



OVERVIEW / KEY SPECS

TIG-500 AC/DC

500-Class AC/DC Pulse TIG Welder

A product specification reference for TIG-500 AC/DC, including key processes, technical data, controls, and buyer selection details.



OUTPUT CLASS

500A

HIGHEST CURRENT AC/DC TIG PAGE

PROCESS

AC/DC TIG

WITH PULSE TIG AND MMA

INPUT POWER

380V

3-PHASE INDUSTRIAL SUPPLY

OPTIONS

2

AIR OR WATER COOLED

QUICK SPECS

FIELD	SPECIFICATION
Product type	500-class IGBT AC/DC pulse TIG welding platform
models	TIG-500 AC/DC air-cooled; TIG-500W AC/DC water-cooled
Positioning	Highest-current AC/DC TIG page above TIG-315 AC/DC and TIG-400 AC/DC
Primary process	AC TIG, DC TIG, pulse TIG, AC pulse TIG
Secondary process	MMA / stick welding as a support process
Input power	AC380V +/-10%, 3PH; manual lists 50/60 Hz and product intro lists 50 Hz
Output current range	30-500 A DC; 70-450 A AC
Rated duty cycle	60%
Cooling choices	Air-cooled base option or TIG-500W water-cooled package

PRODUCT HIGHLIGHTS

FEATURE	BENEFIT
Top TIG output class	Gives distributors a 500A AC/DC TIG page above the 315A and 400A options
Aluminum-capable TIG story	AC mode and clean-width control support the aluminum conversation without needing MIG workflow language
Two cooling routes	One page routes buyers to air-cooled or water-cooled packages
Application discussion	Aluminum and stainless TIG examples can be discussed by material, current, and package requirement

MODEL SELECTOR

MODEL SELECTOR

MODEL	COOLING	FEEDER / PACKAGE	MACHINE DIMENSIONS	NET WEIGHT
TIG-500 AC/DC	Air-cooled	No LCD	Portable machine body	Air-cooled 500-class AC/DC TIG option
TIG-500W AC/DC	Water-cooled	No LCD	Water-cooled cart / tank package	Water-cooled 500-class AC/DC TIG option

DIMENSIONS AND WEIGHT

ITEM	MACHINE / PACKAGE DIMENSIONS	WEIGHT	DETAILS
TIG-500 AC/DC machine	675 x 330 x 690 mm	740 x 401 x 780 mm carton; 730 x 430 x 860 mm wooden	42-43 kg
TIG-500W AC/DC package	950 x 475 x 1000 mm	1030 x 550 x 1160 mm wooden	75-77 kg

SELECTOR DECISION

APPLICATION NEED	RECOMMENDED ROUTE	SELECTION
Need 500A AC/DC TIG with simpler package	TIG-500 AC/DC	Air-cooled base option
Need torch cooling / heavier TIG usage	TIG-500W AC/DC	Water-cooled package with tank / cooling circulation system
Need lower output class	TIG-315 AC/DC or TIG-400 AC/DC	Route to smaller AC/DC TIG product pages
Need wire-feed aluminum production	Pulse MIG / double-pulse MIG pages	Do not use TIG page for MIG/MAG production workflow

TECHNICAL SECTION

PROCESSES / APPLICATIONS

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TIG-500 AC/DC supports the welding processes and setup paths listed below.

PROCESS CAPABILITY

PROCESS / MODE	APPLICATION MEANING
AC TIG	Aluminum and aluminum-alloy TIG setup with AC cleaning control
DC TIG	Stainless steel, carbon steel, alloy steel, copper, and general TIG work
Pulse TIG	Adjustable pulse frequency and pulse width for heat-input control
AC pulse TIG	Pulse control combined with AC aluminum TIG capability
MMA / stick welding	Secondary process for repair and maintenance work
Remote / foot pedal control	Remote control box or foot pedal can be used when remote mode is selected

TECHNOLOGY / CONTROL FEATURES

FEATURE	CUSTOMER BENEFIT
AC/DC TIG capability	AC and DC TIG modes distinguish the page from DC-only TIG machines
IGBT inverter platform	IGBT inverter AC/DC TIG machine platform
Pulse TIG control	Pulse frequency and pulse width are adjustable for TIG heat-input control
AC clean-width control	AC half-wave width adjustment helps clean aluminum oxide film during AC TIG
High-frequency arc start	HF ignition supports practical TIG starting and demo behavior
Up slope / down slope	Operator controls support controlled starts and endings
Overheat protection	Protection circuits support heavy TIG operation.

RECOMMENDED USE

TIG-focused distributors Useful as the top AC/DC TIG model in a 315A / 400A / 500A lineup	Aluminum and stainless workshops Fits buyers who need AC/DC TIG flexibility rather than wire-feed MIG production	Repair and fabrication shops Useful for repair, shipbuilding, doors/windows, vehicle maintenance, steel fabrication, and pipeline contexts	Water-cooled buyers TIG-500W keeps long TIG torch-cooling conversations on the same page
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MATERIALS / WIRE / GAS

Material, wire, and gas choices depend on the workpiece, process, and application target.

MATERIAL / WIRE / GAS MATRIX

PROCESS	MATERIAL / SCOPE	WIRE / ELECTRODE	GAS / SETUP	APPLICATION
AC TIG	Aluminum and aluminum alloy	Argon shielding gas with TIG filler by application	Core AC/DC TIG material route	
DC TIG	Stainless steel	Argon shielding gas with TIG filler by application	Stainless TIG material route	
DC TIG	Carbon steel and alloy steel	Argon shielding gas with TIG filler by application	Material coverage, not procedure limits	
DC TIG / TIG use case	Copper and other non-ferrous metals	Argon shielding gas with TIG filler by application	Application-specific route	

TECHNICAL SECTION

TECHNICAL SPECIFICATIONS

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Key electrical, output, dimensional, and installation values for product selection.

TECHNICAL SPECIFICATIONS

PARAMETER	SPECIFICATION
model page	TIG-500 AC/DC
models	TIG-500 AC/DC; TIG-500W AC/DC
Input power	AC380V +/-10%, 3PH
Input frequency	50/60 Hz in manual; product intro lists 50 Hz
Rated output / max current	500 A
Output current range	30-500 A DC; 70-450 A AC
Rated duty cycle	60%
Rated input power	17.8 kVA
Rated input current	27 A
Open circuit / no-load voltage	65 V
Power factor	>=0.85
Efficiency	>=85% / 85%
Insulation class	F
Protection grade	IP21
Cooling method	Air-cooled and water-cooled options
Machine dimensions	Air 675 x 330 x 690 mm; water 950 x 475 x 1000 mm

POWER AND SITE REQUIREMENTS

FIELD	REQUIREMENT
Deployment environment	Indoor workshop with 3-phase 380V power
Ambient temperature	-10 deg C to 40 deg C
Moisture / dust	Keep away from rain, high humidity, and heavy dust
Ventilation clearance	Manual asks for 20 cm front/back and 10 cm left/right
Remote operation	Remote control box or foot pedal can control the machine when remote mode is selected
Water-cooled setup	Water tank / cooling circulation for W variants

Input voltage. Listed input voltage values are the standard order setup. Other input voltage options depend on destination and order package.

PANEL / ACCESSORIES

Operator controls, operating modes, and accessory details for product evaluation.

OPERATOR CONTROL AREAS

FUNCTION	DESCRIPTION
TIG / MMA switch	Selects TIG or manual/stick welding mode
AC / DC switch	Selects AC TIG for aluminum or DC TIG for steel/stainless/copper contexts
Pulse / no-pulse switch	Controls whether pulse TIG functions are active
Remote / near-control switch	Routes control to local panel or remote device
Gas detection / welding switch	Supports gas checking and welding operation path
2T / 4T switch	Selects torch-trigger logic
Start / welding / crater amps	Panel controls support start current, welding current, and crater/end current
Pulse amps / width / frequency	Panel controls pulse current, pulse width, and pulse frequency
AC frequency / clean width	Panel controls AC frequency and clean-width percentage
Post flow / slope controls	Panel controls post-flow, up slope, and down slope

OPERATION MODES

MODE	DESCRIPTION
2T	Torch switch held to weld, release to stop
4T	Press/release start and press/release stop workflow
Remote control	Remote box or foot pedal support
Gas detection	Gas check path before welding
Pulse TIG	Pulse parameters are operator-adjustable
MMA	Secondary stick process

INCLUDED / OPTIONAL ACCESSORIES

ITEM	STATUS	DETAILS
TIG torch	Package-specific	Required TIG output connection and torch control line
Earth clamp / work cable	Package-specific	Work return connection
MMA electrode holder	Package-specific	Enables stick welding process
Remote control box	Optional	Remote machine control
Foot pedal switch	Optional	TIG foot-control workflow
Water tank / cooling circulation system	Water-cooled package component	Applies to TIG-500W AC/DC
Argon regulator / flowmeter	Package-specific	Gas accessory depends on order package