (42.4 mm), Cable Plug 35-70	ALP1980459	
Ground Clamp Set , 400 A, 30ft, Cable Size AWG 1 (42.4 mm), Cable Plug 35-70	ALP1980471	
Ground Clamp Set , 400 A, 50ft, Cable Size AWG 1 (42.4 mm), Cable Plug 35-70	ALP1980472	
Foot Pedal	TGJ2580472	
Regulator	CWFM-1400-60CF-AR	
Regulator	CW-RMV-250-30LM-AR	
Gas Inlet	CGA3180121	
Superior True-View Welding Helmet Series	CWPOWER-990T-BLK	
Classic Duty Welding Helmet Series	CWELITE-550S-BLK	
Premium All-Function Welding Helmet Series	CWPOWER-980S-BLK	
Premium All-Function Welding Helmet Series	CWPOWER-980S-CO	