



INSTRUCTIONS FOR:
GAS WELDING/CUTTING KIT
 MODEL: **SGA1**

Thank you for purchasing a Sealey product. Manufactured to a high standard this product will, if used according to these instructions and properly maintained, give you years of trouble free performance.

IMPORTANT: PLEASE READ THESE INSTRUCTIONS CAREFULLY. NOTE THE SAFE OPERATIONAL REQUIREMENTS, WARNINGS AND CAUTIONS. USE THE PRODUCT CORRECTLY AND WITH CARE FOR THE PURPOSE FOR WHICH IT IS INTENDED. FAILURE TO DO SO MAY CAUSE DAMAGE AND/OR PERSONAL INJURY AND WILL INVALIDATE THE WARRANTY. PLEASE KEEP INSTRUCTIONS SAFE FOR FUTURE USE.

1. SAFETY INSTRUCTIONS

- ✓ Always have a fire extinguisher nearby.
- x Never use oxygen or fuel gas to blow soot or dirt from your clothes.
- x **DO NOT** wear ragged clothes, as sparks can ignite the ragged or loose ends.
- ✓ Always wear goggles or a helmet with the appropriate shade lens.
- x **DO NOT** use shaded safety spectacles or unshaded face shield visors for cutting or welding. They **DO NOT** stop the harmful rays which cause eye damage.
- ✓ Use gauntlet type gloves made from heat resistant material.
- ✓ Secure cylinders to a trolley, wall or post to prevent them from falling.
- ✓ All cylinders should be used and stored in an upright position.
- x Never drop or strike a cylinder. **DO NOT** use cylinders that have been dented.
- ✓ Cylinder caps should be used when storing or moving cylinders.
- ✓ Empty cylinders should be kept in specified areas and clearly marked 'EMPTY'.
- x Never use oil or grease on any inlet connections, outlet connections or cylinder valves.
- ✓ Examine hoses for cuts, burns or worn areas before each use. Also inspect fittings for damage. If any damage is found, replace immediately.
- x **DO NOT** repair hose with tape.
- ✓ Always use reverse flow check valves on torch and regulator. This greatly reduces the possibility of mixing gases in the regulator or hoses. Reverse flow check valves are an important safety precaution.
- ✓ Working pressure on the acetylene regulator should **NEVER** be set above 15psi (1 bar).
- ✓ Keep all threads and unions clean and free from oil, dirt or grease.
- x Never apply oil or grease to any thread.
- ✓ **These instructions cover the use of the kit on mild steel. If used on any other materials, extra precautions will have to be taken.**
- ✓ Make sure that there is a good flow of air to the user and the tip, at all times. Use a welding fume extractor if conditions are poor or space is confined.
- x Never leave the gun alight and unattended.
- ✓ For safety advice regarding gas bottles (oxygen and acetylene) refer to the supplier of the bottles.
- ✓ Make sure bottle keys are in place at all times so that in the event of an emergency the valves can be turned off quickly.
- ✓ If this kit is used in on business premises, extra safety is available by fitting Sealey SGA3/RFA or MFA and SGA4/RFA or MFA flashback arresters.
- ✓ Keep hoses away from flame at all times. Make sure that hoses are laid flat where possible and not in a position where they can be run over by vehicles, which would result in permanent damage.
- ✓ **LEAKING HOSES CAN KILL.** Check all joints weekly to make sure there are no leaks.
- ✓ If hoses are not long enough, join them together with the manufacturer's couplings only.
- x **DO NOT** join damaged hoses, they must be replaced immediately.
- ✓ Remember at all times **BLUE = OXYGEN 'O'**
RED = ACETYLENE 'A'
- ✓ At no time may you interchange parts contained in this kit with those of other manufacturers. Only Sealey replacement items should be used.
- ✓ Acetylene fittings have a left-handed thread and notches on hose unions to indicate this.
- ✓ The regulators in this kit have no user-serviceable parts. All repairs/calibrations must only be undertaken by a BCGA approved service agent.



2. CONTENTS

Contents	Model Number
Torch Handle, Welding Attachment, Cutting Attachment	SGA6
Welding Nozzles No. 2, No. 5, No. 10	
Cutting Nozzles 1/32", 3/64", 1/16"	
Oxygen Regulator, Twin Gauge Single Stage	SGA3
Acetylene Regulator, Twin Gauge Single Stage	SGA4
Nozzle Cleaning Tools	SGA1/NCT
Hoses, 2, 3/8" x 1.5mtr, complete with fittings and non-return valves	SGA5

3. OPERATION

- 3.1.1. Make sure that the cylinders are secure as noted in safety precautions.
- 3.1.2. Whilst standing on one side 'crack' each cylinder valve. 'Cracking' is to quickly open and close the valve allowing gas to escape and clear the valve of any foreign bodies.
- ☐ **WARNING!** If grease or oil is found, discontinue use of cylinder immediately and contact your gas supplier.
- 3.1.3. Attach oxygen and acetylene regulators to the appropriate cylinders. A wrench should be used to ensure tight connections. To tighten, turn **CLOCKWISE** for OXYGEN, and **ANTI-CLOCKWISE** for ACETYLENE.
- 3.1.4. Regulator adjusting screws should be turned anti-clockwise to relieve the pressure on the diaphragm before opening the cylinder valves. If this is not done, pressure from the cylinder can damage the diaphragm and render the regulator inoperative.
- 3.1.5. Both cylinder valve-to-regulator connections should be checked for leaks. Stand so that the cylinder valve is between you and the regulator. Slowly open the cylinder valve. Use an approved leak detector.

- 3.1.6. Connect the correct hose to each regulator. **BLUE** to **OXYGEN** and **RED** to **ACETYLENE**. Tighten nuts securely with wrench. If any sign of oil or grease is found, discontinue use immediately.
- 3.1.7. Blowing out hoses. Perform this on one hose at a time and in a well ventilated area, otherwise you may create conditions for fire or explosion.
- Turn the oxygen regulator adjusting screw to allow 5psi to pass through hose.
 - Allow oxygen to flow approximately 10 seconds to purge the hose.
 - Repeat the above steps for acetylene hose.

Note: New hoses contain a preservative powder which must be blown out before use.

- 3.1.8. Connect the two hoses to the respective connections on the torch handle.
- WARNING!** If traces of oil or grease are found, **DO NOT** use. Contact your gas supplier immediately.
- 3.1.9. Always use reverse flow check valves on torch handles.
- 3.1.10. Always connect welding tip or cutting attachment to torch handle. Always check seal, coupling nut and torch head for damage or oil. If either is found, discontinue use and contact your supplier.
- WARNING!** The teflon seal on the torch inlet must not be damaged or missing, otherwise gases will mix inside the torch and result in flashbacks or backfires.
- 3.1.11. Check connections for leaks. Adjust the regulators to normal operating pressure and, using an approved leak detection solution, check for leaks at hose and check valve connections. If a leak is found, tighten nut more securely. If leak persists, discontinue use and call your supplier.
- WARNING!** Never set acetylene regulator at a delivery pressure above 15psi (1 bar).
- 3.1.12. Neutral flame adjusting
- Refer to welding tip or cutting nozzle chart to determine the proper regulator pressures.
 - Open oxygen valve on the torch handle (and preheat oxygen valve on cutting attachment). Adjust the oxygen regulator to the desired working pressure, and then close the oxygen valve.
 - Open acetylene valve on the torch handle, adjust the acetylene regulator to the desired working pressure. Then close the acetylene valve.
 - Hold torch in one hand and spark lighter in the other.
 - Open the acetylene torch valve about 1/4 turn and ignite the acetylene gas coming out of the tip.
- WARNING!** Always point torch away from person when lighting.
- Turn on the acetylene torch valve slowly until smoke subsides and the flame jumps away from the end of the tip slightly.
 - Slowly open the oxygen valve until a brilliant neutral flame is reached.
- WARNING!** Always use goggles or eye protection when welding or cutting.

3.2. Shutting down and leaving safe

- 3.2.1. Turn off the acetylene valve on the torch and **then** turn off the oxygen valve on the torch.

Note: Reversal of this procedure can cause damage to the torch.

- 3.2.2. Close both cylinder valves.
- 3.2.3. Drain gas from oxygen regulator by opening the oxygen valve on the torch handle. Similarly drain gas from the acetylene regulator.
- 3.2.4. Release adjusting screws on regulators. This is done by turning them anti-clockwise.

4. TECHNICAL INFORMATION

4.1. CUTTING CAPACITIES

Mild Steel	Nozzle Size	Operating Pressure (bar - lbf/in ²)		Gas Consumption (ltr/m - ft ³ /h)		
		Oxygen	Acetylene	O ₂ - Cutting	O ₂ - Heating	Acetylene
6mm / 1/4"	1/32"	1.4 - 20	0.30 - 4	14.15 - 30	8.5 - 18	8.0 - 17
13mm / 1/2"	3/64"	2.1 - 30	0.35 - 5	30.70 - 65	10.4 - 22	9.4 - 20
25mm / 1"	1/16"	2.8 - 40	0.40 - 6	67.50 - 143	13.2 - 28	11.8 - 25
50mm / 2"	1/16"	3.1 - 45	0.40 - 6	78.30 - 166	13.2 - 28	11.8 - 25
75mm / 3"	1/16"	3.5 - 50	0.40 - 6	88.70 - 188	13.2 - 28	11.8 - 25

4.2. WELDING CAPACITIES

Mild Steel	Nozzle Size	Operating Pressure (bar - lbf/in ²)		Gas Consumption (ltr/m - ft ³ /h)		
		Oxygen	Acetylene	O ₂ - Welding	O ₂ - Heating	Acetylene
1.2mm / 18SWG	LW02	0.14 - 2	0.14 - 2	11.8 - 25	4.2 - 9	3.8 - 8
2.6mm / 12SWG	LW05	0.28 - 4	0.21 - 3	23.5 - 50	4.2 - 9	3.8 - 8
4mm / 8SWG	LW10	0.35 - 5	0.28 - 4	56.6 - 120	4.2 - 9	3.8 - 8

5. DECLARATION OF CONFORMITY

Declaration of Conformity We, the sole UK importer, declare that the product listed below is in conformity with the following standards and directives.

GAS WELDING/CUTTING KIT

Model: **SGA1**

BS EN ISO 730:1995 Gas Welding Equipment - Safety Device
Incorporating Flame/Flashback Arrestor .
BS EN ISO 5172:1997 Manual blowpipes for welding, cutting and heating

The construction file for this product is held by the Manufacturer and may be inspected, by a national authority, upon request to Jack Sealey Ltd.

Signed by Mark Sweetman



6th August 2003

For Jack Sealey Ltd. Sole UK importer of Sealey Quality Machinery.

NOTE: It is our policy to continually improve products and as such we reserve the right to alter data, specifications and component parts without prior notice.

IMPORTANT: No liability is accepted for incorrect use of this equipment.

WARRANTY: Guarantee is 12 months from purchase date, proof of which will be required for any claim.

INFORMATION: For a copy of our latest catalogue and promotions call us on 01284 757525 and leave your full name and address, including postcode.



Sole UK Distributor,
Sealey Group,
Bury St. Edmunds, Suffolk.



01284 757500



01284 703534



sales@sealey.co.uk



www.sealey.co.uk