COGPEM11 - SQA Unit Code FP6T 04
Assemble components of mechanical process plant and equipment

Overview

This unit is about your competence in assembling mechanical components. You will be required to follow instructions, ensure you have the correct tools and equipment to complete the assembly and deal with problems as they arise. You will be following your organisation's safe working practices and working within the work permit procedures.

This unit deals with the following:

1. Assemble components of mechanical process plant and equipment

During this work you must take account of the relevant installation procedures and safe working practices AS THEY APPLY TO YOU.

Previous version:

Adapted from Unit M2.4 of Process Engineering Maintenance NOS – version February 2004. This unit is a contextualised version of a unit produced by the OSC Eng Engineering Competence Standards which was originally designated ECS 3.12.

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Performance criteria

You must be able to:

- P1 work safely at all times, complying with health and safety and other relevant regulations and guidelines
- P2 follow the relevant instructions, assembly drawings and any other specifications
- P3 ensure that the specified components are available and that they are in a usable condition
- P4 use the appropriate methods and techniques to assemble the components in their correct positions
- P5 secure the components using the specified connectors and securing devices
- P6 check the completed assembly to ensure that all operations have been completed and the finished assembly meets the required specification
- P7 deal promptly and effectively with problems within your control and report those that cannot be solved

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Knowledge and understanding

You need to know and understand:

K1 you must have a working knowledge and understanding of what your responsibilities are in respect of Health, Safety and Environment. This should include the limits of your personal responsibility, your legal responsibility for your own health and safety and the health and safety of others

K2 you must have a working knowledge of the relevant regulations and the safe working practices and procedures required within your work area

K3 you must have an appreciation of assembly drawings and related specifications

K4 you must have a working knowledge of which assembly methods and techniques can be used for fitting components together. Also, why the order of fitting components affects efficiency and cost effectiveness and how standard practices can be modified to influence these

K5 you must have an appreciation of the quality control procedures and recognition of assembly defects. This should include when confirmation tests should be undertaken, what the types of confirmation test are that should be undertaken for different assets and how should they be applied in line with company procedures

K6 you must have an appreciation of handling equipment and procedures. This could be expected to include manual handling methods and procedures

K7 you must have working knowledge of the equipment preparation methods and procedures in relation to checking the working condition and operation of standard equipment, including safety checks and inspections

K8 you must have an appreciation of what your responsibilities are for ensuring the care and security of tools and equipment that you use

K9 you must have an appreciation of your responsibilities with regard to the reporting lines and procedures in your working environment

Additional Information

Scope/range

1. The level and extent of responsibility in the context of this standard, extends to interpreting a specification, selecting and applying appropriate methods and tests to achieve the best possible result in the conditions applying. You will be accountable for the integrity of the work site and ensuring the work is recorded in a formal manner albeit you will be expected to refer to others. Authorisation for proceeding with the work will be given by authorised signatories within the Permit to Work system

2. The type and complexity of the assembly to be produced are of one technology and/or are of a robust nature. There may be a number/variety of connections to be made and these may be easy to access or to achieve

3. The assembly methods and techniques to be used may require the application of several different, sequential assembly techniques relevant to the technologies of the asset. Typical techniques could include:

    3.1 Using threaded fasteners
    3.2 Clamping
    3.3 Jacking
    3.4 Flange and clamp assemblies
    3.5 Connecting male/female connectors
    3.6 Soldering
    3.7 Applying pressure
    3.8 Sealing
    3.9 Levering

    The assembly is made by following sequential procedures which do not account for every stage involved and/or need to be modified to achieve the results required

4. The typical assets/components could include:
    4.1 Pumps
    4.2 Process pipework
    4.3 Hand tools
    4.4 Valves
    4.5 Prime Movers

5. The quality standards and accuracy to be achieved are as set down in internal QA and QC specifications

Scope/range related to knowledge and understanding

The knowledge and understanding levels expressed indicate the minimum level of knowledge and understanding sufficient to perform your role in a manner that would normally be associated with the minimum acceptable performance of a competent person undertaking your role.

The expression “an appreciation” is intended to indicate a level of knowledge and understanding equating to:

1. An awareness of the existence, the scope and the background to the content covered by the knowledge and understanding statement.
2. How and where to find further detail and information that you will need
3. Having obtained the information, you will be expected to check your interpretation and then to be able to apply it to your situation

The expression “working knowledge and understanding” indicates you are able to:

4. Identify and apply relevant information, procedures and practices to your usual role in your expected working environments needing only occasional recourse to reference materials
5. Describe, in your own words, the principles underlying your working methods. This does not mean the ability to quote “Chapter and verse”. Rather you must know what supporting information is available, how and where to find it and from whom to seek further guidance and information confirm any additional detail required.
6. Interpret and apply the information obtained to your role, your working practice and in your expected working environment.

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