

Overview

This unit covers the skills and knowledge required to control manufacturing operations according to defined operating procedures.

It involves gathering data that accurately reflects the condition of the manufacturing process, interpreting the data to identify any trends, variance or discrepancy, and restoring operating parameters to the process specifications promptly by making any adjustments allowable within the limits of your responsibility. You will also be expected to seek authorisation from the appropriate person for any necessary adjustments that are outside the limits of your responsibility and ensure that production continues to comply with the specification.

Your responsibilities will require you to comply with organisational policy and procedures for the activities undertaken, and to report any problems with the activities that you cannot personally resolve, or are outside your permitted authority, to the relevant people. You will be expected to work with a minimum of supervision, taking personal responsibility for your actions and 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 to adopt an informed approach to applying the required procedures for controlling the manufacturing output. You will have a sound understanding of the manufacturing process 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, identifying and correcting faults and ensuring the production output is to the required specification. Meeting production targets will be an important issue and your production records must show consistent and satisfactory performance.

You will understand the safety precautions required when working with the manufacturing tools and 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 unit on controlling manufacturing operations involves:

1. gathering data which accurately reflects the condition of the manufacturing process
2. interpreting the data to identify any trends, variance or discrepancy
3. restoring operating parameters by making allowable adjustments
4. making sure the production continues to meet specification

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5. correctly recording information about data collection, data interpretation and any adjustments made to the manufacturing operation
6. reporting problems to the relevant person
7. working in ways which maintain the safety of yourself and others

Performance criteria

You must be able to:

- P1 work safely at all times, complying with health and safety, environmental and other relevant regulations and guidelines
- P2 obtain and follow the correct job instructions and any relevant production and quality specifications
- P3 collect up to date, comprehensive and accurate operational data in line with production requirements
- P4 record the data in the required format accurately and legibly
- P5 use the data collected to make decisions about the condition of the manufacturing process
- P6 make any allowable adjustments to the operating parameters to ensure the production output meets the specification requirements
- P7 seek authorisation from the appropriate person for any adjustments to operating parameters which are outside the limits of your responsibility
- P8 check that production continues to comply with specification following any adjustments made

Knowledge and understanding

You need to know and understand:

- K1 what are the relevant health and safety requirements of the work area in which you are carrying out the manufacturing activities
- K2 what are the specific safe working practices, data collection and adjustment procedures and environmental regulations that need to be observed
- K3 what are the hazards associated with carrying out the data collection and equipment adjustment procedures and how can they be minimised
- K4 what actions need to be taken in case of emergencies
- K5 what personal protective equipment needs to be used during the activities and where it can be obtained
- K6 how to obtain the necessary job instructions, equipment operating and adjustment procedures and quality control specifications that are used, and how to interpret and understand them
- K7 the type of production data which will provide information about the various aspects of the manufacturing operation
- K8 how to collect the required data and how it is to be used and recorded
- K9 how to check and interpret data relating to manufacturing operations
- K10 why it is important to maintain the security of the information collected
- K11 potential problems with the data collected such as trends, variance or discrepancy, how these occur and how to correct them
- K12 how to deal with problems which affect aspects of data collection, data interpretation and adjustments to manufacturing operations
- K13 the adjustments that can be made to manufacturing operations, equipment and tools, materials and manufacturing programme and the procedures involved
- K14 the various process operating parameters on the equipment used and how adjustments to these will affect the manufacturing output
- K15 why its important to follow the specified adjustment sequence and procedure at all times
- K16 what documentation may need to be completed, and why it is important to complete it accurately and legibly
- K17 how to report any problems you are not able to deal with yourself and why it is important to report faults, variations or problems immediately
- K18 what your responsibilities are with regard to the reporting lines and procedures in your working area
- K19 who are the appropriate people and what are their responsibilities within your working area

Additional Information

Scope/range related to performance criteria

You must be able to:

1. Follow the relevant procedures and safety requirements to include **all** of the following:
 - 1.1. health and safety and environmental regulations
 - 1.2. equipment / tool operating instructions
 - 1.3. safe working practices
 - 1.4. company standards and procedures
 - 1.5. job instructions

2. Collect data in relation to **one** of the following production methods:
 - 2.1. hand manufacturing operations
 - 2.2. fully automated machine operations
 - 2.3. manually operated machine operations
 - 2.4. combined manufacturing operations

3. Collect data which reflects the condition of the manufacturing process to include **three** of the following:
 - 3.1. quality of finished product
 - 3.2. consumable material use
 - 3.3. equipment or tool condition
 - 3.4. dimensional accuracy
 - 3.5. output/production targets
 - 3.6. raw material use
 - 3.7. machinery condition

4. Deal with **two** of the following problems identified by the data collected:
 - 4.1. trends
 - 4.2. variation from specification
 - 4.3. discrepancies

5. Make adjustments in relation to **three** of the following:
 - 5.1. process effectiveness relating to operational sequence
 - 5.2. process characteristics relating to quality
 - 5.3. material utilisation relating to production
 - 5.4. process characteristics relating to accuracy
 - 5.5. materials utilisation relating to consumables
 - 5.6. process effectiveness relating to production time
 - 5.7. manufacturing programme changes
 - 5.8. operational safety

6. Deal with problems within the manufacturing process by **both** of the following methods:

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- 6.1. by taking action yourself
- 6.2. by reporting the problem to someone else

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