



Compressed Air Safety



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Title:	COMPRESSED AIR SAFETY
Number:	GM-11-031-22
Version Number:	12.0
Date Revised:	02 November 2015
Owner:	Andrew Bass
Authoriser:	Melanie Jensen
Reasons for Creating or Amending Document:	New Owner New Authoriser Full Review of Document
Actual Change Details:	Full review of document, minor formatting and wording changes, Australian Standard title corrections, WesCEF Disclaimer added

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INTRODUCTION

This guide manual provides information on the safe use and protection of personnel when using compressed air.

1. GENERAL

Compressed air is an energy source, used throughout industry for various purposes. As an energy source it must be treated with the same respect as electricity, if it is not used correctly it can be fatal.

Compressed air may be stored in cylinders and air receivers or generated by compressors. Air under pressure is delivered via a regulator, air-line and air hoses to air tools and equipment. The tool or equipment is driven by the energy contained in the compressed air.

2. TOOLS, FITTINGS AND EQUIPMENT



No plant air is to be used on any process associated with abrasive blasting or industrial coating (breathing, blasting or painting)

Observe the following precautions when using compressed air:

- Select equipment suitable for the pressure being used.
- Select air hoses according to *AS/NZS 2554:-1998 - Hose and Hose Assemblies for Air*.
- Ensure that air hoses and connectors are in good condition.
- Secure all fittings in the approved manner e.g. use safety clips in all snap coupling joints, attach chains to screw coupling.
- Before use check all couplings for damage that might prevent a connection or proper seal.



Do not use damaged or worn fittings and equipment.

- Ensure the trigger or operating valve works properly. If it is faulty, the equipment shall be removed from service. Repairs shall be undertaken by a competent person before the equipment is placed back in service.
- An Out of Service Tag is to be used to tag out any faulty equipment. Report the fault to your group leader or the person responsible for the equipment to have it repaired.

- **Before disconnecting tools, depressurise the airline by isolating at the main air supply valve and operating the connected tool until all the air is expelled.**
- Always isolate the air supply at the main air valve when not in use, and depressurise airlines.
- Always drain water traps or reservoirs before using airlines or compressors.
- Never kink a hose to stop the air supply, close the valve.
- Air break (excess flow cut off) valves should be considered for installation in main compressed air-line supply to air hoses. If an air break valve has not been installed, secure the hose to prevent whipping in the event of failure.
- Airline outlets shall be positioned to prevent any person being exposed to a direct blast of air.
- Isolate and bleed all compressed air equipment before dismantling,
- Always point air guns away from the user and NEVER directly at anyone else.
- Never use compressed air to pressurise a vessel (unless the vessel is specifically designed for that purpose). For example, do not use compressed air to empty oil from gear boxes. They are not designed to withstand high internal pressures.



Accidents have happened in which personnel were killed because gear boxes exploded under pressure

- Do not dry bearings using compressed air.



There have been incidents where bearings have exploded because of the excessive speed of rotation caused by drying with compressed air.

- Compressed airlines shall be labelled in accordance with the *AS 1345 - 1995 Identification of the Contents of Pipes, Conduits and Ducts*.

3. PERSONAL PROTECTIVE EQUIPMENT (PPE) AND CLOTHING

Wearing appropriate personal protective equipment and clothing can reduce compressed air injuries.

3.1 EYES

- Wear goggles when using compressed air.
- Wear a face shield where there is a risk of flying particles.



Safety glasses worn beneath a face shield do not provide adequate eye protection goggles must be worn.

3.2 HANDS

Wear gloves that the compressed air cannot penetrate, such as rubber or leather.

3.3 BODY

Use leather or PVC or similar aprons where there is a risk of contact with compressed air.



Cotton clothing is not a barrier to compressed air.

4. SAFE USE OF COMPRESSED AIR



Do not play practical jokes or be involved in horseplay with compressed air – it can be fatal

Observe the following precautions when using compressed air:

- **Always wear appropriate personal protective equipment and clothing** (refer to section 3 - PPE and Clothing).



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- **Never use compressed air to dust off clothing.** There is a risk of injury to eyes, perforation of the eardrums, and penetration of the skin, leading to bubbles in the blood stream and possible embolism, causing death.
- **Do not use compressed air to clean up your work area.** This can create airborne particles that will put you and others at risk of injury,

Note: Where it is considered that compressed air must be used to blow-down or clean hard to get at places etc., and it is impractical to use some other, safer, means such as vacuum cleaning, compressed air maybe used provided compressed outlet air pressure does not exceed 200 kPa and a task risk assessment is carried out with strict precautions are taken to protect the user and persons in the vicinity.

- **Do not try to stop a whipping hose.** The force of the hose can break bones. Isolate the air at the main valve and wait for hose to settle.
- **Do not create trip hazards with air hoses.** Suspend or guard hoses with boards.
- **Isolate and bleed all air-lines and hoses before disconnecting.** To disconnect air-lines under pressure is hazardous.
- **Use compressed air only for the work it is provided for.** It is an energy source and must be treated as such.