

Table of Contents

I. Overview	2
II. Technical Specifications	2
Pedal Type	2
Pneumatic Type	3
III. Operation Instructions	3
Pedal Type	3
Pneumatic Type	5
IV. Operation Procedures	7
Pedal Type	8
Pneumatic Type	9
V. General Troubleshooting	14
VI. Warranty Card	16
VII. Instructions for Warranty	17
VIII. Tips for Warranty	17

I. Overview

Precision Spot Welder is a type of currently popular AC pulse spot welder specially designed for the production of the world's high-grade batteries (including nickel-cadmium, cadmium-hydrogen, and lithium batteries). It adopts microcomputer single chip control, achieving more reliable and stable performance. Key characteristics include:

1. Compact and attractive dimension.
2. Features attractive and homogeneous welding spot, small spark, no black spots and stable welding current.
3. Fully eliminates the phenomenon of low voltage or condensation incurred to lithium batteries after welding and serves as ideal equipment for you to produce assembled batteries.
4. Adopting microcomputer single chip control, the welder may achieve single-pulse, double-pulse or multi-pulse welding.
5. Adopts digital setting for all parameters, achieving visual and accurate parameter adjustment.
6. The pressure of the two welding probes can be adjusted independently and easily, ensuring stable and reliable welding pressure.
7. Our welding switch is the only optoelectronic switch recommended in the country, which can eliminate the need of changing switches for similar welding machines.

II. Key Technical Specifications

Pedal Type

1. Power: AC 220/240V \pm 10% 50Hz \pm 2Hz
2. Max output power: 10KVA
3. Welding current: 00-99
4. Overall weight: 45KG
5. Dimensions: 800L \times 580W \times 1100H (mm)

6. Scope of application: Suitable for 0.03mm~0.5mm soldering lugs.

Pneumatic Type

1. Power supply: AC 220/240V \pm 10% 50Hz \pm 2Hz
2. Max output power: 10KVA
3. Input air pressure: 0.1-0.8Mpa
4. Welding current: 00-99
5. Overall weight: 45KG
6. Dimension: 800L \times 580W \times 1200H (mm)
7. Scope of application: Suitable for 0.03mm~0.5mm welding lugs.

III. Operation Instructions:

Pedal Type (Fig.1)

1. Power switch: Pull upward to switch on and pull downward to switch off.
2. Working indicator: It is normal if the indicator flickers continuously when switching power on.
3. Welding current: Used to set current value with setup values within the range of 00-99.
4. Fuse holder: 10A fuse, located at the lower left corner of the electric cabinet.
5. Welding switch: welding switch will activate according to the pressure set on the pressure setting if the job is pressurised with both welding tips only the welding switch will activate.

6. Wiring diagram for welding switch (Fig. 2):

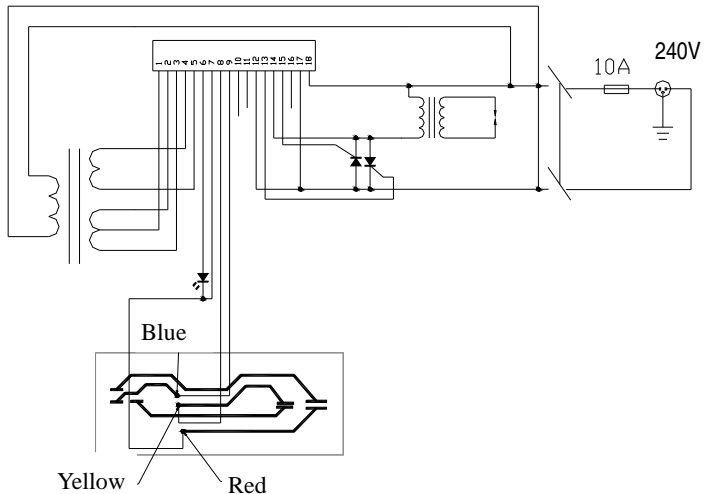
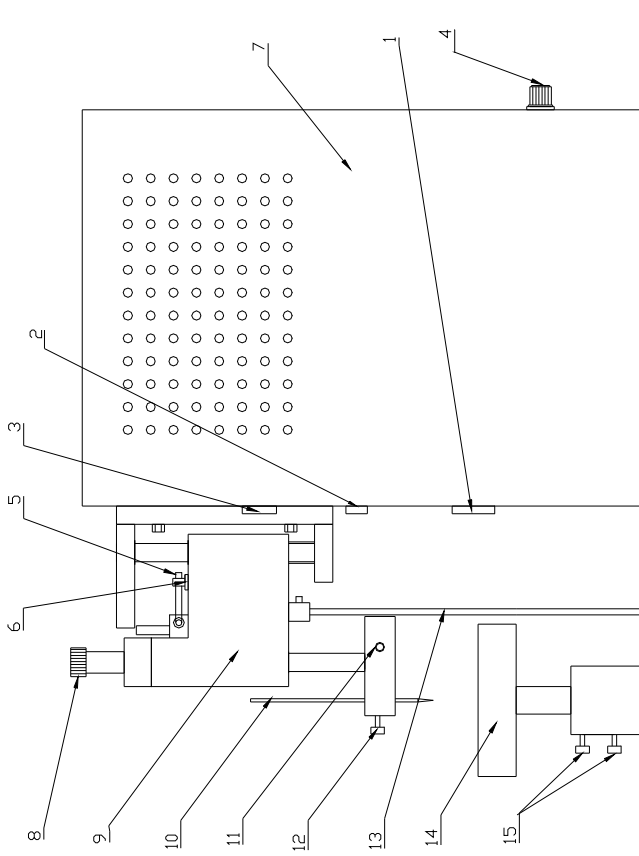


Fig.2: Wiring Diagram for Pedal Type Welding Switch

7. Electric cabinet.
8. Welding pressure-regulating knob: Regulates pressure, clockwise to increase pressure and counterclockwise to decrease pressure.
9. Hand piece sliding part.
10. Welding electrode.
11. Setscrew to adjust width of welding electrode.
12. Setscrew to adjust height of welding electrode.
13. Pedal lever: Links pedal switches.
14. Welding device table.
15. Setscrew to adjust the height of table.



Pneumatic Type (Fig.3)

1. Power switch: Pull upward to switch on and pull downward to switch off.
2. Working indicator: It is normal if the indicator flickers continuously when switching power on.
3. Welding current: Used to set current value with setup values within the range of 00-99.
4. Fuse holder: 10A fuse, located at the lower left corner of the electric cabinet.

5. Welding switch: welding switch will activate according to the pressure set on the pressure setting if the job is pressurised with both welding tips only the welding switch will activate.
6. Wiring diagram for welding switch (Fig. 4):

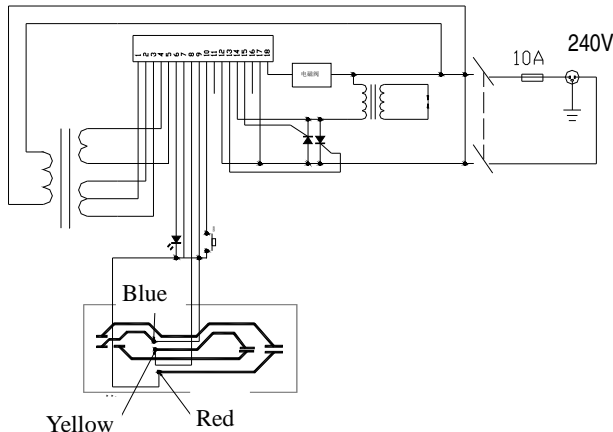
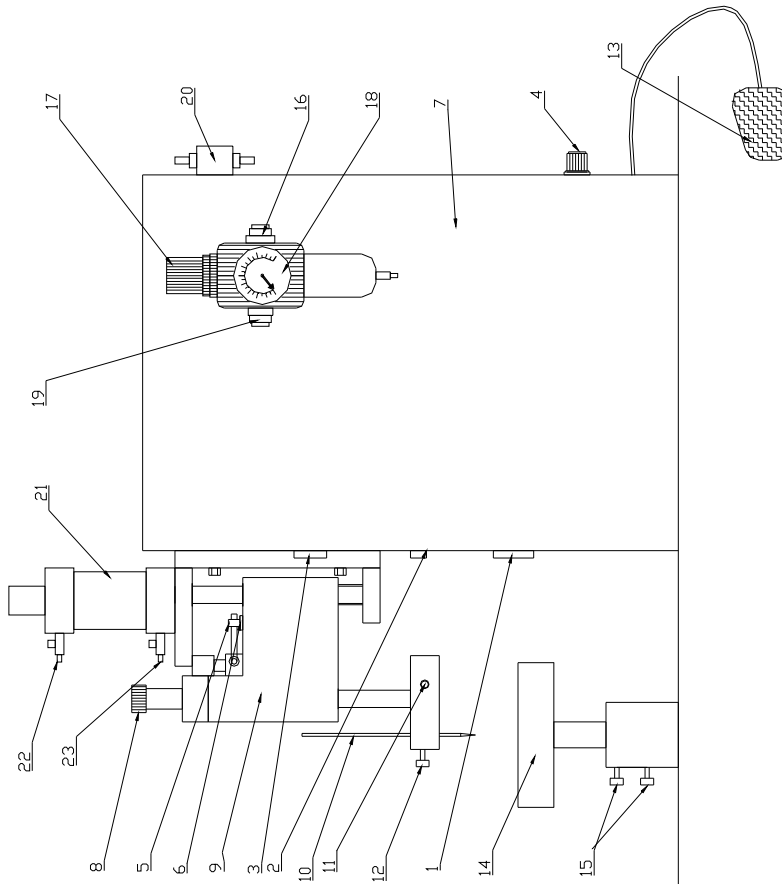


Fig.4: Wiring Diagram for **Pneumatic** Type Welding Switch

7. Electric cabinet.
8. Welding pressure-regulating knob: Regulates pressure, clockwise to increase pressure and counterclockwise to decrease pressure.
9. Hand piece sliding part.
10. Welding electrode.
11. Setscrew to adjust width of welding electrode.
12. Setscrew to adjust height of welding electrode.
13. Touch switch: Enables welding.
14. Welding device table.
15. Setscrew to adjust the height of the table.
16. Air pressure inlet: Air pressure input.
17. Air pressure regulating valve: Clockwise to increase air pressure and counterclockwise to decrease air pressure.
18. Pressure gauge: Displays pressure reading.
19. Air pressure outlet: Air pressure output.

- 20. Solenoid valve: Converts air pressure input and output.
- 21. Cylinder: Drives the hand piece up and down.
- 22. Cylinder input speed regulating valve: Controls downward speed.
- 23. Cylinder output speed regulating valve: Controls upward speed.



IV. Operation Procedures:

Pedal Type

1. Adjust the angle and height of pedal lever (See Fig.5):
Unscrew the lock-screw of the pedal lever with a wrench, adjust its angle and height to appropriate position (90° in static state) and then retighten the lock-screw.
2. Adjust the height of welding electrode (See Fig.6):
Use a wrench to unscrew Screw 12 for adjusting the height of welding electrode. Adjust (or replace) the length protruding under the electrode (usually 20mm, excessive length may cause welding electrode to distort) and retighten the screw.
3. Adjust the width of welding electrodes (See Figure 7):
Use a wrench to unscrew Screw 11 for adjusting the width of the welding electrodes. Adjust the two welding electrodes to optimal distance depending on the thickness of material and then retighten the screw.
4. Adjust the height of the device table (Fig.8):
Use a wrench to unscrew Screw 14 for the device table. Adjust the batteries and welding electrodes to optimal distance (normally 4mm) and retighten the screw.
5. Adjust welding pressure (Fig.9):
Manually turn welding pressure regulating setscrew 8, clockwise to increase pressure and counterclockwise to decrease pressure. Adjust it to proper pressure depending on welding requirements.
6. Inspection:
Check and clean carbon buildup on the welding electrodes with a file or sand paper. Step on the pedal with left foot to lower the hand piece and visually check if the welding electrode is well aligned with the welding material. If not, repeat steps 3 and 4 until the welding electrode is well aligned with the welding material.
7. Connect power:
Insert the plug into 240V power outlet and switch on power. It is normal if working indicator keeps flickering. If the working indicator

does not light up or lights up without flickering, it is required to switch off power and restart.

8. Trial welding:

Step on pedal to lower the hand piece. Keep stepping when welding electrode presses against welding material. When the two welding switches make contact, it begins to activate and welding. If required adjust welding current and welding electrode pressure depending on welding status to achieve optimal welding.

9. To ensure excellent welding quality, frequent maintenance should be conducted on welding electrodes. Use small files to file the tips of welding electrodes even and smooth.

Pneumatic Type

1. Adjust the height of welding electrodes (See Fig.6):

Use a wrench to unscrew Screw 12 for adjusting the height of welding electrode. Adjust (or replace) the length protruding under the electrode (usually 20mm, excessive length may cause welding electrode to distort) and retighten the screw.

2. Adjust the width of welding electrodes (See Figure 7):

Use a wrench to unscrew Screw 11 for adjusting the width of the welding electrodes. Adjust the two welding electrodes to optimal distance depending on the width of welding material and then retighten the screw.

3. Adjust the height of the device table (Fig.8):

Use a wrench to unscrew Screw 15 for device table. Adjust the batteries and welding electrodes to optimal distance (normally 4mm) and retighten the screw.

4. Adjust welding pressure (Fig.9):

Manually turn welding pressure regulating set screw 8, clockwise to increase pressure and counterclockwise to decrease pressure. Adjust it to proper pressure depending on welding requirements.

5. Adjust input pressure (Fig.10):

Hold and pull upward air pressure regulating valve 17. Turn

clockwise to increase pressure and anticlockwise to decrease pressure. Pressure gauge displays pressure readings. Now press the valve to set the value.

6. Adjust cylinder input speed (Fig.11):

Hold cylinder input speed regulating valve 22. Turn clockwise to increase pressure and the hand piece will go down faster; turn anticlockwise to decrease pressure and the hand piece will go down slower.

7. Adjust cylinder output speed (Fig.11):

Hold cylinder output speed regulating valve 23. Turn clockwise to increase pressure and the hand piece will go up faster; turn anticlockwise to decrease pressure and the hand piece will go up slower.

8. Connect power:

Insert the plug into 220/240V power outlet and switch on power. It is normal if working indicator keeps flickering. If the working indicator does not light up or lights up without flickering, it is required to switch off power and restart.

9. Trial welding:

Step on touch switch to lower the hand piece. When welding electrode presses against welding material and the two welding switches make contact, it begins to activate and welding. Adjust welding current, welding electrode pressure and air pressure depending on welding status to achieve optimal welding.

10. To ensure excellent welding quality, frequent maintenance should be conducted on welding electrodes. Use small files to file the tips of welding electrodes even and smooth.

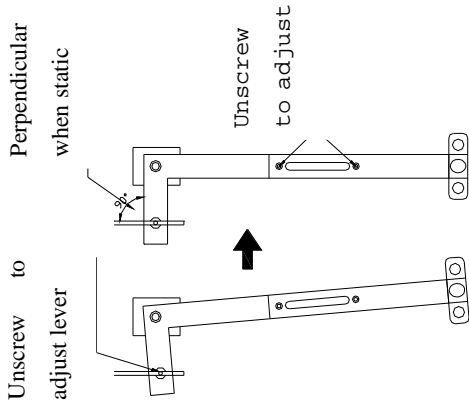


Fig.5: Adjust Width and Height of Pedal Lever

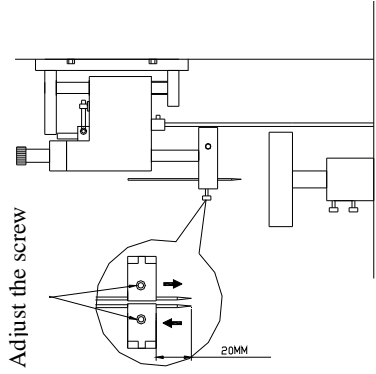


Fig.6: Adjust Height of Welding Electrode

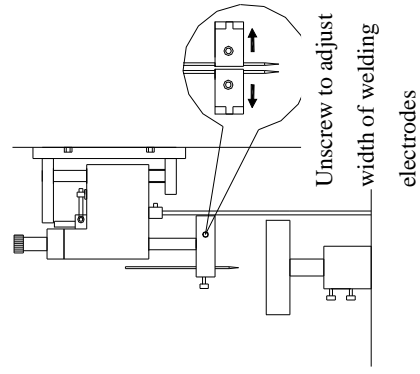


Fig.7: Adjust Width of Welding Electrode

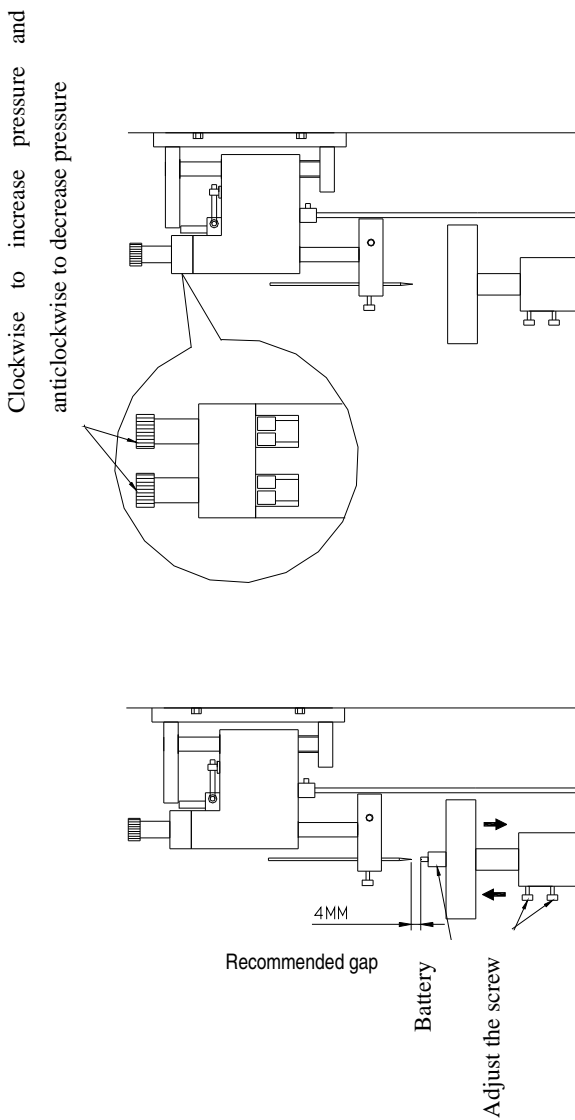


Fig.8: Adjust Height of Device Table

Fig.9: Adjust Welding Pressure

Clockwise to increase pressure and
counterclockwise to decrease
pressure

Clockwise to increase pressure and
anticlockwise to decrease pressure

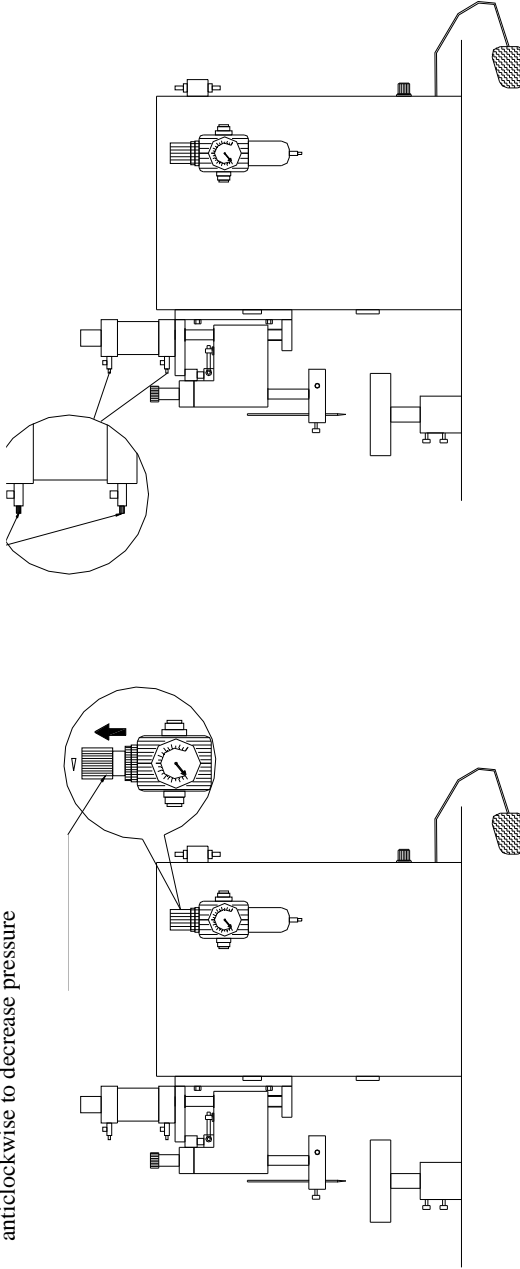


Fig.10: Adjust Input Air Pressure

Fig.11: Adjust Cylinder I/O Speed

V. General Troubleshooting:

As shown below:

No	Symptoms	Possible cause	Solution
1	No power indication at startup	<ol style="list-style-type: none"> 1. Fuse blown out. 2. Failure in input power. 	<ol style="list-style-type: none"> 1. Replace with fuses of same specifications. 2. Check power lines.
2	No power indication at startup but switch indicator lights up	<ol style="list-style-type: none"> 1. Loose control board. 	<ol style="list-style-type: none"> 1. Insert control board in the right direction.
3	Power indication but no welding spark.	<ol style="list-style-type: none"> 1. Air pressure too low. 2. Welding current set too low. 3. Gap between surface of welding electrode and battery too large. 4. Connection for welding switch broken. 5. Optoelectronic switch damaged. 6. Working indicator fails to light up or flicker, mainly due to power interference. 	<ol style="list-style-type: none"> 1. Increase air pressure. 2. Increase welding current. 3. Adjust gap between battery and surface of welding electrode to about 3-4mm. 4. Connect as shown in Fig.2 and 4. 5. Replace optoelectronic switch. 6. Switch off power and restart.

4	<p>In welding, it is easy to ignite and even burn battery casing.</p>	<ol style="list-style-type: none"> 1. Pressure for welding electrode too low. 2. Foreign matter on the lower side of welding electrode. 3. Incorrect welding material. 	<ol style="list-style-type: none"> 1. Increase welding pressure. 2. File the surface of welding electrode even and smooth with a small file. 3. Use proper welding material.
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Notes: In case failure remains unsolved, please contact manufacturer or supplier for maintenance.

Contact:

National Welding Supplies Pty Ltd

1/55 Newton Road, Wetherill Park NSW 2164

Web: www.welder.net.au

Email: info@nationalwelding.com.au

Tel: + 61 2 96045222 Fax: +61 2 96045444

VI. Warranty Card

Customer Name: _____ **Tel:** _____

Address: _____

Product Name: _____ **Model & Specifications:** _____

Date of Delivery: _____ **Product No:** _____

Failure descriptions:

Please stamp your purchase invoice on this page and send a copy to our After-sale Dept to establish information file. Keep the original in your file. One year back to base warranty period commencing on the date of delivery. In case of mechanical failure, it is recommended to first refer to the User Manual as well as the Instructions and Tips on the following pages if not please complete the copy with such detailed information as your company name, address and failure symptoms and fax a copy to our company or call us to describe detailed situations or send the product with the details back to base.

Stamp Invoice Here

Contact:

National Welding Supplies Pty Ltd

1/55 Newton Road, Wetherill Park NSW 2164

Web: www.welder.net.au

Email: info@nationalwelding.com.au

Tel: + 61 2 96045222 Fax: +61 2 96045444

VII. Instructions for Warranty:

1. Please refer to this User Manual before using this product and/or when encountering any failure (See “General Troubleshooting”).
2. In case of enquiry or normal maintenance, please present the Warranty Card and invoice, and contact our corresponding technicians for inquiry and maintenance.
3. For warranted maintenance, please fax your Warranty Card to our company and call us describing your company name, address, phone number, product model, number and date of delivery as well as failure symptom.

VIII. Tips for Warranty:

1. We provide free maintenance for our equipment for one year commencing on the date of delivery. Our warranty covers failure arising from normal use within such period.
2. We shall not be held responsible for failure arising from improper operation or intentional damage. However, we may provide paid services in this case.
3. In case of maintenance for equipment after our one-year warranty period, we will charge normally for such maintenance.
4. Welding electrodes are quick-wear parts and their service life is associated with welding material, its shape and size, operating methods and some other factors. Our warranty does not cover any damage to the welding electrodes.
5. Our warranty does not cover any of the following circumstances:
 - a) No Warranty Card and/or invoice are available.

- b) The Warranty Card and/or invoice are obliterated and are not in line with the product code.
- c) Damage arising from improper use, erroneous operation or unauthorized retrofitting.
- d) Damage caused due to use of components made by other manufacturers.
- e) Damage caused by unexpected factors.
- f) Expiration of the Warranty Period.
- g) Failure to make full payment as scheduled by the contract.

www.welder.net.au