

**Tech Pro<sup>®</sup>**

[AN ISO 9001 : 2008 & 14001 : 2004 CERTIFIED COMPANY]



**DIGITALLY CONTROLLED IGBT INVERTER BASED MULTI-PROCESS  
EQUIPMENT FOR MIG / MAG, SYNERGIC MIG & MMA APPLICATION  
(WITH PULSE)**



1. **SYNCHRONIZED  
Program Presetting**
2. **Automatic  
MEMORY function**
3. **Parameters STORAGE**
4. **ARC output ENERGY  
CONTROL**
5. **one PULSE one DROP**

**MODEL : TP-MIG-400i (SYN-P)**

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**COMPLETE SOLUTION FOR WELDING & PLASMA CUTTING**

**Brief and convenient front panel**

500A inverter power source  
 Customized-generators friendly  
 Operation panel  
 Wire feeder; synchronized control  
 Monopulse operation  
 Dipulse operation

**Convenient operation**

Power input cable with standard plug  
 Ground cable with clamp  
 Welding torch and torch holder

**Suitable welding tools**

Welding torch consistent with ergonomic design  
 Mobile trolley with gas cylinder on it

**Continuous cooling**

Air cooling power source  
 Water cooling welding torch

**Mobile welding equipment**

Mobile trolley frame with gas cylinder holder  
 Steady rubber wheel and self-locking omni-directional wheel

**Continuous feeding**

4 gears double-drive wire feeder  
 Euro welding torch connector  
 Wire spool for 300mm wire

**High reliability**

Adoption of international top-rank components and high power devices  
 Equipped with over-heat protection, over-current protection, power input under-voltage protection

**Advanced control technology**

The adoption of international cutting edge DSP digital technology guarantees abundant functions, excellent performance, high accuracy and fine consistency



## 2 Precise and Convenient Operation Panel with Abundant Functions

### Friendly Human-computer Interface Concise And Convenient Operation

The diagram shows the control panel of a MIG-400P welding machine with eight callout boxes highlighting specific features:

- 1** One Machine Can Satisfy Various Functions: A panel with four function modes: Synchronic (MAGCO<sub>2</sub>), Monopulse (MAGCO<sub>1</sub>), Dipulse (MIGMAG), and Welding (MIGMAG).
- 2** Display of welding current, wire feeding speed and workpiece thickness selection: A panel with buttons for current (A), wire speed (m/min), thickness (mm), and a +/- sign.
- 3** Display of welding voltage, duty cycle and frequency selection: A panel with buttons for voltage (V), duty cycle (S), frequency (%), and Hz.
- 4** 2T/4T spot welding selection: A panel with buttons for 2T and 4T spot welding.
- 5** Wire feeding gas detection: A panel with buttons for wire feeding and gas detection.
- 6** Selection of wire diameter: A panel with buttons for wire diameters:  $\phi$  0.8,  $\phi$  1.0,  $\phi$  1.2,  $\phi$  1.6, and Flux cored.
- 7** Selection of gas type: A panel with buttons for gas types: 100%CO<sub>2</sub>, 80%Ar 20%CO<sub>2</sub>, 90%Ar 5%CO<sub>2</sub>5%O<sub>2</sub>, 98%Ar 2%CO<sub>2</sub>, and 100%Ar.
- 8** Selection of workpiece material: A panel with buttons for materials: Steel, CrNi, AISi 5, AIMg 5, and Al 99.5.

## 3 Welding Parameters Memory Function

Welding parameters can be automatically saved in case of power off or accident blackout; it can come back to previous welding parameters when restart the machine.

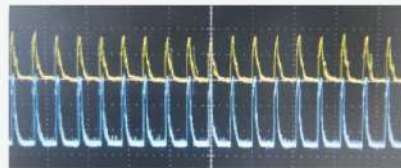
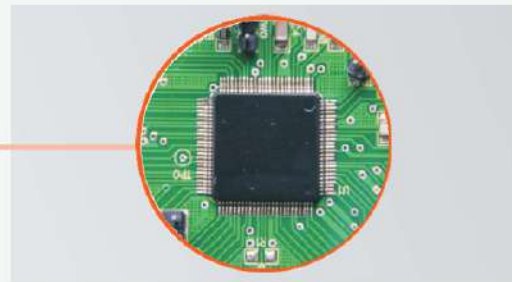
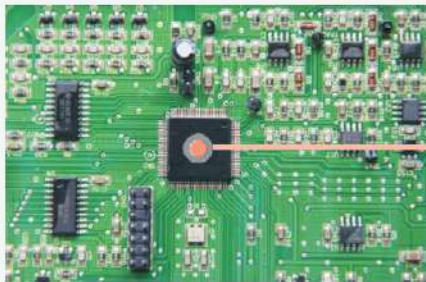
## 4 Synchronized Program Presetting



### Conciseness, Convenience, Reliability

Built-in expert database can realize automatic fast matching welding parameters based on workpiece material, wire diameter, shielding gas type, etc.

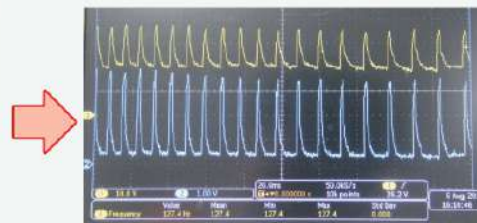
## 5 High Speed Digital Control Technology



To provide stable and high quality welding arc.

## 6 Arc Regulation

Absolute CV control to guarantee stable arc length in the middle of welding.



## 7 Arc Output Energy Control

Concise and convenient operation; operators can adjust welding procedure through current, wire feeding speed or workpiece thickness selection



## 8 Wire Feeder with Speed Feedback



Digital wire feeding control system to guarantee stable aluminum wire feeding.

## 9 Specially Aluminum Welding Program Design is of High Efficiency, Deep Penetration, Less Porosity and High Quality Welding Bead



Solve the problems of difficult fusion of arc ignition in aluminum welding and arc crater during arc ending.

## 10 Communications with Wire Feeder



- Compact aviation socket is with protection cover to prevent foreign matters entering into it.



- Can significantly reduce cable pins which is improving welding reliability.

## 11 Hf Pulse Control Molten Drop Transfer---One Pulse One Drop



Digital control, accurate waveform control to realize one pulse and one drop transfer, so that to acquire stable and no spatter welding processing.

## 12 Specially Designed Unique Crater Solution

To optimize wire ends' shape so that to ensure next smooth arc ignition



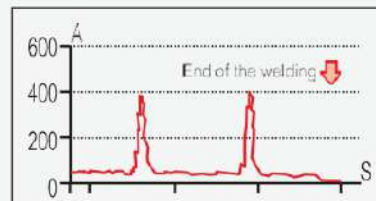
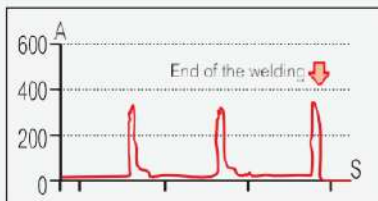
Ø1.19

MIG-400P



Ø1.38

Before The Machine



13 Concise, Steady and Practical Customized Design

- **XXL gas cylinder trolley**

Detachable chain lock to fix gas cylinder and prevent dump.



- **Hand shank for moving the machine**

Hand shank for convenient moving the machine.



- **Enhance stability**

Big steady rubber wheels can withstand large force.



- **Omni-directional wheels**

Useful and sturdy self-locking omni-directional wheels.



OFF



ON

## 14 Digital Wire Feeder

- Outstanding appearance is the combination of elegance and excellent performance



Concise front panel for convenient operation.



Wire spool with protective cover; sweat resistant and skid-resistant handle shank for convenient mobility.



Agreeable torch placing design.



Water inlet and outlet are separated by different colors



Torch connector with smooth periphery arc is indent in front panel to avoid collision.



- Precise 4 gear wire feeder



Built-in wire feeder, anti-dust, anti-water design to prolong machine lifespan.



15 Big Capacity Water Cooler



• Front panel



Cooler



Front fuse for convenient replacement

• Rear panel



Standard power source: AC 220V



Water inlet and outlet varies with each other by colors, which is corresponding with wire feeder.

## 16 High Reliability

### Metallic dust test:

To make sure the well operation in case of severely rough environment.



## 17 Technical Specification

Input	Input power	3~AC380V 50/60Hz
	Rated input capacity(KVA)	18
Output	Rated no-load voltage(V)	70
	Rated max output(A/V)	400/36@60%
	Wire diameter(mm)	0.8/1.0/1.2/1.6
	Welding voltage(V)(MIG/MAG)	12~39
	Welding current range(A)(MMA)	10~400
	Wire feeding speed range(m/min)	1.0~18.0
	Output characteristics	MMA:constant current MIG/MAG:constant voltage
	Protection class	IP23
Efficiency(%)		85
Insulation grade		H
Main body	Net weight(Kg)	40
	Dimension(include packaging)(mm)	780*380*610

## Features

Concentrated current can effectively suppress pores in weld and decrease welding distortion.  
Refined grain lowers crack sensibility.

## Welding Bead

- Aluminum alloy welding bead

### Monopulse aluminum alloy welding bead

Welding parameters



### Dipulse aluminum alloy welding bead

Welding parameters



- **Stainless steel welding bead**

Welding parameters



- **Carbon steel welding bead**

Welding parameters

