

Safe Operating Procedure #04 – Oxy-cutting

	Activities	Procedures	Hazards/Risks	Controls
1	Check gas bottles.	Check oxy and LPG bottles are upright and connections are firm.	Both LPG and Acetylene are extremely flammable (classified as both a <i>Hazardous Substance</i> and a <i>Dangerous Good</i>). Bottles can fall, move or travel. Loose connections can cause leaks which could lead to fire, burns or an explosion.	Bottles to remain upright and connections to be tight and leak-proof. Refer to safety data sheets for in depth storage and handling requirements. All instructions for use as per the SDS are to be followed. Be aware of the location of your nearest fire extinguishers, as well as the types of fires they are suited for and how to use them. In the event of a fault, do not proceed until the Supervisor instructs you to. The Supervisor must document fault in the Works Diary. Repair to be arranged and alternate safe-to-use equipment is to be provided.
2	Check condition of equipment.	Check condition of hoses, flashback arrestors and torch and availability of ignition clicker. Check regulator/O rings for leaks.	Damaged hose(s) causing leaks which could lead to fire, burns or explosion. Flashback or back-feed caused through faulty or absent flashback arrestor(s). Use of means other than ignition striker to ignite torches causing burns or explosion.	Hose assemblies to be checked for cracks, splits or other signs of wear and tear. Ensure hoses have flashback arrestors fitted. If hoses are more than 3 metres in length, they must have flashback arrestors at each end. Flashback arrestors should be inspected and tested every 12 months and changed every 5 years at the most. Check that this has been done by consulting the Supervisor. Ensure that an ignition striker is available and is the only way to ignite the torches. Do not use another oxy torch to light it. If any of these risks are present due to lack of proper gear or faulty gear, consult your Supervisor. Supervisor must document fault in Works Diary. Repair is to be arranged and additional or alternate safe-to-use equipment is to be provided.

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3	Check work area for hazards.	Check work area is free from combustible materials and area of work is slip and trip free.	Smouldering or fire, resulting in burns or inhalation of harmful fumes. Acetylene or LPG causing an explosion, resulting in death or serious injury. Risk of worker slipping or tripping, causing injury.	Ensure area is free from all combustible materials. Ensure you do not have any flammable liquids on your PPE. Do not smoke in the area. Ensure floor areas are clear of trip or slip hazards by keeping all work items off the floor and leads are placed in a safe area where people cannot trip over them. Wear steel cap non-slip boots.
4	Secure or position the steel to be worked on.	Ensure steel to be worked on is secured and cannot move. Flipping the steel using a flipping tool to access other parts of the steel to be worked on.	Steel moves unexpectedly or is moved by hand causing crushing or manual handling injury. Manual handling injury from trying to move too much weight. Steel and flipping tool rotating uncontrollably or unnoticed by either the user or someone else nearby. This may result in death or serious injury through being crushed by the steel or hit in	Ensure steel is in a secure position after being moved, craned or wheeled to cutting area. Do not manually handle unless you have assessed that it is safe to do so. Only use the flipping tool if you have assessed the weight of the steel is not too heavy to move based on the strength of the tool and on your own physical capabilities. This tool must not be used if the steel is too heavy, and an overhead crane is to be used instead. Prior to rotating, ensure there is enough room on the trestles for the steel to move in the direction that you are rotating. Secure the position of the steel in the gripping part of the tool and rotate with both hands on it. Do not use the flipping tool without others in the vicinity being aware.

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			the eye, face or other body parts by the tool.	Do not keep the tool gripped onto the steel when you are not using it or are looking away. If you lose control, do not try to maintain your grip on the flipping tool. Immediately take evasive action by getting all body parts out of the way.
5	Use Oxy/LPG to cut steel.	Ensure work is secured against movement, and that the work area is free from other hazards and proceed to cut.	Flame moves over clothing or body parts. Slag drops onto feet or hoses. Sparks fly into face or eyes. Steel that is cut off falling onto one's feet. Fumes affecting operator or others in close vicinity. Flashback occurring, potentially leading to an explosion. Loud bang potentially resulting in hearing damage.	Ensure leather apron or equivalent body protection is worn, leather gloves are worn, eye protection with shaded filter (within the range of a No. 3 to 7) is worn and others are clear of work area. Steel cap boots to be worn. Ensure that you the offcut is secure. Long offcuts are to be held up by a crane. Ensure work area is well ventilated. Check condition of hoses, torch tips, and gas pressure prior to use. Do not re-light if flashback occurs. Hearing protection is highly recommended to protect against noise in the event of a flashback. If any of these risks are present due to a lack of proper gear or faulty gear, consult your Supervisor. Supervisor must document fault in Works Diary. Repair to be arranged and additional or alternate safe-to-use equipment is to be provided.

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6	Steel cut is complete.	Steel cooling/slag cooling	Hot surfaces result in burns.	Wait for steel to cool before physically handling it. Wear leather gloves when handling steel that is still cooling.
7	Storage of gas cylinders.	Move unused cylinders to safe storage.	Damage to the bottle or valves Close proximity to sources of ignition creating risk of explosion or fire Acetone build-up	Ensure gas cylinders are stored upright in well-ventilated storage cages. Ensure they are away from all sources of ignition. Empty cylinders should be stored separate to full bottles. Signage with wording “<i>Danger - No Smoking</i>” to be placed with stored bottles. Never roll cylinders. They should be moved horizontally and should be allowed to stand for 12 hours before next use to allow acetone to be evenly distributed within the cylinder and not have it build up to the flame. Refer to Safety Data Sheets for further storage and handling requirements that must be followed.

- Personal Protective Equipment that must be used:

Leather apron or equivalent protection, eye protection within the range of a No. 3 to 7, leather gloves, steel capped footwear, flame-proof clothing eg cotton or wool, hearing protection

This SOP has been developed in consultation with me and I agree to follow it and carry out tasks in a safe manner, reporting any problems to my immediate Supervisor.

Bundy Card #	Name	Signature	Date



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