Stored Energy Air Hazards

Compressed air and other tools using pneumatic air are widely used at the University and, as it distributes energy due to the air being under pressure, it has the potential to cause a serious injury. This alert acts as a timely reminder to be aware of the hazards relating to stored (potential) energy which is the accumulation of energy that can release suddenly in an uncontrolled manner.

Working near compressed air or similar equipment should be treated with the same amount of care as other energy sources. When using this equipment, it is recommended to consider other hazards, such as line of fire, and implement controls using barriers or guarding. Ask yourself what is the worst that can happen if a certain safeguard fails. Recognise the hazards of your work and act accordingly to put additional controls in place.

What happened?

An incident occurred at ECU, where an individual was filling pneumatic brakes on equipment using a portable air compressor. It was not filling correctly for an unknown reason and the metal attachment popped off the hose, which was under pressure, hit the person in the shoulder.

What went wrong?

Compressed air hoses, clamps and fittings can fail therefore it is important to prevent it from becoming a projectile and thrashing about wildly if it breaks or disconnects.

In this instance the grub screw loosened and released the coupling from the hose causing it to flick and hit the person.

How do we minimise the risk?

The dangers of compressed air or similar equipment can be mitigated by following proper safety measures and precautions such as:

1) Ensure hoses are cared for and maintained, as per manufacturer's specifications (i.e.: with no kinks and where possible stored on a hose reel) and that they are checked prior to using the machinery. Do not leave the hose lying on the ground where it can become damaged or cause a trip hazard.

2) Ensure all connections and couplings, as per manufacturer's specifications are secure and that they are checked prior to use. Manufacturers and suppliers may also have further improvements to reduce the risk which may be worth a conversation to determine if there are more effective controls available.

3) It is essential that all operators using compressed air or are trained and understand all risks in associated instructions thoroughly, so they aware of the hazards and know what controls are suitable to reduce the risk to a level that is reasonably practicable. These risks should be identified, assessed and controlled in a hazard risk assessment documented in Riskware for records and should also be included in the School or Centre's Hazard Risk Register.

4) Regular inspections to be conducted on air compressors and powered tools and ensure that any safety devises on the tool is working correctly. Before conducting any repairs to the system of air compressors, ensure this is undertaken by a competent person and all hazardous energy sources are turn off and all pressure has been released in the line.

It is also important to note that compressed air should not be used for cleaning purposes as using air to clean dirt and dust particles may create a respiratory hazard and damage the equipment.

If you have compressed air or similar equipment in your School or Centre, it is recommended that you follow the above recommendations.

For more information please contact the Safety and Employment Relations team on 2302 or osh@ecu.edu.au