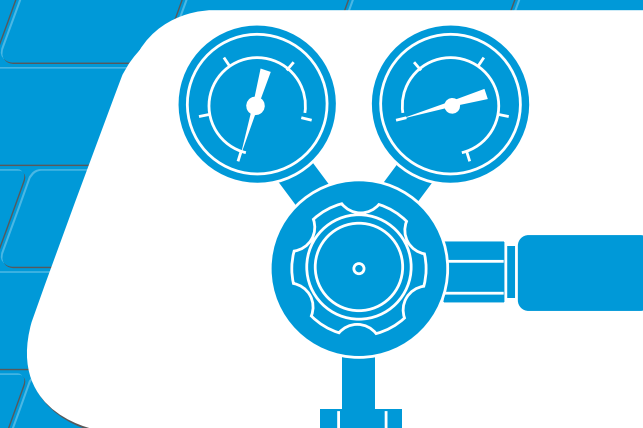


# HSS Hire



## Oxy-Acetylene Welding & Cutting + Lead Burning Kit

The complete oxy-acetylene cutting and welding system, all you need for professional quality results.



Code 55800/55810/55820

### 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 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 attachments.**

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

### FINISHING OFF

**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.



**... have you been trained**

The law requires that personnel using work equipment have received adequate training and must be competent when using the equipment within the workplace.

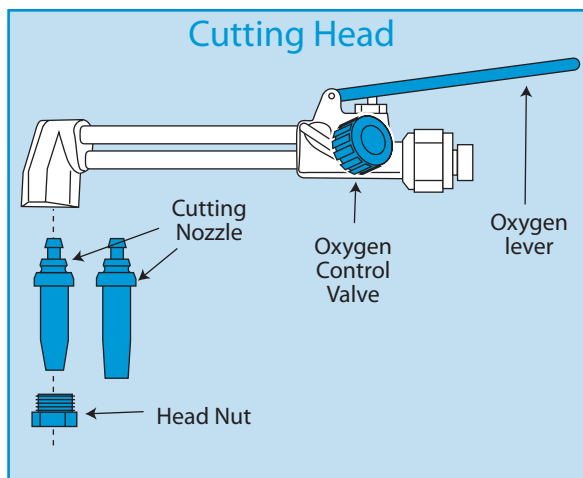
Training is available at HSS Training Solutions  
0845 766 7799

**...any comments?**

If you have any suggestions to enable us to improve the information within this guide please e-mail your comments or write to the Safety Guide Manager at the address below  
e-mail: [safety@hss.com](mailto:safety@hss.com)

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Group Office: 25 Willow Lane, Mitcham, Surrey CR4 4TS

Web Site: <http://www.hss.com>



**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.

### 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 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.

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

## GENERAL SAFETY

For advice on the safety and suitability of this equipment contact your local HSS Hire.

The hirer has a responsibility to ensure that all necessary risk assessments have been completed prior to the use of this equipment.

Most welding tasks may be considered as hot work in site situations and may be subject to specific permits to work.

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.



Suitable welding goggles are supplied with this kit. If the lenses of the goggles become damaged, return them to your local HSS Hire.



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 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.

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 can affect the welding flame and, in the case of accidental fire, can help it to spread. Ask about fume extractors at your local HSS Hire.

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.

Information on COSHH regulations is available from your local HSS Hire.

## Gas Safety

Store oxygen and acetylene cylinders upright in a cool, clean, well-ventilated place offering protection against mechanical damage and accidental ignition. Before lighting up, check gas connections for leaks by spraying APPROVED leak detector spray on the joints and along the length of the hose checking for bubbles. A soapy water solution must NEVER be used - as the substances could combine to create an explosive formula. Never check for leaks with a naked flame. Tighten leaking connections with the spanner provided. PTFE tape should NEVER be used to affect a gas seal. IF the leak remains STOP, close all cylinder valves and contact your local HSS Hire. Whilst in use, cylinders must always be secured in the approved trolley and away from the immediate work area.

## Fire Safety

Never weld or cut any vessel or container that is pressurised or 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. Whilst in use - ensure the spanner is left in the acetylene cylinder so you can turn the gas off quickly in an emergency.

## GETTING STARTED

### Gas Nozzle & Pressures

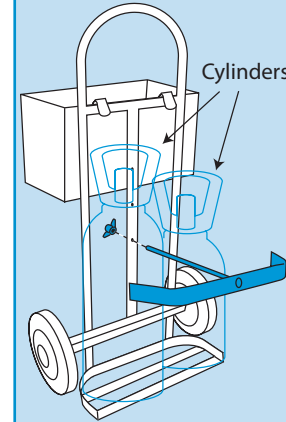
Mild Steel Thickness	Nozzles Size	Working Acetylene	Pressure Oxygen	Gas Consumption	
				Acetylene	Oxygen
WELDING					
1.2 mm	2	0.14 bar	0.14 bar	0.94 L/M	0.94 L/M
2.0 mm	3	0.14 bar	0.14 bar	1.4 L/M	1.4 L/M
2.6 mm	5	0.14 bar	0.14 bar	2.4 L/M	2.4 L/M
CUTTING					
3-6 mm	A-sfn 1/32	0.15 bar	1.5-2.0 bar	8.0 L/M	20-25 L/M
6-20 mm	A-fn 3/64	0.15 bar	2.0-3.0 bar	9.5 L/M	40-50 L/M

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. Ensure eye protection is worn when carrying out this procedure.

Fit each cylinder with the correct regulator, making sure that all connections are undamaged, clean and free from

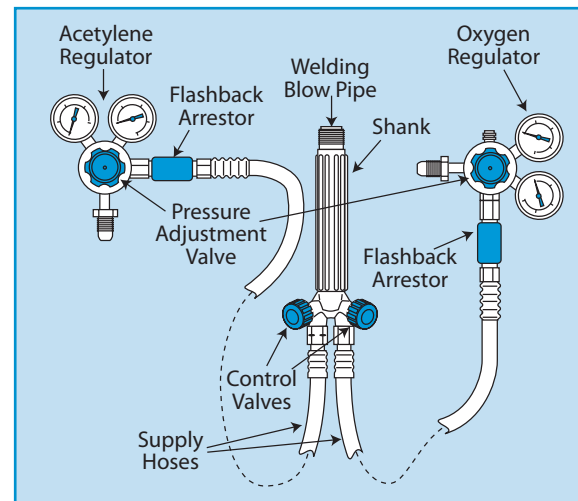
## Cylinder Trolley



grease. **Never use sealing compound** on any connection.

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

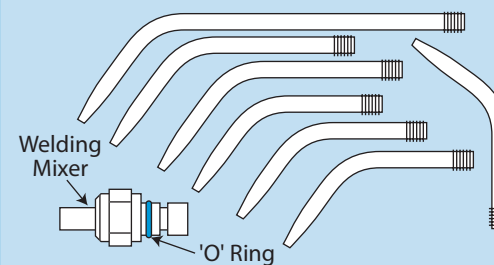
Connect the supply hoses to the respective regulators, ensuring the flashback arrestor is fitted between them. The Oxygen hose is coloured blue and all connections have a RIGHT hand thread. The Acetylene hose is coloured red and all connections have a LEFT hand thread.



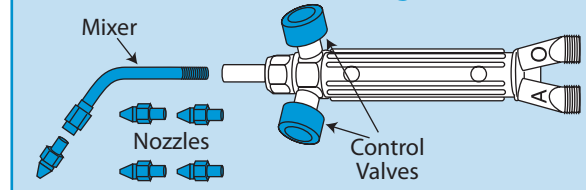
Check that both regulators' pressure adjustment valve is fully closed (turn anti - clockwise).

Connect the supply hoses to either the welding blowpipe, or the lead burning blowpipe.

## Welding Nozzles



## Lead Burning



If using the welding blowpipe, select either the welding mixer or the cutting attachment.

Which ever 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.

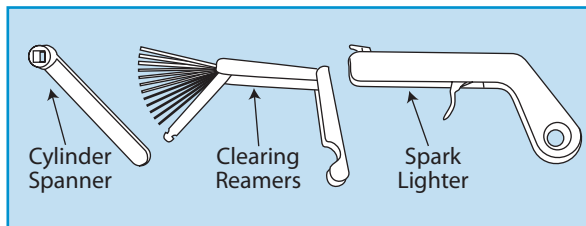
Check that the control valves on the blow pipe are fully closed then slowly open the valve on the acetylene cylinder with the spanner provided – keep this in place so you can turn the gas off quickly in an emergency. The contents gauge will register the pressure remaining in the cylinder. Set the regulator's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

## ! Red Alert !

Never let the pressure rise into the red portion of the scale on the pressure gauges.

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.