



# OXYGEN/FUEL FLASHBACK

MODEL NO'S: **SGA3/FBA, SGA4/FBA**

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 & 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. KEEP THESE INSTRUCTIONS SAFE FOR FUTURE USE.



Refer to  
instruction  
manual



Wear eye  
protection

## 1. SAFETY

### 1.1. SPECIFIC FLASHBACK ARRESTOR SAFETY WARNINGS

- ✓ The information on the flashback arrestor such as description of gas, maximum operating pressure and direction of flow sign has to be followed.
- ✓ More than one component shouldn't be connected to the flashback arrestor.
- ✓ No marking (e.g. item number, date of first operation etc.) by scratching or punching is advised. Under these circumstances, Flashback arrestor may get damaged and leakage may occur.
- ✓ Flashback arrestors should be used according to the information marked on them.
- ✓ These products are manufactured by latest technology regarding to specify technical rules, present standards and instructions.
- ✓ User must follow the recommendations in this manual.
- ✓ Staff that use welding equipment and their components should have knowledge about these processes or be trained by registered by institute/staff according to current regulations in place.
- ✓ Always have a fire extinguisher nearby.
- ✓ It is important to read the information on the flashback arrestor which gives a description of gas, maximum operating pressure and direction of flow which needs to be noted and observed.
- ✓ More than one component shouldn't be connected to the flashback arrestor.

### 1.2. SITUATIONS THAT MAY CAUSE FLASHBACK

- ✓ When cutting torch is damaged or used incorrectly.
- ✓ When high pressurized oxygen gas mixed in the low pressurized flammable gas fitting as a result of wrong adjustment of operating pressures.
- ✓ When components connected which are not suitable for each other.
- ✓ If the Oxygen cylinder run out of gas; flammable gas flows inside the oxygen cylinder reversely through regulator.
- ✓ When untutored and inexperienced users use the products. When instructions are not followed.
- ✓ When components are connected with the wrong tools.
- ✓ Usage of gases or pressures different than ones which are defined on this manual and on the product.
- ✓ When product is used at temperatures under -20°C and over +60°C.

### 1.3. Keep 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.

- ✓ Empty cylinders should be kept in specified areas and clearly marked 'EMPTY'.
- ✗ 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.
- ✗ **DO NOT** repair hoses with tape.
- ✓ Keep all threads and unions clean and free from oil, dirt or grease.
- ✗ Never apply oil or grease to any thread.
- ✓ 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.
- ✓ **LEAKING HOSES CAN KILL.** Leak test all connections and valves prior to each use of the equipment.
- ✗ **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 this part with those of other manufacturers.
- ✓ Only Sealey replacement items should be used.
- ✓ All repairs/calibrations must only be undertaken by a BCGA approved service agent.

## 2. INTRODUCTION

Protects operators, regulators and gas supply from the consequences of severe forms of flashback. Colour coded for easy recognition. It also conforms to BS EN ISO 5175-1:2017 standard.

### 3. SPECIFICATION

Model No:..... SGA3/FBA /SGA4/FBA  
Gas Type SGA3/FBA: .....Oxygen  
Gas Type SGA4/FBA..... Acetylene  
Maximum Pressure .....20bar

### 4. DEFINITIONS

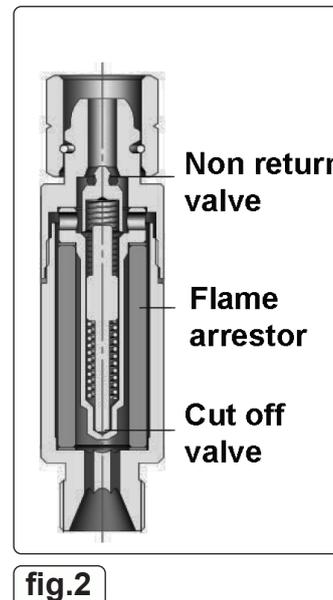
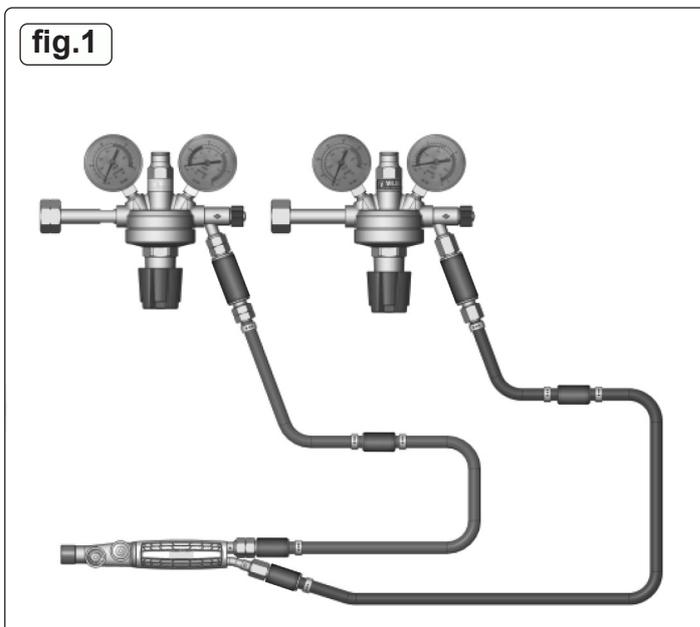
- 4.1. Flame flashback is fast movement of flame to the source of gas (Cylinder, tank, installation, hose etc.) which is formed during welding, cutting etc. made by mixture of oxygen and flammable gas.
- 4.2. Flashback arrestors are security devices, which prevent the flow of gas during flashback. The arrestor prevents the flame spread to gas source by blocking the flame and stopping gas flow.

### 5. FUNCTIONS REFER TO FIG.2

- 5.1. **THERMAL CUT-OFF VALVE**  
The spring inside the flashback arrestor blocks the valve which is continuously pressed against the gas flow direction. When flame flashback occurs, the solder which holds the spring, melts with the high temperature. The spring is then released and the connected valve stops gas flow.
- 5.2. **FLAME ARRESTOR**  
A stainless steel filter stops the flame reaching the flashback arrestor and prevents it reaching the source of gas.
- 5.3. **GAS NON-RETURN VALVE**  
Prevents the gas flowing in reverse direction.
- 5.4. **WORKING PRINCIPLES**
  - 5.4.1. The spring inside the flashback arrestor for regulators blocks the valve which is continuously pressed against to gas flow direction.
  - 5.4.2. The pressure of the flowing gas releases the compression of spring and permits the gas flow through the torch.
  - 5.4.3. Sintered stainless steel Cr-Ni designed filter inside the flashback arrestor holds the flame for flashback.
  - 5.4.4. The solder melts during any flame flashback if the temperature reaches 100°C, pin frees from the solder and cuts the gas flow.
  - 5.4.5. After that flashback arrestor cannot be used anymore and should be changed.

### 6. ASSEMBLY REFER TO FIG.1

- 6.1. Check all connections that they are clean and undamaged before assembly.
  - 6.2. Assemble the product according to the direction of gas flow.
  - 6.3. Check for leakage at maximum operating pressure after assembly.
  - 6.4. Hoses and their connections must meet current standards in place.
  - 6.5. Hoses should be fixed in a suitable manner (e.g. hose clamp).
  - 6.6. Tighten the arrestor connections using a suitable tool.
- ▲ **DANGER:** For the products which are used for Oxygen, all connections and units should be free of grease.



### 7. MAINTENANCE

- 7.1. The flashback arrestors are to be tested by a qualified and authorised person at regular intervals according to regulations in place.
  - 7.2. The flashback arrestor is to be tested for gas tightness and gas return according to regulations in place.
  - 7.3. Couplings are wearing parts and have to be tested by a qualified and authorised person according to regulations in place.  
These tests have to be performed when the couplings connected as well as disconnected.
  - 7.4. Store the product inside the package during transportation to avoid damage.
  - 7.5. Product should be stored in its packaging until used. Keep away from grease and other dirt sources.
  - 7.6. Products should be stored in temperatures between +5°C and +35°C and kept away from dust and humidity.
- × **DO NOT** use products, which are damaged during transportation or storage.

## 8. TROUBLESHOOTING

<b>No gas flow.</b>	Check flow direction, working pressure, shut-off valve, gas source, cut off valve and the coupling isn't locked off.
<b>Pressure sensitive gas cut-off valve PV.</b>	A green collar covers a reset collar. In order to reset the user has to look for the cause of the flashback, then move the sleeve in the direction of the arrow. Providing the cause is found, the safety device can be reset and work can resume.
<b>The thermal shut off valve was activated TV.</b>	The device has to be replaced.
<b>External tightness.</b>	Dust and damages can cause leakage of couplings and coupling pins. Therefore, they have to be checked accordingly and replaced if necessary.
<b>Gas return NV.</b>	The device has to be replaced.
<b>Leaking in disconnected situation.</b>	Unit to be exchanged (only those with a integrated coupling).



### ENVIRONMENT PROTECTION

Recycle unwanted materials instead of disposing of them as waste. All tools, accessories and packaging should be sorted, taken to a recycling centre and disposed of in a manner which is compatible with the environment. When the product becomes completely unserviceable and requires disposal, drain any fluids (if applicable) into approved containers and dispose of the product and fluids according to local regulations.



**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 product.

**Warranty:** Guarantee is 12 months from purchase date, proof of which is required for any claim.

Sealey Group, Kempson Way, Suffolk Business Park, Bury St Edmunds, Suffolk. IP32 7AR



01284 703534



sales@sealey.co.uk



www.sealey.co.uk