

# WELD MATE™

10006 Santa Fe Springs Road  
Santa Fe Springs, CA 90670 USA  
Made in China

**80002**  
Rev 80002-20080228



## Owner's Manual and Operating Instructions



**60-90A**

**MIG WELDER**



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## Introduction

Congratulations on your purchase of a Champion Power Equipment portable welder. CPE designs and builds welders to strict specifications. With proper use and maintenance, this welder will bring years of satisfying service.

### **Portable Welder**

MIG Gas-Protected Welding Machine. It can also be used for the welding of non-gas protection Flux welding. It is designed for medium to light duty welding (up to 3/16”).

### ***This Booklet***

Every effort has been made to ensure the accuracy and completeness of the information in this manual. We reserve the right to change, alter and/or improve the product and this document at any time without prior notice.

Record the model and serial numbers as well as date and place of purchase for future reference. Have this information available when ordering parts and when making technical or warranty inquiries.

<b>Champion Power Equipment Support</b>
1-877-338-0999
<b>Model Number</b>
80002
<b>Serial Number</b>
<b>Date of Purchase</b>
<b>Purchase Location</b>

# Manual Conventions

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## Manual Conventions

This manual uses the following symbols to help differentiate between different kinds of information. The safety symbol is used with a key word to alert you to potential hazards in operating and owning power equipment.

Follow all safety messages to avoid or reduce the risk of serious injury or death.

### DANGER

DANGER indicates an imminently hazardous situation which, if not avoided, *will* result in death or serious injury.

### WARNING

WARNING indicates a potentially hazardous situation which, if not avoided, *could* result in death or serious injury.

### CAUTION

CAUTION indicates a potentially hazardous situation which, if not avoided, *may* result in minor or moderate injury.

### CAUTION

CAUTION used without the safety alert symbol indicates a potentially hazardous situation which, if not avoided, *may* result in property damage.

### NOTE

If you have questions regarding your welder, we can help. Please call our help line at 1-877-338-0999.

## Safety Rules

### WARNING

Read this manual thoroughly before operating your welder. Failure to follow instructions could result in serious injury or death.

### DANGER

Breathing welding fumes can be hazardous to your health

Keep head and face away from welding fumes. Use enough ventilation to avoid the buildup of gas and fumes in the immediate area. Do not breathe in fumes.  
Use of a ventilating fan may be necessary.

### DANGER

Electric Shock can kill

Electric Shock can occur from wiring or welding electrode

Do not touch electrode with bare hand.  
Wear dry insulating gloves.  
Do not touch live electrical parts.  
Protect yourself from electric shock by insulating yourself from work or ground.  
Properly install and ground all equipment.

### DANGER

Welding can cause fire or explosion.

Do not weld near flammable material.  
Welding sparks can cause fires.  
It is suggested that you have a fire extinguisher nearby.  
Do not weld on drums, tanks, or other closed containers  
Do not use welder in thermal overload condition – prevent overheating

### DANGER

ARC rays can burn eyes and skin.

Use welding helmet with correct shade of filter lens.  
Wear welders cap and safety glasses underneath helmet. Use ear protection if welding in an area with heavy sound reverberation.  
Button shirt collar all the way up.  
Wear oil-free protective clothing: leather gloves, heavy shirt, cuff less pants, and high boots

### WARNING

Hot parts

Do not touch hot parts bare handed.  
Allow cooling period before adjusting gun or torch  
Use proper tools and/or wear heavy, insulated gloves and clothing to prevent burns

### WARNING

Magnetic fields can affect pacemakers.

Pacemaker wearers keep away

### WARNING

Noise can damage hearing.

Wear appropriate ear protection if noise level is high

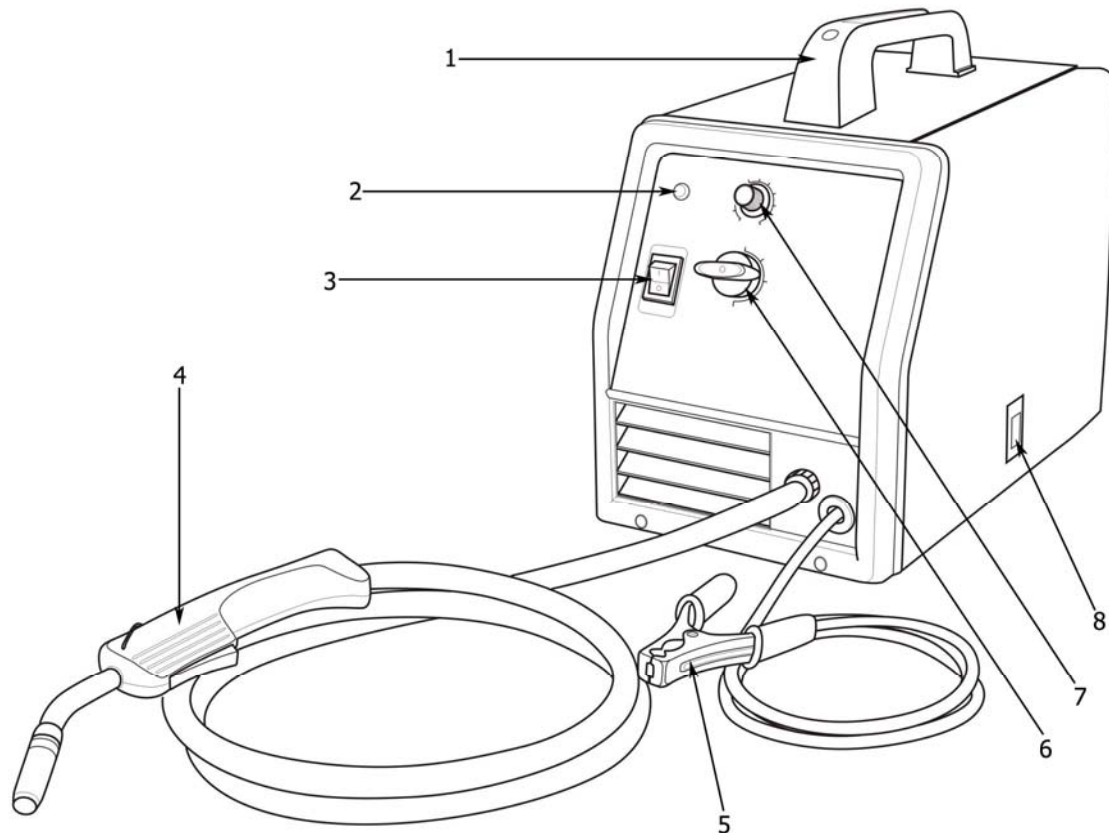
# Controls and Features

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## Controls and Features

Read this owner's manual before operating your welder. Familiarize yourself with the location and function of the controls and features. Save this manual for future reference.

### **MIG/Flux Welder**



**Carrying handle (1)**

**Thermal Overload indicator (2)** – Allow welder to cool, reduce duty cycle.

**On/Off switch (3)** – Power On, Power Off.

**MIG Welding Gun (4)** – Wire fed torch handle.

**Ground Clamp (5)** – “Work Clamp”, grip workpiece to complete circuit.

**Amperage control (6)** – Dial adjustment, from 26amps to 90amps.

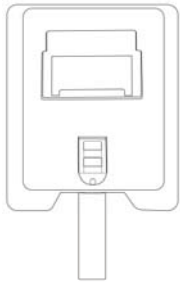
**Wire feed speed control (7)** – Turn dial adjustment wire feed speed.

**Access Door (8)** – Swing open this panel to load/adjust wire spool.



## **Parts Included**

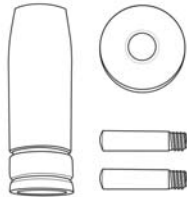
Your 8000 ARC Welding unit ships with the following parts:



Handheld Welding Mask



Wire Brush/Slag Hammer



Torch Nozzle(1)  
Wire Feed Roller (.6 dia. And .8 dia.)  
Contact Tip (2)

# Assembly

## Assembly

Your welder requires some assembly.

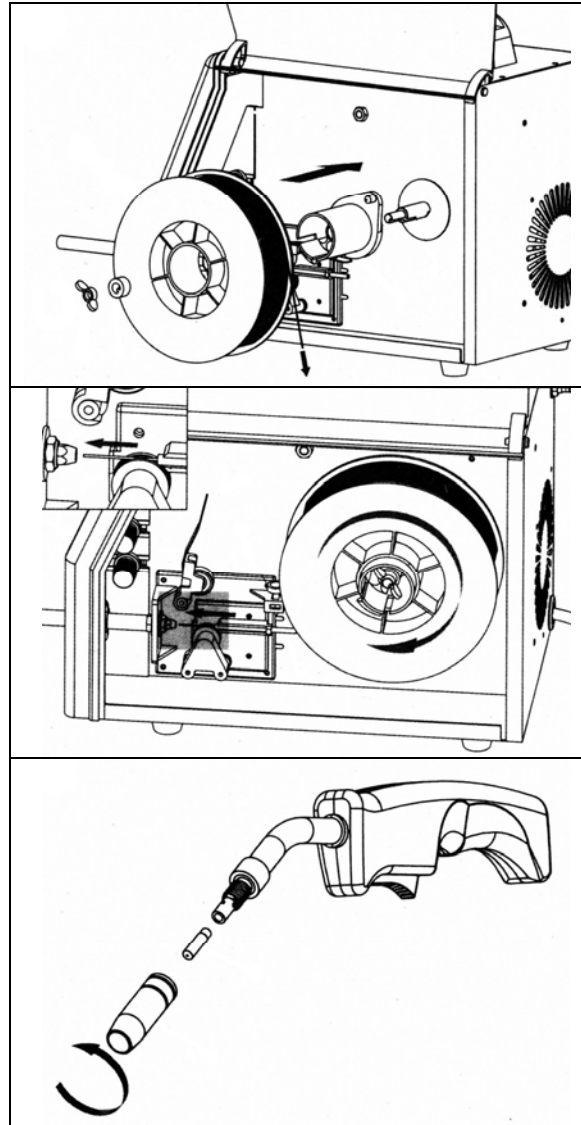
If you have any questions regarding the assembly of your welder, call our help line at 1-877-338-0999. Please have your serial number and model number available.

This unit can be used for MIG/MAG (CO<sub>2</sub> gas-protected) welding or Flux wire (non-gas) welding. This unit does not include equipment for gas-protected uses (CO<sub>2</sub> gas cylinder, pressure gauges, hoses, etc.)

### Installing Wire Feed

This unit supports wire sizes of .6mm, .8mm, .9mm Flux Core or Solid Wire. Make sure the correct Wire Feed Roller is being used. We have provided one in the packaging.

1. Lift tab on side panel to access wire feed mechanisms
2. Unscrew the wing nut and remove the reel locking knob
3. Place the wire reel over the shaft. The wire reel should unwind clockwise
4. Replace the reel locking knob and the wing nut; tighten well
5. Lift the Wire Feed Adjusting Spring to remove tension
6. Guide at least 12 inches of wire into the Torch Sheath. If the end of the wire is crimped or bent, cut it off and remove any burrs.
7. Replace tension to the Wire Feed Adjusting Spring
8. Turn the Torch Handle Nozzle counterclockwise and pull to remove
9. Turn the Contact Tip counterclockwise and remove
10. Lay the Torch Sheath out in a straight line so that the wire moves through it easily



### WARNING

The following steps require applying power to the welder. Do not touch anything with the Torch Handle or an arc may be ignited

11. Plug the Power Cord into its electrical outlet, turn the Amperage control to D, and turn the welder ON.
12. Lift the Torch Handle and continue pressing the trigger until the wire feeds through two inches

# Assembly



## NOTE

If the wire does not feed, view the Wire Feed Unit and see if the wire is being pushed. If it is not, turn the welder OFF and add more tension to the Wire Feed Adjusting Spring.

13. Turn the welder on again and press the trigger.
14. Once the wire is exposed, turn the welder OFF.
15. Slide the Contact Tip over the wire and screw it into the Torch Handle.
16. Replace the Nozzle and cut off any excess wire over 2 inches
17. Secure the cover

## Changing Polarity

The model 80002 welder is wired for Flux core welding (straight polarity). This means that the welding gun is attached to the negative (-) lead and the work clamp is attached to the positive (+) lead.

If you wish to use the CO<sub>2</sub> gas-protected welding method, you must **switch polarity**. The welding gun must be attached to the positive lead (+) and the work clamp to the negative lead (-).

## Operation

### **Welder Location**

Place on a flat surface free of vibration. This unit may be placed on a certified welding cart (not included) and can be set at an angle of 10 degrees.

Place the welder in a well-ventilated area. DO NOT place the welder near vents or intakes where exhaust fumes could be drawn into occupied or confined spaces. Carefully consider wind and air currents when positioning welder. Place the welder in a clean, dry place.

### **Starting the Welder (Flux Welding)**

#### **Before Welding**

- Read and understand the safety rules section of this manual (page 3).
  - Be sure all flammable materials are removed the work area.
  - There is good ventilation around the welding unit and the area that you will be working.
  - Be sure you have fire-extinguisher ready in-case of an accident
  - Put on appropriate protective clothing and insulated leather gloves
1. Connect work clamp onto metal to be welded
  2. Before plugging in: Adjust amperage and wire feed speed according to material type and thickness, and the wire size.
  3. Cut wire down to ¼” from the tip of the welding gun
  4. Plug in to power source. Then switch on machine.
  5. Position tip of welding gun ¼” from the point where the weld is to begin.
  6. Hold the mask in front of your eyes
  7. Press the trigger, and when the arc strikes, move the torch slowly in the chosen direction.
  8. If the arc gives a humming sound and blob begins to form at the end of the wire, you wire speed must be increased.

### **Starting the Welder (MIG)**



#### NOTE

Unit must have MIG conversion kit installed

1. Obtain gas cylinder and secure to stationary support.
2. Install regulator/flowmeter to cylinder valve.
3. Connect gas hose between regulator/flowmeter and gas input valve on back of welder unit.
4. Turn flow adjust screw to increase or decrease gas flow. Flow rate should be set when gas is flowing through welding power source and welding gun. Press gun trigger to start gas flow. Refer to welding wire manufacturer's recommended flow rate for the particular wire you are using.


## Maintenance

The owner/operator is responsible for all periodic maintenance.

 <b>WARNING</b>
Never operate a damaged or defective welder.
 <b>WARNING</b>
Improper maintenance will void your warranty.

### ***Welder Maintenance***

Make certain that the welder is kept clean and stored properly. Only operate the unit in a clean, dry operating environment. DO NOT expose the unit to extreme conditions, excessive dust, dirt, moisture or corrosive vapors.

 <b>CAUTION</b>
DO NOT use a garden hose to clean the welder.
Water will enter the welder through the cooling slots and damage the electrical connections.

Use a soft bristle brush to remove dirt.  
Use an air compressor (25 PSI) to clear dirt and debris from the welder.  
Inspect all air vents and cooling slots to ensure that they are clean and unobstructed.

Every 3 months
Repair or replace cracked cables
Every 6 months
Vacuum or blow out inside. During heavy service, clean out inside monthly

## Storage

1. Allow the welder to cool completely before storage.
2. Store in a clean, dry place out of direct sunlight

# Specifications

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## Specifications

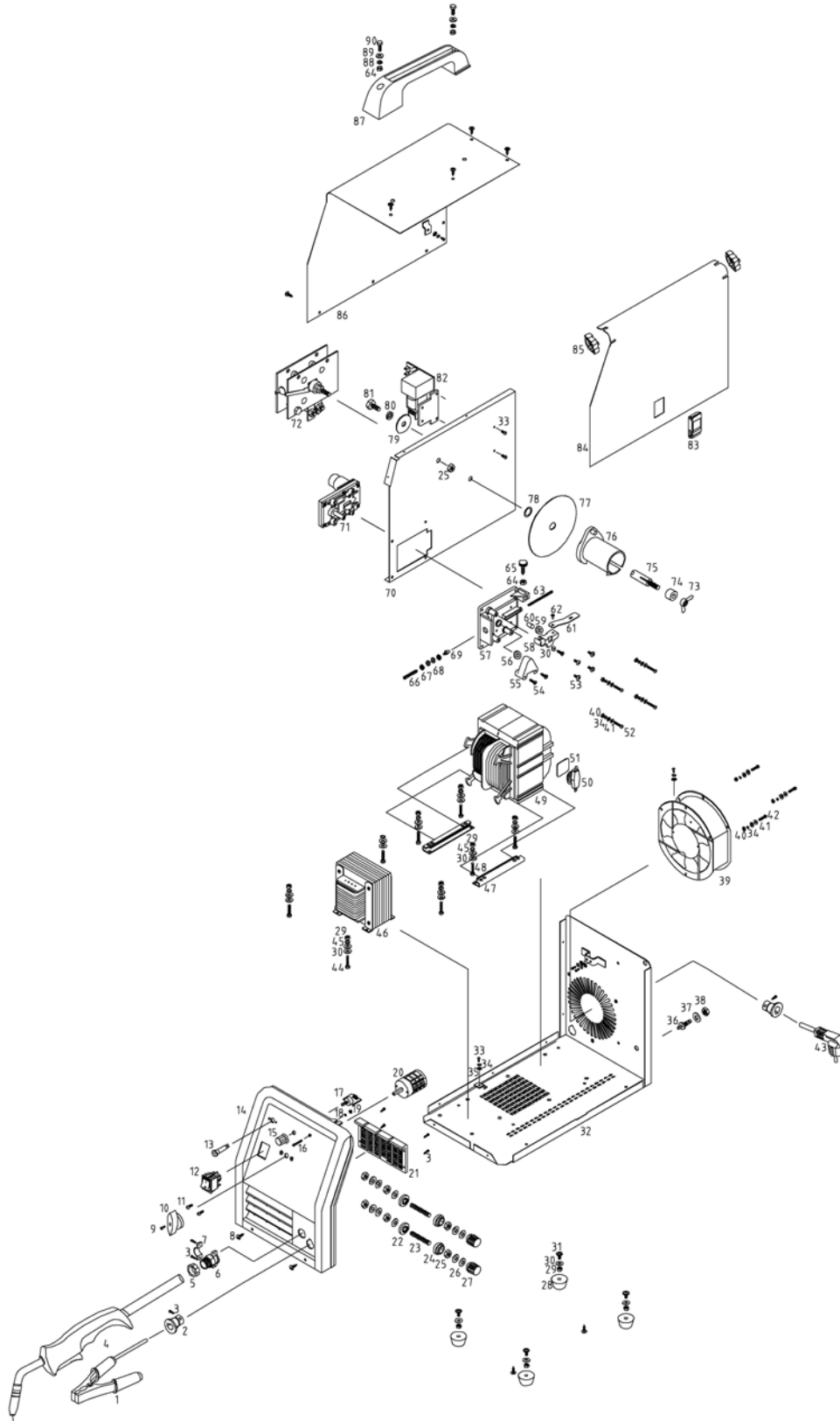
<b>Rated Input</b>	<b>80002</b>
Voltage	120V
Phase	1
Frequency	60Hz
Current	20A

### Duty Cycle and Overheating

Duty Cycle is a percentage of 10 minutes that the unit can weld at a given rated load without overheating. For example a 20% duty cycle means 2 minutes welding, 8 minutes resting. If unit overheats, wait 15 minutes for unit to cool, reduce amperage or duty cycle when welding resumes.

<b>Rated Output</b>	90A (max)	66A	50A	26A
<b>Duty Cycle</b>	20%	35%	60%	100%
<b>Voltage</b>	18.5V	17.3V	16.5V	15.3V

Parts Diagram



# Specifications

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## Parts List

Item#	Part #	Description	Qty
1	80002-01	Ground Clamp	1
2	80002-02	Lock Sleeve of Cable PA6	2
3	80002-03	Tapping Screw M3 x 12	4
4	80002-04	Welding Gun and Cable Host	1
5	80002-05	Lock Nut of Cable PA66	1
6	80002-06	Lock Bolt of Cable PA66	1
7	80002-07	Clip of Cable PA66	1
8	80002-08	Tapping Screw M4 x 10	16
9	80002-09	Screw M3 x 10	1
10	80002-10	Voltage Adjustment Knob	1
11	80002-11	Screw M4 x 12	2
12	80002-12	Power ON/OFF Switch	1
13	80002-13	Overheat Indicator	1
14	80002-14	Front Panel PP	1
15	80002-15	Knob of Feed Wire Speed Adjustment	1
16	80002-16	Bolt M4 x 20	2
17	80002-17	Rheostat of Feed Wire Speed	1
18	80002-18	Spring-Washer	2
19	80002-19	Nut M4	2
20	80002-20	Voltage Adjustment Switch	1
21	80002-21	Baffle PA66	1
22	80002-22	Washer DMC	1
23	80002-23	Copper Screw M8 x 48	2
24	80002-24	Insulating Washer DMC	1
25	80002-25	Nut M8	4
26	80002-26	Flat - Washer $\Phi 8$	8
27	80002-27	Locknut M8, Red, Black	2
28	80002-28	Rubber mount	4
29	80002-29	Nut M4	4
30	80002-30	Flat - Washer $\Phi 4$	8
31	80002-31	Bolt M4 x 12	4
32	80002-32	Frame	1
33	80002-33	Screw M4 x 8	7
34	80002-34	Spring - Washer $\Phi 4$	8
35	80002-35	Lock washer $\Phi 4$	2
36	80002-36	Gas Inlet, Copper	1
37	80002-37	Flat - Washer $\Phi 10$	1
38	80002-38	Nut M10	1
39	80002-39	Electric Fan	1
40	80002-40	Nut M4	4
41	80002-41	Spring - Washer $\Phi 4$	8
42	80002-42	Bolt M4 x 14	4
43	80002-43	Plug, FP-003 250V/16A	1
44	80002-44	Bolt M4 x 12	4
45	80002-45	Spring - Washer $\Phi 4$	8
46	80002-46	Inductor Assembly	1
47	80002-47	U-shaped Fastener $\delta=2\text{mm}$	2
48	80002-48	Bolt M5 x 20	4
49	80002-49	Transformer	1
50	80002-50	Thermal Cutout	1
51	80002-51	Aluminum Piece	1
52	80002-52	Bolt M4 x 16	4
53	80002-53	Bolt M4 x 10	4
54	80002-54	Screw M4 x 12	2



# Specifications

Item#	Part #	Description	Qty
55	80002-55	Shaft Support, PA66	1
56	80002-56	Feed Roller, Mild Steel	1
57	80002-57	Bracket, Pa66	1
58	80002-58	Pressure Arm Compl.	1
59	80002-59	Feed Roller, Mild Steel	1
60	80002-60	Shaft, Mild Steed	1
61	80002-61	Pressure Set, Mild Steel	1
62	80002-62	Connection Peg, Aluminum, 4 x 8mm	1
63	80002-63	Wire Guide in	1
64	80002-64	Nut M6	1
65	80002-65	Pressure Device M6 x 24	1
66	80002-66	Bolt, Copper	1
67	80002-67	Nut M12	1
68	80002-68	Flat - Washer $\Phi$ 12	1
69	80002-69	Wire Guide Out, Mild Steel	1
70	80002-70	Middle Clapboard, Mild Steel	1
71	80002-71	Wire Feed Unit, KD241 (DC24V)	1
72	80002-72	Diode Bridge UQD 180A	1
73	80002-73	Butterfly Nut M8	1
74	80002-74	Shaft Cover $\Phi$ 8	1
75	80002-75	Shaft, L=70mm	1
76	80002-76	Shaft of Wire Tray, PA6	1
77	80002-77	Big Washer Mild Steel	1
78	80002-78	Flat - Washer $\Phi$ 10	1
79	80002-79	Flat - Washer $\Phi$ 10	1
80	80002-80	Spring - Washer $\Phi$ 10	1
81	80002-81	Bolt M8 x 20	1
82	80002-82	PCB	1
83	80002-83	Panel Lock, PA66	1
84	80002-84	Side Panel (Right), Mild Steel	1
85	80002-85	Hinge,PA66	1
86	80002-86	Side Panel (Lift), Mild Steel	1
87	80002-87	Handle, ABS	1
88	80002-88	Spring - Washer $\Phi$ 6	2
89	80002-89	Flat - Washer $\Phi$ 6	2
90	80002-90	Bolt M6 x 16	2

# Troubleshooting

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## Troubleshooting

<b>Problem</b>	<b>Cause</b>	<b>Solution</b>
No weld output and fan is not running	Power switch is OFF	Switch ON
	Fuse overload	Reset breakers if necessary
Weld output but fan does not run	Blocked fan movement	Remove item that is blocking fan or replace fan motor
Erratic weld current	Loose cable connections	Clean and tighten cable connections
Erratic arc with excessive spatter	Poor, damaged electrodes	Use dry, properly stored electrodes
	Long arc length	Shorten arc length
	High amperage setting	Reduce amperage setting
Electrode wire feeding stops during welding	Gun cable/Gun malfunction	Straighten gun cable and/or replace damaged parts
	Poor drive roll pressure	Adjust drive roll
	Defective contact tip	Replace contact tip if blocked
	Restricted drive assembly	Assess and clear any restrictions at drive assembly and liner

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## Warranty

### CHAMPION POWER EQUIPMENT 1 YEAR LIMITED WARRANTY

Effective September 1, 2006. Replaces all undated warranties and all warranties dated before September 1, 2006.

#### **Warranty Qualifications**

Champion Power Equipment (CPE) will register this warranty upon receipt of your Warranty Registration Card and a copy of your sales receipt from one of CPE's retail locations as proof of purchase.

Please submit your warranty registration and your proof of purchase within ten (10) days of the date of purchase.

#### **Repair/Replacement Warranty**

CPE warrants to the original purchaser that the mechanical and electrical components will be free of defects in material and workmanship for a period of one (1) year from the original date of purchase (90 days for commercial & industrial use). Transportation charges on product submitted for repair or replacement under this warranty are the sole responsibility of the purchaser. This warranty only applies to the original purchaser and is not transferable.

#### **Do not return the unit to the place of purchase**

Contact CPE's Technical Service and CPE will troubleshoot any issue via phone or e-mail. If the problem is not corrected by this method, CPE will, at its option, authorize evaluation, repair or replacement of the defective part or component at a CPE Service Center. CPE will provide you with a case number for warranty service. Please keep it for future reference. Repairs or replacements without prior authorization, or at an unauthorized repair facility, will not be covered by this warranty.

#### **Warranty Exclusions**

This warranty does not cover the following repairs and equipment:

##### **Normal Wear**

Welders need periodic parts and service to perform well. This warranty does not cover repair when normal use has exhausted the life of a part or the equipment as a whole.

##### **Installation, Use and Maintenance**

This warranty will not apply to parts and/or labor if this welder is deemed to have been misused, neglected, involved in an accident, abused, loaded beyond the welder's limits, modified, installed improperly or connected incorrectly to any electrical component. Normal maintenance such

as spark plugs, air filters, adjustments, fuel system cleaning and obstruction due to buildup is not covered by this warranty.

#### **Other Exclusions**

This warranty excludes:

Cosmetic defects such as paint, decals, etc.  
Wear items such as filter elements, o-rings, etc.  
Accessory parts such as starting batteries, and storage covers.

Failures to due acts of God and other force majeure events beyond the manufacturer's control.

Problems cause by parts that are not original Champion Power Equipment parts.

#### **Limits of Implied Warranty and Consequential Damage**

Champion Power Equipment disclaims any obligation to cover any loss of time, use of this product, freight, or any incidental or consequential claim by anyone from using this welder. THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE

A unit provided as an exchange will be subject to the warranty of the original unit. The length of the warranty governing the exchanged unit will remain calculated by reference to the purchase date of the original unit.

This warranty gives you certain legal rights which may change from state to state. Your state may also have other rights you may be entitled to that are not listed within this warranty.

#### **Contact Information**

##### **Address**

Champion Power Equipment, Inc.  
Customer Service  
10006 Santa Fe Springs Rd.  
Santa Fe Springs, CA 90670

##### **Customer Service**

Mon – Fri 8:30 AM – 5:00 PM (PST/PDT)  
Toll Free: 1-877-338-0999  
Fax no.: 1-562-236-9429

##### **Technical Service**

Mon – Fri 8:30 AM – 5:00 PM (PST/PDT)  
Toll Free: 1-877-338-0999  
tech@championpowerequipment.com

Notes

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Notes