

TIG WELDING SYSTEMS

DC/AC-DC TIG Welding Systems



High Performance TIG Equipment for TOP Quality Welding

400AT3DJT

IGBT Controlled DC TIG/MMA
Welding Power Source



**High-frequency (HF)
arc start for non-contact
arc initiation.**

DC
TIG

DC
Manual

Key Features of 400AT3DJT

- Adjustable Current Down-slope time (crater fill in TIG Welding).
- Electric shock prevention switch.
- Input voltage abnormal indicator.
- Temperature abnormal indicator.

Technical Specification	Unit	400AT3DJT
Rated Input Voltage	Volts.	415, ±20%
Phase/ Freq.	No./Hz	3ph / 50-60
Max Input KVA@ 60% duty cycle	KVA/KW	17.6/16.7
Welding Current range	Amp	20-410
Rated Welding Current	Amp	400
Rated duty cycle	%	60
Gas Pre-flow (TIG)	Sec	Fixed
Gas Post-flow (TIG)	Sec	Fixed
Current Up slope control (TIG)	Sec	Fixed
Current Down Slope Control(TIG)	Sec	0.5-2.3
Adjustable Arc Force Current(MMA)	Amp	0-220
Hot Start Current (MMA)	Amp	0-150
Ingress Protection	Class	IP23
Insulation	Class	H
Dimension (WDH)	mm	550 x 330 x 600
Net Weight	Kg.	45
Ordering Code		YD-400AT3DJT

400TX3

The World's Most Preferred and Reliable IGBT- Controlled DC PULSE TIG Welding Machine



Superior Cost-Effective

Performance for DC Pulse TIG Welding



Ideal for Various Applications

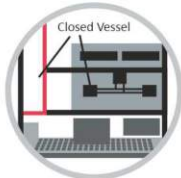
- Petrochemical plants
- Power Generation
- Pressure Vessel Manufacturing
- Stainless Steel Product Manufacturing

Key Features of 400TX3

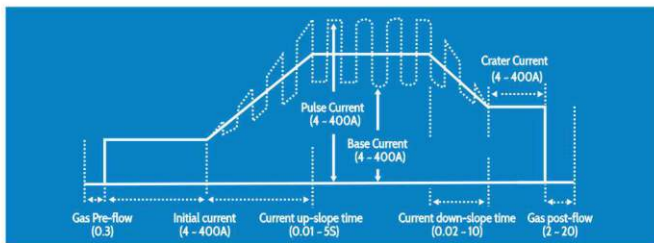
- **Higher weld stability**
High power IGBT components in the main circuit ensure smooth output wave-form resulting in greater arc stability even at 4A output current.
- **Spot welding functionality**
During argon spot welding, TX3 offers pre-setting of spot current and time.
- **Excellent manual welding performance**
Stepless regulation of arc force current reduces issues of stick adhesion, arc break and excessive spatter during welding.
- **Reliability even in rugged environments**
Dust-proof and superior water-proof design for greater endurance.
More efficient cooling.
Complies with IP23 enclosure class.
- **Easy-to-assemble connectors**
Remote operation is possible.



- **Compatible with TIG Mate**
In conjunction with TIG Mate, automatic TIG welding is possible.
- **Unique design of three layer and four room dust-free structure.**



Superior wave-form control to meet diverse welding needs



Superior wave-form control to meet diverse welding needs

- Middle frequency pulse control (10-500Hz).
- Good arc stiffness and concentration.
- Welding of heat-sensitive metals such as titanium and stainless-steel, and ultra-thin plates.
- Low and mid-frequency pulse control (0.5-30Hz).
- For all-position welding of mid/thin plates and pipes made of various metals (except aluminum, magnesium and their alloys).
- Stepless adjustment of pulse current, frequency, width and base current.
- Initial current control and crater current control improves bead quality during arc start and crater stages.

Greater safety features

The possibility of electric shocks due to moisture or working in cramped spaces or contact with metal surfaces etc. is greatly reduced.

Important Safety Features

- Electric shock prevention switch.
- Over-voltage and under-voltage protection.
- Overheating protection.
- Single-phasing protection.

Technical Specification		Unit	YC-400TX3
Input Voltage		-	415 +/-20%
Power Control Method		-	IGBT Inverter Type
Input Power Frequency		Hz	50/60
Rated Input Capacity		KVA/KW	14.5/12.4
Rated Output Current		A	400
Rated Output Voltage		V	26
Rated Duty Cycle		%	60
Rated Output Voltage at no Load		V	Anti-electric Shock [ON]:13, [OFF]:73
Output	TIG	A	4-400
Current Range	Manual Arc Welding	A	20-400
Output	TIG	V	10.2-26
Voltage Range	Manual Arc Welding	V	20.8-36
Crater Current		A	4-400
Pulse Current		A	4-400
Up Slope Time		S	0 or 0.1-5
Down Slope Time		S	0 or 0.2-10
Pre-Flow Time		S	0.3
Post-Flow Time		S	2-20
Pulse	Low Frequency	Hz	0.5-30
Frequency	Mid Frequency		
Pulse Width		%	5-95
Control Mode for Crater Current		-	Three Control Modes for Crater, i.e. "YES", "NO" and "REPEAT"
Arc Starting Mode		-	High-Frequency Arc Starting
Enclosure Protection Class		-	Ip23
Insulation Class		-	H
Cooling Mode		-	Air Cooled
Dimension (W X D X H)		mm	327 X 555 X 602
Mass		Kg	43

Note:

1. For YC-400TX3, Optional parts are needed if machine is connected with water cooled torch.
2. YC-400TX3HGW (Chinese) is Water Cooling specification.
3. For YC-400TX3, Optional parts (Model TSMYU059) are needed if the machine is connected with automatic filler wire feeder and automatic special purpose machine.

Accessory name	Mode	Quantity
Filter	CJX30101-02	1
Additional device	CJM30101	1

Ordering Information	Model
Power source	YC-400TX3DJE
TIG torch (Air cooled)	YC-30TS2
TIG torch (Water cooled)	YC-30TSW2

YD-350/500WX5

IGBT Controlled DC TIG/MMA
Welding Power Source



With multiple welding modes, corresponding to different welding needs

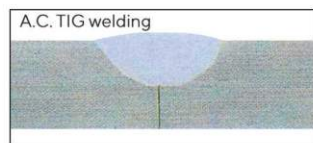
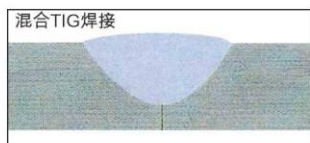
- Mix TIG welding**
 (Aluminum)
 ※ Mix TIG welding: Panasonic's unique welding method enables machine to alternately output AC TIG and DC TIG.



- Thanks to high arc concentration, it's easy for you to complete the aluminum thin plate fillet welding and realize the reliable tack welding.



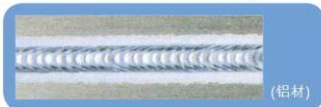
- Because AC TIG welding contains DC components, deeper penetration can be obtained.



- AC standard TIG welding**
 (Welding of thin plate aluminum)
 (Welding of thick plate aluminum)

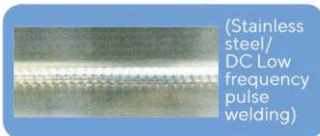
- From thin plate to thick plate, various shapes workpiece can be welded.

- AC hard TIG welding**



- Strong arc concentration. Suitable for welding thin plates with gaps.

- DC TIG welding**



- Choose the arc ignition method according to the purpose. Suitable for multi-point welding. ※EP=electrode positive polarity method

- AC flexible TIG welding**



- The arc is soft and the noise is low.

AC waveform control

AC balance control-cleaning width adjustment

For AC TIG aluminum welding, the cleaning width can be adjusted. The adjustment range of EP is 10-50% by changing the percentage of EP, the higher percentage of EP, the wider the cleaning width and the shallower the penetration.

Waveform	Effect on weld bead	Effect on appearance
10%EP 	Large EN area Low electrode loss Narrow and deep penetration	Narrow joint
40% EP 	Small EN area High electrode loss Wide and shallow penetration	Wide joint with cleaning area

AC balance control-bias current adjustment

For AC TIG aluminum welding, the cleaning strength of removing the oxide film can be further adjusted by changing the amplitude ratio of EP and EN, achieving the ideal the penetration and width of the joint. The bias current range is -70%-70% and the standard is 0.

Waveform	Effect on weld bead	Effect on appearance
The bias current 10% 	Wider and deeper joint	Narrower joint
The bias current -10% 	Narrower and shallower joint	Wider joint

AC balance control-AC frequency adjustment

Through the adjustment of AC frequency (adjustment range 30-100Hz), the arc concentration and arc stiffness can be controlled, the higher the frequency, the stronger the arc concentration.

Waveform	Effect on weld bead	Effect on appearance
AC frequency, 30Hz 	Wider joint & deeper penetration	Wider joint
AC frequency, 100Hz 	Narrower joint Suitable to fillet joint and automatic welding	Wider joint

EP: Electrode rod positive polarity EN: Electrode rod negative polarity

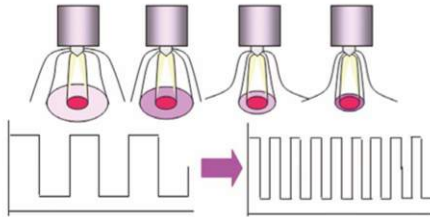
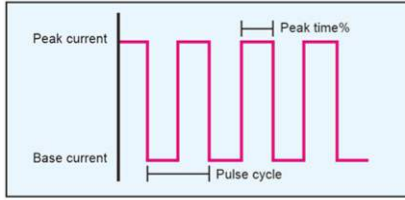
Pulse control

Generally speaking, TIG pulse welding can be divided into the following types:

- ① Low frequency pulse (0.1~10Hz); ② Intermediate frequency pulse (10~500Hz);

Low-frequency pulse is focused on controlling the amount of heat input, while the medium-frequency pulse welding is mainly used to increase the stiffness of the arc.

Pulse frequency and main welding characteristics:



Pulse type	Arc state	Main features
Low frequency pulse	Wider arc column	All-position welding, shifted welding of different plate thicknesses and penetration welding
Intermediate frequency pulse	Concentrated arc. Arc sound	High-speed welding of thin plates, fillet welding, easy for wire filling

Rated Specifications

Item	Unit	YC-350WX5	YC-500WX5
Control method	-	Digital IGBT Control	
Rated input Power supply and number of phases	-	3 - Ph, AC 380V	
Input power frequency	Hz	50/60	
Rated input capacity	kVA/kW	16.6/13.5	29.5/22.5
Rated output No-load voltage	V	DC 62	DC 70
Rated output current	A	To Stick 300	TIG 500 Stick 400
Rated output voltage	V	To Stick 32	TIG 30 Stick 36
Rated duty cycle	%	35	60
Output current range	A	DC TIG 4-350 AC TIG 10-350 Stick 10-300	DC TIG 5-500 AC TIG 20-500 Stick 20-400
Output voltage range	V	TIG 10.16-24 Stick 20.4-32	TIG 10.2-30 Stick 20.2-36
Pulse current	A	DC TIG 4-350 AC TIG 10-350	DC TIG 5-500 AC TIG 20-500
Pulse frequency	Hz	0.1-500	
Memory	-	100 channels for storing and recalling	
Shielding gas	-	Ar: 99.99% or higher	
Up-slope time	s	0-20 continuous adjustment (0.1 increment)	
Down-slope time	s	0-20 continuous adjustment (0.1 increment)	
Gas pre-flow time	s	0-30 continuous adjustment (0.1 increment)	
Gas after-flow time	s	0-30 continuous adjustment (0.1 increment)	
AC frequency (AC TIG)	Hz	30-100 (factory setting: 70)	
Input power terminal	-	Terminal block (for 3 phases, M5 bolts)	
Output terminal	-	Fast plug	Bolt fastening method
Enclosure class	-	IP23S	
Insulation class	-	200	
cooling method	-	Forced air cooling	
Dimensions (Length×Width×Height)	mm	560×380×730	730×380×875
Mass	kg	74	128

Note:

The output current and voltage range is measured with resistance load according to GB/T 15579.1-2013.

The external dimensions are of the welding power source measured when the built-in liquid cooling system and the trolley are not included.

World-class Welding Quality at Your Doorstep

- Panasonic Smart Factory Solutions India has set-up its state-of-the-art manufacturing facility in Jhajjar, Haryana, India. So our globally proven range of welding equipment including MMAW, MIG/MAG, TIG, Plasma Cutting, Welding Accessories, and Welding Robots are now available at your doorstep.
- Assured commitment to long-term product support in terms of Sales, Service and Spares.
- All-India Sales and Service network.



Range of Welding Equipment: MMAW | MIG/MAG | TIG | Plasma Cutting | Welding Accessories | Welding Robots
Panasonic has set-up its own state-of-the-art welding equipment manufacturing facility at Jhajjar near Gurugram, Haryana, India.

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