If CUTTING...

Remove the cap from the cutting attachment's head nut followed by the nut itself. Fit the required nozzle (see table), screw the head nut back in place and tighten up with the spanner provided.

Seat the cutting attachment in the end of the blowpipe's shank and tighten up the retaining ring. Check that the control valves on the blow pipe are fully closed then slowly open the valve on the acetylene cylinder with the key provided – keep this in place so you can turn the gas off quickly in an emergency. The contents gauge will register the pressure remaining in the cylinder. Set the regulator's pressure adjustment valve to the working pressure required then check for leaks (see Gas Safety). Repeat the process and checks for the Oxygen connections. If no leaks are found you may proceed.

Now you can light the cutter. Open the shank's acetylene valve then, pointing the spark lighter along the nozzle, squeeze its trigger. Adjust the acetylene valve to stop the flame smoking, then slowly open the cutter's oxygen valve until you have a neutral flame – a well-defined white cone surrounded by a mere haze of Acetylene.

Finally, depress the cutter's lever and re-adjust the oxygen flow to give a neutral flame once again.

BASIC TECHNIQUES

This guide is designed to help the user to safely set up and dismantle the welder. It is not intended as a guide to welding techniques as it is assumed that the user already has the necessary training/knowledge and experience.

EQUIPMENT CARE

Never push the equipment beyond its design limits. If it will not do what you want with reasonable ease, assume you have the wrong tool for the job. Ask at your local HSS Hire Shop for advice.

When not in use, store the equipment somewhere clean, dry and safe from thieves. Do not coil hoses round gas cylinders. Do store gas cylinders as described under Gas safety.

Handle hoses with care. Never expose them to heat, slag, sparks, oil or grease. Never trail them anywhere they will be vulnerable to damage nor where they could trip someone.

Treat nozzles with care. If they block up, clean them out with one of the reamers provided. However, never use these to clean out the small preheat and cutting stream holes at the seating end of the nozzle.

Never interfere with the seating surfaces of nozzle or cutting attachment.

Look after the gas cylinder. Keep them away from dirt, never open their valves with anything other than the key provided.

If WELDING or LEAD BURNING...

Turn off the blowpipe's acetylene valve, then the oxygen valve (in that order) and wait for the flame to go out.

Close the gas cylinder valves then open and close first the blowpipe's oxygen, then its acetylene valves to release the pressure, ensuring the regulator gauges show zero.

If CUTTING...

Close the shank's acetylene valve, wait for the flame to go out, then close the oxygen valves on both the cutter and shank (in that order).

Close the gas cylinder valves and relieve the pressure in the system.

Open the oxygen valves on the shank first then the cutter, wait for the pressure gauge to zero, and close both valves in reverse order. That done, open the shank's acetylene valve and close it when the acetylene pressure drops to zero.

FINALLY...

Turn the oxygen and acetylene regulator's pressure adjustment valves fully anti-clockwise and leave the equipment to cool before dismantling. Put everything back in its case and coil the hose without kinks.

FINISHING OFF

If CUTTING...

Close the shank's acetylene valve, wait for the flame to go out, then close the oxygen valves on both the cutter and shank (in that order).

Close the gas cylinder valves and relieve the pressure in the system.

Open the oxygen valves on the shank first then the cutter, wait for the pressure gauge to zero, and close both valves in reverse order. That done, open the shank's acetylene valve and close it when the acetylene pressure drops to zero.

FINALLY...

Turn the oxygen and acetylene regulator's pressure adjustment valves fully anti-clockwise and leave the equipment to cool before dismantling. Put everything back in its case and coil the hose without kinks.

Backfires

If the equipment ‘backfires’ (that is, if gas burns inside the blowpipe) immediately close all oxygen valves, followed by the acetylene valves. Once the fire is extinguished, let the equipment cool and check its condition before re-lighting. If in doubt, contact your local HSS Hire Shop for advice.

Adjust the acetylene valve to stop the flame smoking, then slowly open the cutter's oxygen valve until you have a neutral flame – a well-defined white cone surrounded by a mere haze of Acetylene.
GENERAL SAFETY

For advice on the safety and suitability of this equipment contact your local HSS Hire Shop.
This equipment has been designed to be used by an able bodied adult. If you suffer from either a temporary or permanent disability, you must seek expert advice before using this equipment.
Keep children, animals and bystanders away from the work area.

Never use this equipment if you are ill, feeling tired, or under the influence of alcohol or drugs.
This equipment should only be used by a competent person who has read and understood these instructions.
There is a serious risk of personal injury if you do not follow all instructions laid down in this guide.

Some materials being welded may produce substances that, when inhaled, can be harmful to health. A suitable mask MUST be worn when using this equipment. Respiratory protective equipment is available for hire, contact your local HSS Hire Shop for details.

Wear non-flammable clothing and footwear, plus gauntlets and welding goggles, to protect you against sparks and slag. Avoid loose garments and jewellery.

Gas cylinders are heavy, never attempt to lift a cylinder, full or empty, on your own always get help.

Gas Safety

Store oxygen and acetylene cylinders separately in a cool, clean, well-ventilated place offering protection against mechanical damage and accidental ignition.
Before lighting up, check gas connections for leaks by smearing washing-up liquid on the joints and looking for bubbles. Never for leaks with a naked flame. Tighten leaking connections with a spanner provided. If the leak remains STOP close all cylinder valves and contact your local HSS Hire Shop.

Ensure the work area is well lit and ventilated and that the air is free from dust and fumes etc., especially if flammable. The use of an air blower is not advised, as it may affect the welding flame and, in the case of flammable. The use of an air blower is not advised, as it may affect the welding flame and, in the case of flammable. The use of an air blower is not advised, as it may affect the welding flame and, in the case of flammable. The use of an air blower is not advised, as it may affect the welding flame and, in the case of flammable.

Check the equipment’s condition before use, especially the hoses and the rubber ‘O’ rings on gas connections. If the equipment show signs of excessive wear or damage, do not use it. Return it to your local HSS Hire Shop.
Information on COSHH regulations is available from your local HSS Hire Shop.

WARNING
This equipment has been designed to be used by a competent person who has read and understood these instructions. This equipment should only be used by a competent person who has read and understood these instructions. This equipment should only be used by a competent person who has read and understood these instructions. This equipment should only be used by a competent person who has read and understood these instructions. This equipment should only be used by a competent person who has read and understood these instructions. This equipment should only be used by a competent person who has read and understood these instructions. This equipment should only be used by a competent person who has read and understood these instructions.

The welding kit is supplied with 2 spanners, 1 for opening the cylinder, the other for tightening all connections. When making connections, NEVER extend the spanner’s length to gain extra torque, or hit it with a hammer or mallet. Clamp or chain the gas cylinders in the trolley and check that their valves are clean, opening them momentarily to blow out any dirt.

Fit each cylinder with the correct regulator, making sure that all connections are undamaged, clean and free from grease. Never use sealing compound on any connection.

Note: All acetylene connections (with grooves in the nuts) have left-handed threads.

GETTING STARTED

Gas Nozzle & Pressures

<table>
<thead>
<tr>
<th>Mild Steel Thickness</th>
<th>Nozzles Size</th>
<th>Working Pressure</th>
<th>Acetylene Consumption</th>
<th>Oxygen Consumption</th>
</tr>
</thead>
<tbody>
<tr>
<td>WELDING</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.2 mm</td>
<td>2</td>
<td>0.14 bar</td>
<td>0.14 bar</td>
<td>1.9 L/M</td>
</tr>
<tr>
<td>2.0 mm</td>
<td>3</td>
<td>0.14 bar</td>
<td>0.14 bar</td>
<td>1.4 L/M</td>
</tr>
<tr>
<td>2.0 mm</td>
<td>5</td>
<td>0.14 bar</td>
<td>0.14 bar</td>
<td>2.4 L/M</td>
</tr>
<tr>
<td>CUTTING</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.6 mm</td>
<td>3</td>
<td>0.15 bar</td>
<td>1.52 bar</td>
<td>3.0 L/M</td>
</tr>
<tr>
<td>2.5 mm</td>
<td>3</td>
<td>0.15 bar</td>
<td>1.52 bar</td>
<td>1.5 L/M</td>
</tr>
<tr>
<td>2.0 mm</td>
<td>3</td>
<td>0.15 bar</td>
<td>1.52 bar</td>
<td>0.94 L/M</td>
</tr>
</tbody>
</table>

The contents gauge will register the pressure remaining in the cylinder. Set the regulator’s pressure adjustment valve to the working pressure required, then check for leaks (see Gas Safety). Repeat the process and check for the Oxygen connections. If no leaks are found you may proceed.

Fire Safety

Never weld or cut any container that has held fuel or any flammable or oil based product. Always ensure combustible materials are removed to 9m from the work area or protect them with suitable guards. Always keep a dry powder extinguisher handy.

Check the equipment’s condition before use, especially the hoses and the rubber ‘O’ rings on gas connections. If the equipment show signs of excessive wear or damage, do not use it. Return it to your local HSS Hire Shop.

Connect the supply hoses to the respective regulators, ensuring the flashback arrestor is fitted between them. The Oxygen hose is coloured blue and all connections have a right hand thread. The Acetylene hose is coloured red and all connections have a left hand thread.

Check that both regulators’ pressure adjustment valve is fully open (turn anti-clockwise). Connect the supply hoses to either the welding blowpipe, or the lead burning blowpipe. If using the welding blowpipe, select either the welding mixer or the cutting attachment. Whichever you are using, attach the required nozzle.

IF WELDING or LEAD BURNING...

Screw the nozzle (see table) into the mixer and the mixer into the shank to leave the nozzle at a convenient working angle.

Check that the control valves on the blow pipe are fully closed then slowly open the valve on the acetylene cylinder with the spanner provided – keep this in place so you can turn the gas off quickly in an emergency. The contents gauge will register the pressure remaining in the cylinder. Set the regulator’s pressure adjustment valve to the working pressure required, then check for leaks (see Gas Safety). Repeat the process and check for the Oxygen connections. If no leaks are found you may proceed.

I Red Alert!
The recommended pressure ranges for welding and cutting are marked in green on the gauges. Never let the pressure rise into the red portion of the scale.

Open the acetylene valve on the blowpipe and purge the system, then fully close the valve. Repeat the process for Oxygen. Do not open both valves at once.

Now you can light the blowpipe. Open its acetylene valve, hold the spark lighter at right angles to the nozzle, then squeeze the trigger.

Adjust the acetylene valve so the flame stops smoking, then slowly open the oxygen valve until you have a neutral flame, a well-defined white flame cone surrounded by a mere haze of acetylene.