



## 1.0 PURPOSE

This work Instruction describes the procedure for the inspection, testing and identification requirements of portable and mobile oxy-fuel gas systems for welding, cutting, heating to ensure compliance with the requirements of Australian Standards and S.A. Occupational Health, Safety and Welfare Regulations.

## 2.0 SCOPE

This instruction applies to all portable and mobile oxy-fuel gas systems for welding, cutting, heating and allied processes:

- Owned by this Company or Contractors (Service Providers).
- Hired, borrowed or leased.
- Testing to be performed by a qualified accredited repairer, or appropriately trained person to determine suitability for continued use.
- All repairs / servicing to gas equipment other than gas hoses shall be carried out by a qualified accredited repairer.

## 3.0 REFERENCES

- 3.1 AS4603** - Flashback Arrestors safety devices for the use with fuel gases and oxygen or compressed air.
- 3.2 OHS&W Regulations** - Part 3 Div 3.2 Duties: Maintenance, inspection, repair and cleaning.
- 3.3 Welding Technology Institute of Australia** - Health and Safety in Welding Technical Note. 7
- 3.4 AS4839** - The safe use of portable and mobile oxy-fuel gas systems for welding, cutting, heating and allied processes.
- 3.5 AS4267** Pressure regulators for use with industrial compressed gas cylinders.
- 3.6 AS1335** Hose and hose assemblies for welding, cutting and allied processes.

## 4.0 DEFINITIONS

### Company

SIMEC Mining /Liberty Primary Steel



**Welding Officer**

Technical Officer Welding or nominated Company Officer - Engineering Services.

**Shall**

Indicates that the statement is mandatory.

**Should**

Indicates a recommendation.

**Flashback Arrestor**

A device designed to quench a flame front (flashback or decomposition), on equipment where fuel gas and oxygen / compressed air are being used in combination.

**Flashback**

The sustained retrogression of the flame back into the mixing chamber resulting in a squealing sound and a characteristic smoky, sharp pointed flame.

**Annual Testing of Flashback Arrestors**

The Annual Testing of in-service Flashback Arrestors shall be performed at the start of each Calender year as per WI37.MTS.116.

**Initial Test Year**

The year in which the item of equipment was first placed into service.

**Compressed gas regulator**

A regulator fitted with inlet fittings complying with AS 2473 and used for reducing a generally variable inlet pressure to an outlet pressure (to be constant as possible) in connection with the flow rate, which may be changed.

**Gas Hose**

Hoses used to convey acetylene, oxygen and liquefied petroleum gases (LPG) conforming to AS1335.

**Accredited repairer**

A person or company accredited by a third party who has the necessary training and equipment to carry out repairs to gas equipment.

**Trained Person**

A person who as participated in appropriated training during an apprenticeship or other approved training acceptable to the Company.

**5.0 PROCEDURE**

**5.1 Job Safety and Environmental Analysis**

<u>JOB HAZARD</u>	<u>HAZARD CONTROL</u>
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Not required for this procedure.

**Refer Hazard Register for any temporary hazards and their control measures.  
Refer InfoSafe for access to Material Safety Data Sheets.**

## 5.2 Responsibilities

- 5.2.1 The owner of any portable and mobile oxy-fuel gas systems for welding, cutting heating and allied processes shall be responsible for implementing this inspection and testing.
- 5.2.2 Testing to be performed by a qualified accredited repairer, or appropriately trained person to determine suitability for continued use.
- 5.2.3 All repairs / servicing to gas equipment other than gas hoses shall be carried out by a qualified accredited repairer.

## 5.3 Identifying Equipment

- 5.3.1 **All flashback arrestors.** Shall suitably identified as per WI37.MTS.116. Contractor may use this identification system adopted by Liberty primary Steel or use a suitable alternative identification system, but the identification year colour for Flashback Arrestors shall comply with the Company's WI37.MTS.116 for equipment used on the Company's sites. The Flashback Arrestor shall also be engraved to identify the year item placed into service.
- 5.3.2 **Cutting Heating torch / appliance.** The departments or owner's name and initial test year (see clause 5.5.5) shall be clearly identified (engraved) onto the body of the cutting heating torch or by use of a suitable robust identification tag, attached to the cutting / heating torch. This information will be used to record and identify the item during documented testing. The information on the identification tag shall be clearly legible at all times. Should the item not be clearly identified the item shall be removed from service.
- 5.3.3 **Regulator.** The departments or owner's name and initial test year (see clause 5.5.5) shall be clearly identified (engraved) onto the body of the cylinder regulator or by using a suitable robust tag, attached to the cylinder regulator. This information will be used to record and identify the item during documented testing. The information on the identification tag shall be clearly legible at all times. Should the item not be clearly identified the item shall be removed from service.
- 5.3.4 **Hoses.** Hoses shall be identified by a tag attached securely to the end of the hoses attached to the cylinder regulator. Hoses without a tag attached shall not be used until appropriately tagged as per Clause 5.3.5.
- 5.3.5 **Liberty Primary Steel Identification.** The system used to identify Regulator



and Torch equipment shall include the year item placed into service, Liberty Primary Steel department, item description and equipment number e.g.

2011SM/R 001

2012SP/T 001

- **2011** = Initial test year, **SM** = Steelmaking, **R** = Regulator, **001** allotted number.
- **2012** = Initial test year, **SP** = Steel Products. **T** = Torch. **001** allotted number.

**Liberty Primary Steel Whyalla Hose Identification.** The system used to identify hose sets should consist of a robust tag attached to the end of the hose attached to the regulator this should provide the identification tag some protection from damage.

Information on tag shall identify department and hose e.g.

- **IM / 001**
- **IM** = Ironmaking **001** hose set number

**Contractors** may use this system or their own, **whichever system used - it must have documented tractability.**

#### **5.4 Event and frequency for inspection and testing portable and mobile oxygen-fuel gas systems for welding, cutting, heating.**

**5.4.1 Flashback Arresters.** All flashback arrester shall be tested annually as per WI37.MTS.116 and withdrawn from service and replaced every 5 years,

**5.4.2 Regulator.** Before use: check regulator for any damage this will involve a visual inspection for damage e.g. damaged gauges or fittings, if no damage detected then a leak test of the regulator whilst attached to the cylinder shall be performed. Should a leak occur and it can't be stopped by a simple task such as tightening of a loose fitting then it will need to be placed out of service and repaired by an accredited repairer or replaced.

**Six monthly.** All regulators shall undergo a six monthly functional and pressure test to ensure correct operation. This will involve a visual inspection for damage e.g. damaged gauges, O-ring or fittings. If no damage detected then a leak test of the regulator whilst attached to the cylinder shall be performed. Should a leak occur and it can't be stopped by a simple task such as tightening of a loose fitting then it will need to be placed out of service and repaired by an accredited repairer or replaced.

**Five years.** After five years of in-service use the regulator shall be scraped and replaced. The replacement regulator is to be identified as per this Work Instruction.

**5.4.3 Hoses.** All hoses shall be inspected before use of the equipment this shall involve a visual inspection for damage to hoses (cuts, burn marks) and also bending any suspect hose in a tight radius to ensure reinforcement is not



visible. Also check hose connectors for damage or wear. After visual test perform a leak test. Any leaks in hose will require the hose or a section of the hose to be replaced. Leaking hose fittings / connectors will also need to be replaced if leakage detected, which can't be stopped by tightening of connections. A competent person can do these repairs. After repair, hoses are to be leak tested before being placed back into service.

**Six monthly.** Hoses shall undergo a documented inspection as above.

**5.4.4 Torch and attachments.** Shall undergo a visual inspection for damage to torch body, threads and sealing surfaces. Any damage to be repaired by accredited repairer before being placed into service. Carry out leak test at working pressure.

All torches shall undergo a six monthly functional test to ensure correct operating function of shut off valves and threaded connectors. A pressure test is to be performed. This pressure test is a basic leak test, which can be performed whilst torch is attached to cylinders via hoses. This test shall be documented and recorded.

**Five years.** After five years of in-service use the torch shall be scraped and replaced. The replacement torch is to be identified as per this Work Instruction.

### 5.6 Withdrawal of Non – Compliant Equipment

**5.6.1** Flashback arresters, Torch, Hoses and Regulators, which fail to comply with an inspection or test period, shall be withdrawn from service and replaced. Replaced equipment shall comply with this Work Instruction.

### 5.7 Register

**5.6.2** A register shall be kept by the owner or contractor, which documents the inspection, testing and compliance of the item.

### 5.8 Short Term Contracts

**5.6.3** Service providers who work on the company's sites where contracts are for a period of less than four weeks in a 12 month period will not need to comply with this Work Instruction in full, but shall have acceptable documented evidence that their Flashback Arrestors, regulators, hoses and torches have been tested and comply with AS4603.

## 6.0 DOCUMENTATION

**6.1** Attachment 1 - Flashback Arrestor test tag.



## INSPECTION of PORTABLE and OXY FUEL GAS SYSTEMS

**WI37.CEN.006**  
Revision 5  
**Central Engineering**

- 6.2** Attachment 2 - List of Accredited Gas repairers in Whyalla.
- 6.3** Attachment 3 - Gas Equipment Six Monthly Inspection Check Sheet

Attachment No.1

<b>ABC COMPANY PTY LTD</b> <b>Ph. (XX) XX123456</b>	
<b>TESTED</b>	<b>DATE</b> FOR REFERENCE ONLY REFER TO WI37.MTS.116 ATTACHMENT 1

Sample test tag

## Attachment No.2

List of accredited repairers in South Australia

Company Name	Address	Phone
W.E.S.S. Welding Equipment Sales and Service	Adelaide	(08) 82432200
Avid Engineering	Whyalla	(08) 86457033
	Whyalla	

Note; L

**FOR REFERENCE ONLY  
REFER TO  
WI37.MTS.116  
ATTACHMENT 3**

repair their own gas equipment.



**Attachment No.3**

<b>Gas Equipment Six Monthly Inspection Check Sheet</b>				
	<b>Inspection</b>	<b>YES</b>	<b>NO</b>	<b>Comments</b>
<b>Regulator</b>	I.D. Number			
	Is regulator suitable for use?			If <b>No</b> replace
	Are there any signs of damage?			
	Check for pressure creep. Is there pressure creep?			If <b>Yes</b> repair or replace
	Perform leak test (leaks detected)			If <b>Yes</b> *repair or replace
	Are gauge pressure increments indicators visible (if applicable)			
	Is the regulator older then 5 years			If <b>Yes</b> then replacement required
	O-Rings in good condition?			If <b>No</b> replace
<b>Hoses</b>	I.D. Number			
	Are hose colours correct for gas used?			
	Are fittings in good condition?			
	Bend hoses in a tight radius can cuts or excessive wear be seen?			If <b>Yes</b> repair or replace
	Perform leak test (leaks detected)			If <b>Yes</b> repair or replace
<b>Torch</b>	I.D. Number			
	Are there signs of damage which would compromise torch safety			If <b>Yes</b> rectify
	Perform leak test (leaks detected)			If <b>Yes</b> *repair or replace
	Is the torch older then 5 years			If <b>Yes</b> then replacement required

Any items requiring repair are to be tagged and removed from service.

\*Repairs to be carried out by accredited repairer.

<b>Comments:</b>

<b>Inspected By:</b>	<b>Print name:</b>	<b>Sign</b>	
<b>Occupation</b>		<b>Date</b>	