Congratulations on the purchase of your SRA-250 H20 Welder. With this welding unit you can now experience the many advantages of the H20 welding process. The SRA-250 has been designed to use low voltage electricity to dissociate water into hydrogen and oxygen. It is safe, simple and reliable and ideal for quick, clean soldering and brazing.
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Features:

- Clean Pin Point Flame with Temperatures Up to 5000°F from a Pen Size Torch.
- The torch tip is a hydrodermic needle.
- Electronic indicator lights for distilled water level.

Package Contents:

- 1 torch
- Electrolyte
- Tips

Specifications:

<table>
<thead>
<tr>
<th>Model</th>
<th>Size</th>
<th>Weight</th>
<th>Max Power Watts</th>
<th>Current</th>
</tr>
</thead>
<tbody>
<tr>
<td>SRA-250</td>
<td>11 x 9.6 x 11”H</td>
<td>31 lbs.</td>
<td>190</td>
<td>110V</td>
</tr>
</tbody>
</table>

*220V available by special order
SAFETY PRECAUTIONS

CAUTION

BEFORE SETTING UP, OPERATING OR MAINTAINING THIS MACHINE, PLEASE READ THE ENTIRE CONTENTS OF THE MANUAL CAREFULLY. MAKE SURE YOU UNDERSTAND THE SAFETY RULES AND HAZARDS FOUND BELOW AND THROUGHOUT THE OPERATING MANUAL

Please Refer to the Following Safety Standards:

NEVER unscrew the water tank or booster tank unless the machine is turned off
NEVER use metal prongs or wire in the water tank
NEVER change tips without first putting out the flame. The machine can remain on when removing tips.
NEVER light torch until you can feel a sufficient amount of gas coming from the tip of the torch
NEVER turn the machine on when the booster tank is EMPTY

WARNING! AVOID ANY CONTACT WITH CAUSTIC SOLUTION. It is very corrosive. Avoid contact with eyes or skin. If in contact with skin, wash immediately with water to avoid caustic burns.

WARNING! DO NOT have a lit cigarette or open flame near the machine when either tank is open or when maintenance is being done on the machine.
## PARTS LIST FOR WELDER DIAGRAM

<table>
<thead>
<tr>
<th>#</th>
<th>PART DESCRIPTION</th>
<th>#</th>
<th>PART DESCRIPTION</th>
<th>#</th>
<th>PART DESCRIPTION</th>
<th>#</th>
<th>PART DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Three position switch</td>
<td>16</td>
<td>Torch Hose Fitting</td>
<td>31</td>
<td>Power cable</td>
<td>46</td>
<td>Tank</td>
</tr>
<tr>
<td>2</td>
<td>Safety cap</td>
<td>17</td>
<td>Fitting 1/8”</td>
<td>32</td>
<td>Cover</td>
<td>47</td>
<td>Rod Ø 6mm</td>
</tr>
<tr>
<td>3</td>
<td>Filling Neck</td>
<td>18</td>
<td>Front panel</td>
<td>33</td>
<td>Rubber ring</td>
<td>48</td>
<td>Register 5k 110v 10k 220v</td>
</tr>
<tr>
<td>4</td>
<td>Power control knob</td>
<td>19</td>
<td>Power control 110v-220v</td>
<td>34</td>
<td>Handle</td>
<td>49</td>
<td>4a. fuse</td>
</tr>
<tr>
<td>5</td>
<td>Minimum level indicator light</td>
<td>20</td>
<td>Rear panel</td>
<td>35</td>
<td>Fuse holder plug</td>
<td>50</td>
<td>Power transformer terminal</td>
</tr>
<tr>
<td>6</td>
<td>Maximum level indicator light</td>
<td>21</td>
<td>Brass screw for check valve</td>
<td>36</td>
<td>Nut 6MA</td>
<td>51</td>
<td>RFI suppression filter</td>
</tr>
<tr>
<td>7</td>
<td>Booster</td>
<td>22</td>
<td>Cap &amp; tee screw O-ring</td>
<td>37</td>
<td>Washer 6 mm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Tee screw</td>
<td>23</td>
<td>Check valve</td>
<td>38</td>
<td>Insulator Ø 6mm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Booster holder with 1/8” fitting</td>
<td>24</td>
<td>Booster seal gasket</td>
<td>39</td>
<td>Power transformer 110v-220v</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Torch</td>
<td>25</td>
<td>Check valve O-ring</td>
<td>40</td>
<td>Fitting 1/8” 90°</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Tips</td>
<td>26</td>
<td>Level circuit board</td>
<td>41</td>
<td>Rilsan tube 4x6 mm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>On indicator light</td>
<td>27</td>
<td>Rectifier diodes</td>
<td>42</td>
<td>Minimum level sensor</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Check valve cap</td>
<td>28</td>
<td>Aluminum base plate</td>
<td>43</td>
<td>Tank cover</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Torch holder/stand</td>
<td>29</td>
<td>Fan motor 110v-220v</td>
<td>44</td>
<td>Maximum level sensor</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>Torch hose</td>
<td>30</td>
<td>Fan</td>
<td>45</td>
<td>Tank O-ring</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Start Up:

1. Plug electric cord to appropriate 110V 220V electrical outlet. Push the off/on switch to fill position.

2. Locate the chrome cap on top of the cabinet. This is the inlet to the water tank. Unscrew the cap using the large funnel provided. Pour entire contents of caustic “C” solution into the water tank. As you start pouring the electrolyte into the tank, the minimum light will go off. Now both lights will be off until the red maximum light goes on.

   **NOTE**: If the red light does not come on, then add a very small amount of distilled water until it does.

   **CAUTION**: DO NOT add water once the red light comes on. Too much water will cause water to accumulate in the gas output torch hose, resulting in an inconsistent flame.

3. Find the booster tank located in the front of the cabinet. Unscrew the T-handle to remove the booster tank. Carefully pour methyl alcohol (also known as Methanol) into the tank, use the small funnel so that the fluid does not enter the center section of the tank.

   **NOTE**: Boric acid powder can be added to the methyl alcohol solution in a ratio of .5 to .7 ounces per quart. This should be premixed. Boric acid with methyl alcohol provides a reducing characteristic to the flame. Fill the booster tank to the fill mark. Screw the booster tank back in place with the T-handle. Tighten the T-handle finger tight.

   **CHECK THE LEVEL OF FLUID IN THE BOOSTER TANK EVERY FOUR HOURS OF RUNNING TIME. THE MACHINE SHOULD NEVER BE RUN**
WITHOUT THE CORRECT AMOUNT OF METHYL ALCOHOL SOLUTION IN THE BOOSTER TANK. EMPTY THE BOOSTER TANK EVERY 12-16 HOURS OF RUNNING TIME. WASH THE TANK IN HOT WATER AND DRY BEFORE USING.

4. Press on the proper size tip to the end of the torch. (See tip size chart on page 11)

5. Turn the machine on by pushing the on/off switch to ON position. Turn the round knob so that it corresponds to the setting in the tip chart. In 30 seconds to 1 minute, you can feel gas flowing out of the tip of the torch and hear gas bubbling in the booster tank. When this occurs, light the torch. If more gas is required, turn the knob to a higher position.
   a. Conversely, if less gas is required, turn the knob to a lower position. Use the lower position for tips with smaller orifice.

   **CAUTION**: NEVER light the torch until you can feel gas coming from the tip of the torch. Never change the tips without first putting out the flame. The machine can remain on when removing tips.

6. To turn off the machine **first put out the flame**. To put out the flame push in the back of the torch. When the flame is out, shut off the machine. Always leave the tip open to allow gas to escape.

   **CAUTION**: ALWAYS remove the booster tank before opening the water tank cover. This is to prevent methyl alcohol solution from being sucked into the water tank and contaminating it.
Routine Maintenance

It is essential to perform daily maintenance on your welder. Each day before starting your SRA H20 Welder, perform the following steps and cautions:

1. Remove the booster tank and check the level of methyl alcohol solution. If required, add solution till it reaches the maximum level mark. **EVERY FOUR HOURS OF RUNNING TIME CHECK THE LEVEL AND FILL.** At the end of 12-16 hours of running time, empty the tank and wash in hot water. Dry the tank and pour in a new solution.

   BEFORE REMOVING THE CAP FROM THE DISTILLED WATER TANK, FIRST REMOVE THE ALCOHOL BOOSTER TANK FROM THE MACHINE, AND THEN REMOVE THE CAP. THIS WILL PREVENT ALCOHOL FROM BEING SUCKED BACK INTO THE DISTILLED WATER TANK, WHICH WOULD CAUSE CONTAMINATION OF THE SOLUTION.

2. Check the water level by turning the toggle switch to the REFILL position. Observe the water level indicator lights:
   a. If the MAXIMUM RED light is on DO NOT add distilled water
   b. If BOTH lights are off, or YELLOW MINIMUM light is on, unscrew the water tank cap and add distilled water
   STOP IMMEDIATELY WHEN THE RED LIGHT COMES ON
   Warning! DO NOT add distilled water beyond the maximum point when the red light comes on. Too much water in the tank will cause water to accumulate in the plastic torch hoses. This results in an inconsistent flame. Screw the cap back on tight.
   c. If MINIMUM GREENISH YELLOW light comes on DO NOT operate the machine. Fill with distilled water until the red light comes on.
NOTE: When operating the machine, the red light will go off and no lights will be on. This is normal operating level. When the greenish yellow light goes on STOP immediately and add some distilled water.

CAUTION: NEVER OPERATE THE MACHINE WHEN THE MINIMUM LIGHT IS ON

3. When filling with distilled water, the minimum light will go off first. Both lights will be off until the full mark is reached. At that time, the red light will go on.

4. Screw the water cap on tight. Screw the booster tank back to the booster holder with T-handle.

NOTE: EVERY EIGHT HOURS CHECK BOTH THE DISTILLED WATER LEVEL AND BOOSTER TANK LEVEL. IT IS BEST TO FILL TANKS AT THE START OF EACH DAY. ELECTROLYTE CAUSTIC SOLUTION WILL USUALLY FUNCTION FOR AT LEAST SIX MONTHS TO ONE YEAR. WHEN THE SOLUTION BECOMES WEAK, POUR OUT ENTIRE CONTENTS AND THEN FLUSH SEVERAL TIMES WITH DISTILLED WATER UNTIL THE WATER APPEARS CLEAN. THEN ADD NEW CAUSTIC SOLUTION.
### TIP SIZE AND POWER CONTROL SETTING

#### SELECTION CHART FOR TIP SIZE & POWER CONTROL SETTING

<table>
<thead>
<tr>
<th>NUMBER OF TORCHES</th>
<th>GAUGE</th>
<th>BURNER TIP I.D.</th>
<th>COLOR</th>
<th>POWER CONTROL SETTINGS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>25</td>
<td>.010</td>
<td>RED</td>
<td>5-6</td>
</tr>
<tr>
<td>1</td>
<td>23</td>
<td>.013</td>
<td>ORANGE</td>
<td>6-8</td>
</tr>
<tr>
<td>1</td>
<td>22</td>
<td>.016</td>
<td>BLUE</td>
<td>8-9</td>
</tr>
<tr>
<td>1</td>
<td>21</td>
<td>.020</td>
<td>LT PURPLE</td>
<td>8-10</td>
</tr>
<tr>
<td>1</td>
<td>20</td>
<td>.023</td>
<td>PINK</td>
<td>9-10</td>
</tr>
</tbody>
</table>
1-YEAR LIMITED WARRANTY

Your H20 welder is warranted to the original purchaser for 1 year from the date of purchase; to be free from defects in materials and workmanship (but not against damages caused by misuse, negligence, accident, and faulty installation or by using materials incompatible with the equipment.)

SRA Soldering Products
www.sra-solder.com