



## CHAMP PULSE 500

INVERTER BASED AC/DC MIXED PULSED TIG  
WELDING SYSTEM



### INTRODUCTION:

CHAMP PULSE 500 outfit is an inverter - based system with advanced IGBT protection mechanism. The equipment supports different welding process modes: SMAW, GTAW, GMAW, PULSE MIG with single and double pulse mode along with pre programmed synergic data. Front panel comes with G-LCD and digital encoder which make situser friendly. Built in various protection features allows it to work in the harsh environment. Machine can be used form anual as well as automatic welding application. With its different welding modes, the machine is suitable for welding with different materials like MS/SS/AL/FCAW/CORTEN STEEL / Al+Mg / Al + Si / DCu.

This complete system comes with Power Source, Wire Feeder, Water Cooling Unit and Water Cooled MIG torch. Power source is capable of Synergic control in PMIG / MIG / MMA / TIG (Lift arc) mode. The complete system consists of Power Source, water-cooling unit, wire feeder, water cooled torch and inter connecting cables and control cables between wire feeder and power source.

CE Marking: The CE marking signifies the manufacturer's declaration of conformity to applicable European directives and standards.

### SALIENT FEATURES:

- Inverter based indigenous advanced digitally controlled SMAW, GTAW, GMAW and SINGLE / TWIN PULSE MIG welding outfit.
- Synergic mode of operation for single point control that allows Automatic parameter selection (Synergic) in MMA, TIG, MIG and Pulse MIG mode.
- Advanced digital control algorithms enable superior arc characteristics.
- Digital control of inverter for spatter less MIG welding application.
- Fine Arc length control in Pulse Mig and MIG welding mode for different types of welding application.
- Excellent arc force and hot start control in MMA mode for low current application.
- Twin pulse mode in Pulse Mig for low heat input.
- Digital pulse feedback from feeding motor for accurate control of wire speed.
- Graphical-LCD for displaying machine's settings along with dual 7 segments LED display for actual current and voltage display.
- Wire Feeder with digital console for remote parameter setting.
- Facility to store 100 welding programs (weld parameter) for easy save and recall operation.
- Addition of synergic program externally for a particular wire using USB facility.

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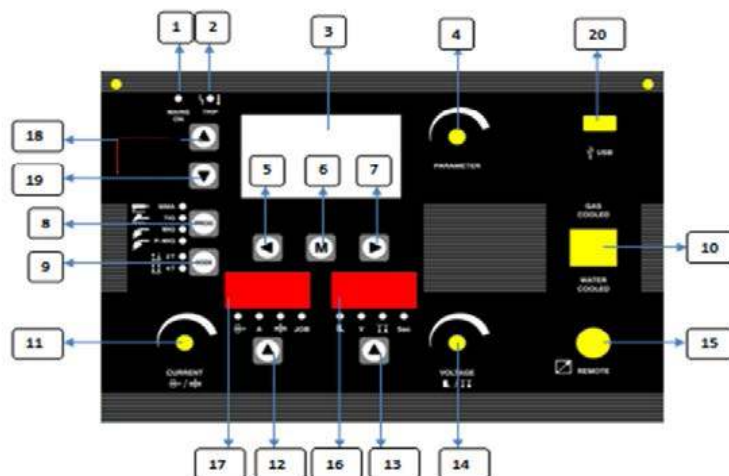
### INVERTER BASED AC/DC MIXED PULSED TIG WELDING SYSTEM

#### PROTECTION:

The equipment is provided with following protections.

- TRIP LED (Red) glows if supply voltage goes low (< 340VAC.)
- Over Voltage: TRIP LED (Red) glows if supply voltage goes high (>470 VAC).
- Over Temperature: TRIP LED (Red) glows if the temperature of the main power components is over the Safety limits
- Single phasing protection: If any one of the three phases (R, Y, and B) is absent, welding will stop, and TRIP LED (Red) will glow
- Motor overload Protection: If during welding Err 005 occurs then it indicates that motor gets overloaded. So, to remove this error just restart the machine.
- Welding current would not be available when TRIP LED (Red) glows.

#### FRONT PANEL DISPLAY



- 1. Mains on indication:** This LED (Green) will glow when machine is turned on.
- 2. Trip Indication:** This LED will glow when any of the trip condition such as Over Voltage, Under Voltage, Thermal Error occurs.
- 3. Graphical LCD:** Displays the current settings of the machine. Parameters set by user for particular job. e.g., set welding current, voltage, material, etc. depending upon the mode selected by PROG key.
- 4. Parameter Knob:**
  - In MMA mode, OCV will appear after pressing parameter knob.
  - In MIG/P-MIG mode by pressing this encoder user will enter into parameter edit, save, and recall mode. It is used for setting selected parameters. By rotating knob clockwise (++) or anticlockwise (--) user can change the selected parameter.
  - In MIG/P-MIG mode, after selection of specific program using menu key, for selection of this program press parameter knob.
- 1. Left Key:**
  - In MMA and TIG modes, switch to select different welding material e.g., SS, MS, AL etc in synergic mode.
  - In Mig and Pulse Mig mode, Used for moving cursor left while setting OTP while USB file reading.



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### INVERTER BASED AC/DC MIXED PULSED TIG WELDING SYSTEM

#### 1. Menu key:

- In MMA and TIG modes, switch to select diameter of feeding wire in P-MIG/MIG and electrode size in MMA mode.
- In Mig and Pulse Mig mode, it is used as menu key. For first press, goes into menu page for selecting particular program (e.g., MS 0.8 ArCo2). Menu mode is exited on pressing the Menu Key once again.

#### 1. Right Key:

- In Mig and Pulse Mig mode, Used for moving cursor right while setting OTP while USB file reading.

**1. Program selection:** Switch to select between MIG mode, TIG mode, MMA mode and Pulse MIG mode as indicated by left hand side led indication.

**2. Mode selection:** Key to select between 2T and 4T mode in TIG, MIG and Pulse MIG mode.

**3. Cooling Mode selection:** Switch to select between gas cooled or water-cooled mode.

**4. Set Current Knob:** To set welding current, wire feeding speed, material thickness or Job as selected by switch no 12.

**5. Select parameter:** Welding current, wire feeding speed, material thickness or Job, which is to be set using set current knob.

**6. Select parameter:** Welding voltage, arc length, arc force, hot start, which is set using set Voltage knob.

**7. Set Voltage Knob:** To set welding voltage and arc length, Inductance as selected by switch no 13 in and welding process selected.

**8. Connector for Remote control:** Reserved for future scope.

**9. Seven segment displays:** To display parameter value selected by switch no 13.

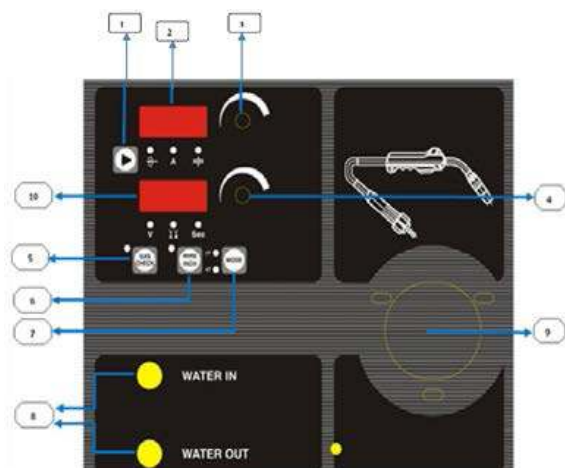
**10. Seven segment displays:** To display parameter value selected by switch no 12.

**11. Up Key:** To select the parameter in MIG and P-Mig mode after pressing the Parameter Knob 4.

**12. Down Key:** To select the parameter in MIG and P-Mig mode after pressing the Parameter Knob 4.

**13. USB Port:** Used for Reading text file containing program for particular wire from pen-drive.

#### FRONT PANEL DISPLAY



- Select parameter: to select wire feeding speed, welding current, material thickness which is to be set using knob pointed by 3 selected parameters will be indicated by led under seven segment pointed by number 2.
- Seven segment display 1 :to display the parameter selected by key 1 and can be changed by set current knob pointed by 3.
- Set current knob: to set wire feeding speed welding current, material thickness as selected by switch no 1. Current value of selected parameter is displayed in seven segment no 2.
- Set voltage knob: to set welding voltage, arc length as selected in power source display panel.
- Gas checks witch: to check the flow of gas without carrying out welding.
- Wire inch key: to rotate the wire feeder motor when welding is off.
- Mode selection key: to select between 2T and 4T mode in TIG, MIG and PULSE MIG mode.
- Water in and water out connection: connectors for water circulation water in and water out connection to welding torch.
- Welding torch connection.
- Seven segment display 2 :to display the parameter set in power source display panel and can be varied by set voltage knob.

## CHAMP PULSE 500



The New Indigenous World Class Inverter Based MULTIPROCESS PULSED MIG Welder

Cont.

<b>MMA WELDING PARAMETER SPECIFICATIONS</b>		
<b>PARAMETER</b>	<b>VALUE</b>	<b>UNIT</b>
WELDING CURRENT	15 - 500	AMP, DC
ARC FORCE	0 - 100	%
HOT START	0 - 100	%
<b>TIG WELDING PARAMETER SPECIFICATIONS</b>		
<b>PARAMETER</b>	<b>VALUE</b>	<b>UNIT</b>
WELDING CURRENT	15 - 500	AMP, DC
<b>MIG WELDING PARAMETER SPECIFICATIONS</b>		
<b>PARAMETER</b>	<b>VALUE</b>	<b>UNIT</b>
GAS PRE FLOW TIME	0 - 10	SEC.
INDUCTANCE	0 - 40	%
WELDING / CRATER CURRENT	30 - 500	AMP, DC
WELDING / CRATER VOLTAGE	10.0 - 44.0	VOLT, DC
BURN - BACK TIME	0.01 - 5.0	SEC.
GAS POST FLOW TIME	0 - 10	SEC.
<b>PULSED MIG WELDING PARAMETER SPECIFICATIONS - ADDITIONAL</b>		
<b>PARAMETER</b>	<b>VALUE</b>	<b>UNIT</b>
ARC LENGTH	- 40 TO + 40	%
TWIN PULSE FREQUENCY	1.0 - 10.0	HZ
TWIN PULSE DUTY CYCLE	10 - 90	%
TWIN PULSE CURRENT RATIO	0 - 200	%



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### PROTECTION:

POWER SOURCE	CHAMP PULSE 500	MODEL
PARAMETER	VALUE	UNIT
SUPPLY VOLTAGE, PHASE, FREQUENCY	415 V +15%, -10%, 3, 50	VOLTS AC, NO., HZ
MAX. INPUT KVA @ 415 V SUPPLY	@ 100% DUTY CYCLE: MMA / TIG / PULSED MIG MODES - 20, MIG MODE -17.5 @ 60% DUTY CYCLE: MMA / TIG / PULSED MIG MODES - 30, MIG MODE -25.5	KVA
INPUT CURRENT @ 415 V SUPPLY	@ 100% DUTY CYCLE: MMA / TIG / PULSED MIG MODES - 28, MIG MODE -24 @ 60% DUTY CYCLE: MMA / TIG / PULSED MIG MODES - 41, MIG MODE -35	AMPS, AC
POWER FACTOR	0.9 MAXIMUM	λ
EFFICIENCY	UPTO 85	%
OPEN CIRCUIT VOLTAGE @ 415V INPUT SUPPLY	MMA / TIG / PULSED MIG / MIG MODES - 84 V ± 5 V	VOLT, DC
WELDING CURRENT RANGE	MMA / TIG: 15 - 500, MIG / PULSED MIG: 30 -500	AMP, DC
WELDING CURRENT AT 40°C, 10 MINUTE CYCLE	387 AMPS @ 100% DUTY CYCLE, 500 AMPS @ 60% DUTY CYCLE	AMPS, DC
PROTECTIONS	OVER VOLTAGE, UNDER VOLTAGE, SINGLE-PHASING, OVER TEMPERATURE, OVER CURRENT	-
FRONT PANEL FUNCTIONS	1) MMA/ TIG / MIG / PULSED MIG SELECTION SWITCH 2) 2T/ 4T SELECTION SWITCH 3) MENU KEY FOR SELECTION OF SYNERGIC PROGRAM IS PROVIDED 4) GAS COOLING / WATER COOLING SELECTION SWITCH 5) WIRE SPEED / CURRENT / PLATE THICKNESS SELECTION SWITCH 6) UP / DOWN SWITCHES TO SET THE GAS PRE-FLOW, GAS POST-FLOW AND BURN BACK TIMES 7) 3 SEPARATE ENCODERS TO SET CURRENT, VOLTAGE AND ADDITIONAL PARAMETERS 8) MAINS ON - GREEN LED AND TRIP - RED LED INDICATORS 9) USB PORT FOR LOAD PROGRAM OF PARTICULAR WIRE EXTERNALLY	-
PROGRAM STORAGE FACILITY	100 JOBS ALONG WITH PARAMETER LOCKING FACILITY	
AUXILIARY POWER SUPPLY FOR WCU	240 V, 300 VA	VAC, VA
COOLING	FORCED AIR	TYPE
AMBIENT TEMPERATURE RATING	40	°C
CLASS OF INSULATION	H	-
DEGREE OF PROTECTION	IP23S	-
COMPATIBILITY TO INTERNATIONAL STANDARDS	AS PER EN 60974-1	
DIMENSIONS (L X W X H))	1151 X 525 X 1176	MM
WEIGHT	47	KG

- **Warranty** : One year from the date of commissioning. ADOR WELDING LIMITED warrants that all new equipment sold from Plant/Area Offices / Authorised Distributors are free from defects in materials and workmanship and will perform in full accordance with applicable specifications.
- In view of continuous development, ADOR WELDING LIMITED reserves the right to modify/change the design and/or the specifications without any prior notice.
- Backed by dedicated customer care package.