

# SEMPMO216 – SQA Unit Code HK67 04

## Making products using computer controlled equipment



### Overview

This standard covers the skills and knowledge you will need to produce products using computer controlled equipment. This could include using programmable logic controllers, robots, computer numerically controlled machines or process controllers. This will involve monitoring the manufacturing operation, and responding to error messages.

This will involve operating the equipment according to defined operating procedures. You will be expected to monitor and control the operation, minimising any waste, making adjustments within the limits of your permitted authority and ensuring that the completed output is to the required specification. Meeting production targets will be an important issue and your production records must show consistent and satisfactory performance.

Your responsibilities will require you to comply with organisational policy and procedures for the computer controlled manufacturing activities undertaken, and to report any problems with the manufacturing activities you cannot personally resolve, or are outside your permitted authority to the appropriate people.

You will be expected to work to instructions, with minimum supervision, taking personal responsibility for your actions and for the quality and accuracy of the work that you produce. You will also be expected to complete any necessary documentation accurately and legibly.

Your underpinning knowledge will be sufficient to provide a sound basis for your work, and will enable you to adopt an informed approach to applying the required work instructions and procedures. You will have an understanding of the computer controlled equipment used, and its application, and will know about the equipment, materials and consumables in adequate depth to provide a sound background for carrying out the activities, making allowable adjustments when required, to ensure that the required specification is achieved.

You will understand the safety precautions required when working with computer controlled equipment. You will be required to demonstrate safe working practices throughout, and will understand the responsibility you owe to yourself and others in the workplace.

This standard on making products using computer controlled equipment involves:

1. working with minimum supervision

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2. using the correct tools, equipment and materials
3. performing the manufacturing operation
4. monitoring and controlling the manufacturing operation
5. making adjustments within your permitted authority
6. reporting unsolvable problems or problems that you are not responsible for, to the appropriate person
7. completing any necessary documentation
8. working in ways which maintain the safety of yourself and others

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#### Performance criteria

*You must be able to:*

- P1 work safely at all times, complying with health and safety, environmental and other relevant regulations, directives and guidelines
- P2 obtain and follow the correct job instructions and any relevant manufacturing procedure and quality specifications
- P3 ensure the program is at the correct start point before running the equipment
- P4 follow the correct procedures for starting, running and stopping the computer program
- P5 respond in an appropriate manner to any error/display screen messages received
- P6 monitor and control the computer controlled manufacturing operation and identify any faults, variations or problems that occur
- P7 make any necessary adjustments within your permitted authority
- P8 report any problems that you cannot solve or are outside your permitted authority to the appropriate person
- P9 minimise any waste during the computer controlled manufacturing operation
- P10 produce manufactured products which comply with the specification and quality requirements
- P11 work to achieve your production targets
- P12 deal appropriately with finished components and complete documentation in accordance with organisational procedures (or requirements)

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### Knowledge and understanding

*You need to know and understand:*

- K1 the relevant health and safety requirements of the work area in which you are carrying out the computer controlled manufacturing operations
- K2 the specific safe working practices, equipment procedures and environmental regulations that need to be observed
- K3 the hazards associated with carrying out the computer controlled operations and how can they be minimised
- K4 what actions need to be taken in case of emergencies when using computer controlled equipment
- K5 what personal protective equipment (PPE) may be used during the operation and where can it be obtained
- K6 how to obtain the necessary job instructions, operating procedures and manufacturing specifications that are used, and how to interpret them
- K7 how to start up and check the computer equipment is at the correct start point in the operating program
- K8 what to do if error messages are displayed
- K9 how to restart the equipment after it has been closed down in an emergency situation
- K10 what methods can be used to minimise waste during computer controlled manufacturing operations
- K11 what faults, problems or variations can occur in the computer controlled manufacturing operation
- K12 how to identify faults, problems or variations in the computer controlled manufacturing operation
- K13 what allowable adjustments can you make to achieve specification in the computer controlled manufacturing operation
- K14 why it is important to report faults, variations or problems that are outside your permitted authority and or you cannot solve immediately
- K15 how to check the quality of the manufactured products, against the required quality standards
- K16 what documentation may need to be completed, and why it is important to complete it accurately and legibly
- K17 what your responsibilities are with regard to the reporting lines and procedures in your working area
- K18 who the appropriate people are and what are their responsibilities within your working area

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### Additional Information

#### Scope/range related to performance criteria

You must be able to:

1. Follow the relevant manufacturing procedures and safety requirements to include **all** of the following:
  - 1.1. health and safety regulations
  - 1.2. computer controlled equipment / tool operating instructions
  - 1.3. safe working practices
  - 1.4. job instructions
  - 1.5. company standards and procedures
  
2. Carry out checks of the manufactured products to include the following:
  - 2.1. completeness of manufacturing operation and **three** other checks from the following:
    - 2.2. dimensional accuracy
    - 2.3. quantity
    - 2.4. quality of finish
    - 2.5. volume
    - 2.6. freedom from damage
    - 2.7. freedom from contamination
  
3. Make permitted adjustments to related to **two** of the following:
  - 3.1. quality
  - 3.2. operational safety
  - 3.3. accuracy
  - 3.4. manufacturing changes
  - 3.5. material utilisation
  - 3.6. productivity
  
4. Report problems that you cannot solve and or are outside your permitted authority to the appropriate person to include **one** of the following:
  - 4.1. supervisor
  - 4.2. team leader
  - 4.3. quality control
  
5. Work to achieve production targets for **both** of the following:
  - 5.1. output
  - 5.2. quality

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