

# **Tutors Assignment Correction Guide**

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**Module 8**

**Safety**

**Unit 8.3**

**Pressurised units**



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## **Module 8    Safety**

### **Unit 8.3                      Pressurised units**

This guide is to assist you in the correction of the assignments for this unit.

If more than one tutor is involved with Student Support in your institution, it will also assist in ensuring that there is a consistency in the weighting of assignments, and questions within assignments.

The Core Curriculum is designed to be offered utilising competency standards, so the elements that need to be included in answers are specified in the guide. It will therefore assist those who wish to use a competency assessment of Completed or Incomplete.

It is particularly important in the Caribbean to ensure that the assignments are assessed as indicated in the guide, as regional recognition is an ultimate (and desired) outcome.



# Assessment Instrument

## Module 8    Safety

### Unit 8.3            Pressurised units

#### Assignment No. 8.3-1

The teacher trainee has successfully:

- ☐ identified, in accordance with appropriate regulations and provided information, safety precautions to be observed when operating or servicing pressurised units
- ☐ explained how the identified safety precautions ensure the safety of the operator
- ☐ outlined the appropriate emergency procedures, given a case study of an accident involving a pressurised unit





# Assignment No. 8.3-1

To be completed and returned to your tutor for assessment.

This is an open book assignment and you may refer to whatever references you have at your disposal.

Name: \_\_\_\_\_ Due Date: \_\_\_\_\_

## Question 1

Fill in the blanks to these questions

- 1.1 Air supply lines are usually coloured \_\_\_\_\_ identify them.
- 1.2 Air pressure above what the system is designed for may cause \_\_\_\_\_ or \_\_\_\_\_ to explode.
- 1.3 Hoses and connections should not be \_\_\_\_\_ or \_\_\_\_\_.
- 1.4 Connections must not be \_\_\_\_\_ or show signs of \_\_\_\_\_.
- 1.5 The most important protective equipment to wear when working with units under pressure is \_\_\_\_\_.
- 1.6 Some compressors can be \_\_\_\_\_ so hearing protection may need to be worn when checking the compressor.
- 1.7 All valves and gauges fitted to the system must \_\_\_\_\_ before the system is used.
- 1.8 Stop valves should be fitted in positions where they can \_\_\_\_\_ the system from the \_\_\_\_\_.
- 1.9 If there are different pressure systems in the same workshop the connections should be \_\_\_\_\_ so that only the right equipment can be connected.
- 1.10 Using compressed air to clean work surfaces can cause \_\_\_\_\_ and should not be allowed.

- 1.11 Using compressed air to clean yourself can cause \_\_\_\_\_.
- 1.12 People should not play with compressed air lines because \_\_\_\_\_.
- 1.13 Compressed air equipment should be clearly marked with \_\_\_\_\_ pressure.
- 1.14 Wherever possible compressed air systems should be serviced only when the system is not running and \_\_\_\_\_.
- 1.15 Lever type shut off valves should be able to be \_\_\_\_\_ in the off position.
- 1.16 Compressed air equipment should only be serviced by a person who has \_\_\_\_\_.

***2 marks for each blank - 20 marks***

### **Question 2**

For questions 1.3 to 1.16 inclusive, explain how the safety precautions keep the operator safe.

(You do not have to answer for questions 1.1 or 1.2)

***2 marks for each – 28 marks***

### **Question 3**

A damaged flexible air line hose has ruptured at the connection point with a blow gun. The operator was not wearing eye protection at the time and has got some particles in his eyes. The hose is whipping and snaking on the floor.

Outline the appropriate emergency procedures.

***2 marks for each correct answer – 16***

***Total: 64 marks***





# Assignment No. 8.3-1

## Guidelines for the correction and weighting of questions for Assignment 8.3 – 1

### Question 1

- 1.1 Air supply lines are usually coloured **blue** to identify them.
- 1.2 Air pressure above what the system is designed for may cause **compressors** or **hoses** to explode.
- 1.3 Hoses and connections should not be **split** or **corroded**.
- 1.4 Connections must not be **damaged** or show signs of **wear**.
- 1.5 The most important protective equipment to wear when working with units under pressure is **safety glasses** or **goggles**.
- 1.6 Some compressors can be **noisy** so hearing protection may need to be worn when checking the compressor.
- 1.7 All valves and gauges fitted to the system must **work properly** before the system is used.
- 1.8 Stop valves should be fitted in positions where they can **cut off** the system from the **compressor**.
- 1.9 If there are different pressure systems in the same workshop the connections should be **different** so that only the right equipment can be connected.
- 1.10 Using compressed air to clean work surfaces can cause **dust and liquids to be raised into the air** and should not be allowed.
- 1.11 Using compressed air to clean yourself can cause **air to be injected into the bloodstream**.
- 1.12 People should not play with compressed air lines because it can **cause serious injury or death**.
- 1.13 Compressed air equipment should be clearly marked with the **maximum safe working** pressure.
- 1.14 Wherever possible compressed air systems should be serviced only when the system is not running and is **not under pressure**.
- 1.15 Lever type shut off valves should be able to be **locked** in the off position.

- 1.16 Compressed air equipment should only be serviced by a person who has ***been trained to do so.***

***2 marks for each correct blank - 20 marks***

## **Question 2**

For questions 1.3 to 1.16 inclusive, explain how the safety precautions keep the operator safe.

Tutor – you should expect the student to have identified each of the key points as follows.

- 1.3 Prevents hoses from rupturing under pressure and releasing pieces of material at high speed, which could cause injuries, especially to the eyes or face.
- 1.4 Worn or damaged connections which do not lock or release properly can lead to sudden releases of hoses which can snake and cause injury.
- 1.5 Eye protection will prevent small pieces of material that might be blown around by compressed air damaging the eyes.
- 1.6 Hearing protectors will reduce the chance of compressor noise contributing to hearing damage.
- 1.7 Correctly operating valves and gauges help make sure that air is delivered at the correct pressure to parts of the system. This reduces the chances of parts of the system becoming over pressurised, rupturing and causing injury.
- 1.8 Being able to isolate the compressor from the system allows faults to be made safe quickly. It also allows the system to be worked on safely.
- 1.9 Using different connectors for different pressure systems prevents accidental over pressurisation.
- 1.10 Cleaning down work surfaces with compressed air can raise toxic dusts into the air that can be breathed in and make people ill. It can also raise dust and other small objects into the air and these can damage the eyes.
- 1.11 Not using compressed air to clean yourself down reduces the chance that a serious injury, even death, could occur.
- 1.12 Not playing with compressed air, especially pointing the air hose at somebody, reduces the chance that a serious injury, even death, could occur.
- 1.13 Marking the pressure rating on systems and equipment reduces the chances of over pressurising the system or equipment. It also

helps prevent airlines being blown off the system and snaking and injuring people.

- 1.14 Working on the system when it is not under pressure prevents injuries either from the air pressure itself or from the accidental starting of connected tools or equipment.
- 1.15 Locking shut off valves in the off position prevents tools and equipment being accidentally switched back on, especially if somebody is maintaining or inspecting the system.
- 1.16 Using trained people to service the system, tools and equipment reduces the chance of injury either from a poorly maintained system rupturing or becoming over pressurised. It also reduces the chance of injury to the person who is servicing the system.

**Tutor: Give part of the marks if required.**

***2 marks for each correct answer – 28 marks***

### **Question 3**

**Tutor: Look for the following points in the answer.**

- There are two “emergencies” to deal with:
  - The eye injury.
  - The snaking hose.
- The eye injury should be treated FIRST.
- The eye should be washed with lots of water.
- Arrangements should be made to take the injured person to hospital.
- While the injured person is being treated another person should be instructed to turn off the compressed air system with the shut off valve to stop the hose snaking.
- Once the person has shut off the stop valve they should then be instructed to turn off the compressor and lock off the shut-off switch.
- Both the compressor switch and system shut-off valve should be labelled “Do not use. Awaiting servicing”.

***2 marks for each fully correct answer -16***

***Total: 64 marks***