Part of the Enginuity Group

Qualification Specification

EAL Level 3 Diploma in Advanced Manufacturing and Engineering - Toolmaker and Tool & Die Maintenance Technician (Development Competence)

Qualification code: 603/1221/X

Contents

1.0 About EAL

Since 1964 EAL (Excellence, Achievement and Learning) has been awarding vocational qualifications and apprenticeship components for engineering, building services and related sectors. Developed to the highest technical standard, our qualifications are regularly updated to reflect regulatory, employer and technical changes. We support the providers of our qualifications with an unparalleled level of service to ensure that learners are well prepared for the roles they plan to take on.

EAL recognise the value of skills in the work environment as one of the five key drivers of productivity, essential for economic growth and bringing a number of wider social benefits. Through its programme of continuous improvement EAL strives to meet the demand from employers for high performing, high quality products.

In 2012, EAL changed its name from EMTA Awards Limited to Excellence, Achievement and Learning, to better reflect its wide reaching position across industry – providing qualifications, not only in Engineering and Manufacturing, but also specialising in Building Services Engineering, Gas Utilisation, Environmental Technologies, Business Services and closely related sectors.

1.1 Equal opportunities and diversity

EAL expects its centres to enable learners to have equal access to training and assessment for qualifications in line with equalities legislation. Further details can be located in the EAL Equal Opportunities and Diversity Policy:
http://www.eal.org.uk/centre-support/centre-support/policies-and-important-documents

Note: Where learners taking the qualification in a region where legislation, organisations, regulations detailed does not apply, relevant legislation should be substituted. For example: The Health and Safety at Work etc. Act 1974 shall be substituted in Northern Ireland by The Health and Safety at Work (Northern Ireland) Order 1978.

1.2 Customer Experience and feedback

Customer Experience is a fundamental part of EAL's commitment to you. EAL aims to ensure that all customers receive a high-quality efficient service. We are always interested in feedback and if you have any comments or feedback on our qualifications, products or services, please contact the Customer Experience team:

EAL Customer Experience
Tel: +44 (0)1923 652 400
Email: Customer.Experience@eal.org.uk>

2.0 About the qualifications

The EAL Level 3 Diploma in Advanced Manufacturing Engineering - Toolmaker and Tool & Die Maintenance Technician (Development Competence) is gained when all the necessary units for that pathway have been achieved. The centre will then be able to apply for the learner's certificate of achievement. The learner will also receive a certificate of unit credit, listing all the units they have achieved.
If learners do not complete the full qualification, they can still claim a certificate of unit credit for the units achieved. This will mean that they will still have proof of their ability and could complete one of the qualifications at a later date.

Units can also be taken individually (stand-alone units). This manual must be used in conjunction with the delivery and assessment of any individual units to ensure that assessment requirements and methodologies are consistently applied.

There are various other qualifications, details on these can be obtained from the eal website or alternatively contact:

EAL Customer Experience
Tel: +44 (0)1923 652 400
Email: Customer.Experience@eal.org.uk>

2.1 Learner registration and certification

Learners must be registered with EAL on a code which relates to the qualification - this must be completed prior to assessment. Both learner registration and certification can be completed online at the EAL www.eal.org.uk

Qualification Title:	**Code:**
EAL Level 3 Diploma in Advanced Manufacturing Engineering - Toolmaker and Tool & Die Maintenance Technician (Development Competence)	603/1221/X

2.2 Qualification support materials

The following assessment support materials are available:

- **Unit documentation**
  These contain the details of the Employer Units of Competence (EUC) recognised units. These documents allow both the learner and the assessor to record the progress through the qualification selected. The unit documentation contains the performance, knowledge and understanding to be assessed and evidenced by the learner to demonstrate their competence.

- **Training sign off**
  Sufficient training must be carried out prior to the commencement of the formal competency assessment process; evidence must be available to show that the relevant training has been carried out prior to the assessment of the performance and skills criteria. The evidence that training has been completed to a sufficient level must be signed and dated by both the trainer and learner. Failure to provide evidence that sufficient training has taken place will result in the delay or failure in the certification of this qualification or individual units.

2.3 Achievement of qualification

The EAL Level 3 Diploma in Advanced Manufacturing Engineering - Toolmaker and Tool & Die Maintenance Technician (Development Competence) has been designed to allow a learner to specialise in either of the **three** pathways:

- Pathway 1: Toolmaker
- Pathway 2: Mould, tool and die equipment maintenance
- Pathway 3: Jig and fixture manufacture

Each learner will be required to attain three Mandatory Units and the required number of optional units contained within the selected pathway, in order to achieve this qualification. The overall grading type for this qualification is Pass/Fail. Units will be assessed and endorsed against the learners chosen discipline.

Learners will be required to create a Portfolio of Evidence to prove their competence in the workplace. Learners should therefore select the Optional Unit that reflects the job they carry out in the workplace to be able to get the required workplace evidence.

Learners will be assessed in relation to their chosen discipline and endorsed accordingly. The endorsement will be printed on the certificate to show future employers which discipline was covered during their assessment.

3.0 Centre and qualification approval

Centres wishing to deliver the EAL Level 3 Diploma in Advanced Manufacturing Engineering - Toolmaker and Tool & Die Maintenance Technician (Development Competence) will need to comply with the Qualification Manual and EAL's centre recognition criteria. Centres must also put in place the appropriate physical and human resources and administration systems to effectively run the qualification.

For existing EAL centres to put the qualification on your centre remit:

To add the EAL Level 3 Diploma in Advanced Manufacturing Engineering – Toolmaker and Tool & Die Maintenance Technician (Development Competence) qualification to your centre qualification remit, create and complete a qualification approval application form in Smarter Touch and submit to EAL.

For non EAL centres to gain centre approval to run the qualification:

Please contact the EAL Customer Experience Team who will be delighted to hear from you:

EAL Customer Experience
Tel: +44 (0)1923 652 400
Email: Customer.Experience@eal.org.uk>

4.0 Qualification specific information

4.1 Rule of combination (qualification structure)

To achieve this qualification learners are required to obtain the 3 mandatory units plus the number of optional units identified in the selected pathway. Learners will be assessed against their chosen sector:
Pathway 1: Toolmaker
Pathway 2: Mould, tool and die equipment maintenance
Pathway 3: Jig and fixture manufacture

Guided Learning Hours (GLH) and Total Qualification Time (TQT):

This qualification has **1384** Guided Learning Hours (GLH) and It has a Total Qualification Time (TQT) of **1464** hours which is the notional time required by the learner to complete the qualification.

EAL Level 3 Diploma in Advanced Manufacturing Engineering - Toolmaker and Tool & Die Maintenance Technician (Development Competence)

Mandatory Units: All **three** units must be completed:

EAL code	Unit title	Level	GLH	Ofqual code
AUEC3-001	Comply with statutory regulations and organisational safety requirements	3	13	Y/615/3996
AUEC3-002	Using and interpreting engineering data and documentation	3	13	D/615/3997
AUEC3-003	Working efficiently and effectively in advanced manufacturing and engineering	3	42	K/615/3999

Optional Units:
Pathway 1: Toolmaker
At least **one** of following must be completed:

EAL code	Unit title	Level	GLH	Ofqual code
AUEC3-222	Assembling press tools	3	679	K/615/5610
AUEC3-223	Assembling Injection mould tools	3	679	M/615/5611
AUEC3-224	Assembling blow mould tools	3	679	A/615/5613
AUEC3-225	Assembling vacuum forming tools	3	679	F/615/5614
AUEC3-226	Assembling dies	3	679	J/615/5615
AUEC3-346	Producing toolroom components using CNC turning machines	3	645	M/618/3716
AUEC3-347	Producing toolroom components using CNC milling machines	3	645	F/618/3719
AUEC3-348	Producing toolroom components using CNC grinding machines	3	645	T/618/3720
AUEC3-349	Producing toolroom components using CNC laser profiling machines	3	645	A/618/3721
AUEC3-350	Producing toolroom components using CNC electro-discharge machines	3	645	F/618/3722

AUEC3-351	Producing toolroom components using CNC machining centres	3	645	J/618/3723
At least **two** optional units must be completed from the following:				
AUEC3-227	Producing/finishing mould, press tool or die components using hand fitting techniques	3	679	L/615/5616
AUEC3-228	Repairing or modifying mould, press tool or die components	3	679	R/615/5617
AUEC3-229	Producing mould, press tool or die components by manual machining	3	679	Y/615/5621
AUEC3-230	Checking that toolroom assemblies comply with specification	3	280	D/615/5622
AUEC3-231	Handing over and confirming the completion of mould, press tool or die equipment	3	357	K/615/5624
AUEC3-232	Preparing and setting power presses	3	889	T/615/5626
AUEC3-233	Trying out and proving dies	3	679	T/615/5741
AUEC3-234	Trying out and proving injection moulds	3	679	J/615/5629
AUEC3-235	Setting a range of machines to produce toolroom components	3	1617	J/615/5632
AUEC3-236	Machining toolroom components using a range of machines	3	1365	H/615/5637

Optional Units:
Pathway 2: : Mould, tool and die equipment maintenance
At least **three** of following must be completed:

EAL code	Unit title	Level	GLH	Ofqual code
AUEC3-237	Carrying out fault diagnosis on mould, press tool or die equipment	3	469	D/615/5748
AUEC3-238	Maintaining mould, press tool or die equipment	3	679	Y/615/5750
AUEC3-239	Handing over and confirming the completion of mould, press tool or die equipment maintenance activities	3	357	D/615/5751
At least **two** optional units must be completed from the following:				
AUEC3-228	Repairing or Modifying Mould, Press Tool or Die Components	3	679	R/615/5617
AUEC3-229	Producing Mould, Press Tool or Die Components by Manual Machining	3	679	Y/615/5621
AUEC3-232	Preparing and Setting Power Presses	3	889	T/615/5626
AUEC3-240	Carrying Out Condition Monitoring of Mould, Press Tool or Die Equipment	3	364	H/615/5752
AUEC3-241	Carrying Out Planned Maintenance on Mould, Press Tool or Die Equipment	3	357	K/615/5753
AUEC3-242	Carrying Out Planned Maintenance on Power Presses	3	679	M/615/5754

Optional Units:
Pathway 3: Jig and fixture manufacture
At least **three** of following must be completed:

EAL code	Unit title	Level	GLH	Ofqual code
AUEC3-230	Checking that Toolroom Assemblies Comply with Specification	3	280	D/615/5622
AUEC3-243	Producing Jig and Fixture Components using Hand Fitting Techniques	3	679	T/615/5755
AUEC3-244	Machining Components for Jigs and Fixtures	3	679	A/615/5756
AUEC3-245	Fabricating structural components for jigs and fixtures	3	518	F/615/5757
AUEC3-246	Assembling jigs and fixtures using mechanical methods	3	679	J/615/5758
AUEC3-247	Assembling jigs and fixture structures using a manual welding process	3	518	F/615/5760
AUEC3-248	Carrying out repairs or modifications to jigs or fixtures	3	679	J/615/5761

4.2 Unit endorsement

Learners will be assessed in relation to their chosen discipline and endorsed accordingly. The endorsement will be printed on the certificate to show future employers which discipline was covered during their assessment.

All units must be assessed against **all** the mandatory units and **one** of the following endorsements:

- Pathway 1: Toolmaker
- Pathway 2: Mould, tool and die equipment maintenance
- Pathway 3: Jig and fixture manufacture

4.3 Barred units

There are no barred units.

5.0 Assessment strategy

5.1 Learners

The Level 3 units have been designed to cover those learners who are either:

- Individuals who need to acquire toolmaker and tool & die maintenance technician competencies for the engineering sectors
- Individuals employed in the toolmaker and tool & die maintenance engineering sectors but require additional competencies as part of an existing job role or to enable career progression.

There are no formal entry requirements for this qualification.
Learners must have been initially assessed to ensure they have both the potential and opportunity to achieve the assessment criteria set out in the qualification units and gain evidence from the workplace.

If the qualification is used to support implementation and delivery of an apprenticeship standard, the formal entry requirements will be listed within the standard assessment plan.

Learners are required to obtain evidence against each assessment criteria when competence has been proven.

Performance, Skills and **Knowledge** evidence must be sufficiently covered and recorded in the Evidence Reference boxes contained within the units, to ensure all criteria has been met.

5.2 Assessor requirements to demonstrate effective assessment practice

Assessment must be carried out by competent assessors that as a minimum must hold a Level 3 Award in Assessing Competence in the Work Environment. Current and operational assessors that hold units D32 and/or D33 or A1 and/or A2 as appropriate to the assessment being carried out, will not be required to achieve the Level 3 Award as they are still appropriate for the assessment requirements set out in this unit assessment strategy. However, they will be expected to regularly review their skills, knowledge and understanding and where applicable undertake continuing professional development to ensure that they are carrying out workplace assessment to the most up to date Employer Units of Competence (EUC).

Assessor technical requirements
Assessors must be able to demonstrate that they have verifiable, relevant and sufficient technical competence to evaluate and judge performance and knowledge evidence requirements as set out in the relevant unit learning outcomes and associated performance criteria.

This will be demonstrated either by holding a relevant technical qualification or by proven industrial experience of the technical areas to be assessed. The assessor's competence must, at the very least, be at the same level as that required of the learner(s) in the units being assessed.

Assessors must also be:

a) Fully conversant with the Awarding Organisation's assessment recording documentation used for the units against which the assessments and quality assurance are to be carried out, other relevant documentation and system and procedures to support the QA process.
b) Demonstrate their ability and commitment to maintain their occupational competence
c) Be able to relate the national occupational standards against which they will be assessing learners, to activities in the workplace

d) Provide evidence that they:
    - understand the structure of national occupational standards and qualifications
    - can interpret the standards in accordance with awarding body requirements
    - recognise acceptable sources of evidence for the qualification; and can implement the recording procedures required by the awarding body.
    - can implement the awarding body quality assurance and administration procedures.
e) Be in regular contact with the learners and the IQA; and
f) hold the appropriate assessor award (as defined by the regulatory authorities) or have a clear plan for achieving the award(s) within 18 months of commencing assessments.

Note: Evidence of individuals meeting all of the above criteria should be confirmed by the Awarding Body, which may be through EQA. Evidence of meeting criteria c and d above may be provided as a result of successfully completing a relevant training course, on which attendance is not mandatory but is strongly recommended

5.3 Quality assurance requirements (internal and external)

Internal quality assurance (IQA) must be carried out by competent IQA's that as a minimum must hold a Level 4 Award in the Internal Quality Assurance of Assessment Processes and Practices. Current and operational IQA's that hold internal quality assurance units V1 or D34 will not be required to achieve the Level 4 Award as they are still appropriate for the IQA requirements set out in this unit assessment strategy.

IQA's must be familiar with, and preferably hold, either the nationally recognised assessor units D32 and/or D33 or A1 and/or A2 or a Level 3 Award in Assessing Competence in the Work Environment.

In addition, IQAs must:

a) demonstrate their ability and commitment to maintain their occupational competence
b) be able to relate the national occupational standards against which they will be assessing learners, to activities in the workplace
c) provide evidence that they:
    - understand the structure of national occupational standards and qualifications
    - can interpret the standards in accordance with awarding body requirements
    - recognise acceptable sources of evidence for the qualification; and
    - can implement the recording procedures required by the awarding body
    - can implement the awarding body quality assurance and administration procedures.
d) be in regular contact with the assessor and
e) hold the appropriate IQA award (as defined by the regulatory authorities) or have a clear plan for achieving the award(s) within 18 months of commencing assessments.

It is recommended that IQA's hold the appropriate assessor qualification.

Evidence of individuals meeting all of the above criteria should be confirmed by the awarding body, which may be through EQA. Evidence of meeting criteria c and d above may be provided as a result of successfully completing a relevant training course, on which attendance is not mandatory but is strongly recommended.

Specific technical requirements for Internal and External Quality Assurers
Internal and External Quality Assurers must be able to demonstrate they have verifiable, sufficient and relevant industrial experience, and must have a working knowledge of the processes, techniques and procedures that are used in the relevant sector/occupation.

The tables on the following page show the recommended levels of technical competence for assessors, IQA's and EQA's.

Technical Requirements for Assessors and Quality Assurers

Position	Prime activity requirements	Support activity requirements	Technical requirements (see notes)
Assessor	Assessment Skills	IQA Systems	Technical competence in the areas covered by the units being assessed
IQA	Quality Assurance Skills	Assessment Knowledge	Technical understanding of the areas covered by the qualifications
EQA	Quality Assurance Skills	Assessment Understanding	Technical awareness of the areas covered by the qualifications

Notes:

1. Technical **competence** is defined here as a combination of practical skills, knowledge, and the ability to apply both of these, in familiar and new situations, within a real working environment.
2. Technical **understanding** is defined here as having a good understanding of the technical activities being assessed, together with knowledge of relevant Health & Safety implications and requirements of the assessments.
3. Technical **awareness** is defined here as a general overview of the subject area, sufficient to ensure that assessment and portfolio evidence are reliable, and that relevant Health and Safety requirements have been complied with.
4. The competence required by the assessor, IQA and EQA, in the occupational area being assessed, is likely to exist at three levels as indicated by the shaded zones in the following table.

Technical Competence / required by:	An ability to discuss the general principles of the competences being assessed	An ability to describe the practical aspects of the competence being assessed	An ability to demonstrate the practical competences being assessed
Assessor			
IQA			
EQA			

5.4 Assessment environment

Assessment of all learners in the toolmaker and tool & die maintenance engineering related occupations, against the Employer Units of Competence (EUC) developed by the employers in the engineering sector, will be undertaken in accordance with the following criteria: -

- Evidence of occupational competence should be generated and collected through real work activities in a real work environment.
- Real work activities are those undertaken to provide a secure product or service under typical business conditions.

- A realistic working environment is one that reflects typical employment conditions relevant to the work activities being assessed.
- The evidence collected under these conditions should also be as naturally occurring as possible.

Taking account of the above, it is not acceptable to undertake assessments in a classroom, or similar environment that has been set up specifically for training. Where opportunities for evidence collection are not available at the workplace, simulation is permitted, in accordance with the criteria listed in **section 5.6** below.

5.5 Access to assessment

The qualifications age limits are 16-18, 18+ and 19+ required by learners to undertake the units. Assessment is open to any learner who has the potential to achieve the criteria set out in the units.

When used as part of an apprenticeship standard learners must have achieved the requirements of the foundation phase of the apprenticeship in line with the apprenticeship standard they are working towards.

Aids or appliances which are designed to alleviate disability, may be used during assessment, providing they do not compromise the standard required.

5.6 Carrying out assessment

The EAL Level 3 Diploma in Advanced Manufacturing Engineering - Toolmaker and Tool & Die Maintenance Technician (Development Competence) units has been specifically developed to cover a wide range of activities. The evidence produced for the units will, therefore, depend on the learner's choice of "bulleted items" listed in the unit performance criteria.

Where the performance criteria gives a choice of bulleted items (for example 'any three from five'), assessors should note that learners do not need to provide evidence of the other items to complete the unit (in this example above, two items) particularly where these additional items may relate to other activities or methods that are not part of the learners normal workplace activity or area of expertise.

Performance evidence requirements

Performance evidence must be the main form of evidence gathered. In order to demonstrate consistent competent performance for a unit, a minimum of **three** different examples of performance of the unit activity will be required, unless otherwise stated. Items of performance evidence often contain features that apply to more than one unit and can be used as evidence in any unit where they are suitable.

Performance evidence must be:

- products of the learners' work, such as items that have been produced or worked on, plans, charts, reports, standard operating procedures, documents produced as part of a work activity, records or photographs of the completed activity

Together with:

- evidence of the way the learners carried out the activities, such as witness testimonies, assessor observations or authenticated learner reports of the activity undertaken.

Competent performance is more than just carrying out a series of individual set tasks. Many of the units contain statements that require the learner to provide evidence that proves they are capable of combining various features and techniques. Where this is the case, separate fragments of evidence would not provide this combination of features and techniques and, therefore, will not be acceptable as demonstrating competent performance.

Simulations

Direct evidence produced through normal performance in the workplace is the primary source for meeting the evidence requirements of this qualification.

If the learner cannot meet all assessment criteria under naturally occurring activities in their workplace and need to simulate a specific task please refer to the guidance notes “Centre Guidance for Developing Assessments for Simulation/Replication” in smarter touch.

Assessing knowledge and understanding

Knowledge and understanding are key components of competent performance, but it is unlikely that performance evidence alone will provide enough evidence in this area. Where the learner’s knowledge and understanding (and the handling of contingency situations) is not apparent from performance evidence, it must be assessed by other means and be supported by suitable evidence.

EAL expects oral questioning and practical demonstrations to be used, as these are considered the most appropriate for these units. Assessors should ask enough questions to make sure that the learner has an appropriate level of knowledge and understanding, as required by the unit. Awarding Organisations may choose other methods, which must be supported by a suitable rationale.

The achievement of the specific knowledge and understanding requirements of the units cannot simply be inferred by the results of tests or assignments from other units, qualifications or training programmes. Where evidence is submitted from these sources, the assessor must, as with any assessment, make sure the evidence is valid, reliable, authentic, directly attributable to the learner, and meets the full knowledge and understanding requirements of the unit.

Where oral questioning is used the assessor must retain a record of the questions asked, together with the learner’s answers.

Please note: Knowledge and understanding can be demonstrated in a number of different ways.

Witness testimony

Where observation is used to obtain performance evidence, this must be carried out against the unit performance criteria. Best practice would require that such observation is carried out by a qualified Assessor. If this is not practicable, then alternative sources of evidence may be used. For example, the observation may be carried out against the performance criteria by someone else that is in close contact with the learner. This could be a team leader, supervisor, mentor or line manager who may be regarded as a suitable witness to the learner's competency. However, the witness must be technically competent in the process or skills that they are providing testimony for, to at least the same level of expertise as that required of the learner. It will be the responsibility of the assessor to make sure that any witness testimonies accepted as evidence of the learner's competency are reliable, auditable and technically valid.

5.7 Quality control of assessment: General

There are two major points where EAL interacts with the Centre in relation to the external quality control of assessment for a qualification and these are:

- Approval - when a centre takes on new qualifications, the awarding organisation, normally through an External Quality Assurer (EQA) ensures that the centre is suitably equipped and prepared to deliver the new qualification
- Monitoring - throughout the on-going delivery of the qualification the awarding organisation, through EQA monitoring and other mechanisms must maintain and the quality and consistency of assessment of the qualification.

Approval

In granting approval, the awarding organisation, normally through its External Quality Assurer (EQA) must ensure that the prospective centre:

- meets any procedural requirements specified by the Awarding Organisation
- has sufficient and appropriate physical and staff resources
- meets relevant health and safety and/or equality and access requirements
- has a robust plan for the delivery, assessment and QA for the qualifications.

EAL will visit the centre to view the evidence provided. The Centre must have a clear rationale for the method(s) deployed.

Monitoring

The Awarding organisation, through EQA monitoring and other mechanisms must ensure:

- that a strategy is developed and deployed for the on-going awarding organisation monitoring of the centre. This strategy must be based on an active risk assessment of the centre. In particular the strategy must identify the learner, assessor and IQA sampling strategy to be deployed and the rationale behind this
- that the centre's internal quality assurance processes are effective in learner assessments
- that sanctions are applied to a centre where necessary and that corrective actions are taken
- by the centre and monitored by the awarding organisation/EQA
- that reviews of awarding organisation's external auditing arrangements are undertaken.

6.0 About the qualification units

The EAL Level 3 Diploma in Advanced Manufacturing Engineering - Toolmaker and Tool & Die Maintenance Technician (Development Competence) is made up of a number of nationally recognised units which EAL has converted into performance criteria and knowledge and understanding assessment material. These documents allow both the learner and the assessor to record the progress through the qualification.

The units contain the performance to be assessed, the knowledge to be assessed and the evidence required from the learner to demonstrate their competence.

All units in these qualifications contain the following information:

- qualification and unit title
- unit level
- unit summary
- performance to be assessed and evidenced
- knowledge to be assessed and evidenced
- application of endorsement

These units are aligned to the Employer Units of Competence (EUC) provided by the Advanced Manufacturing and Engineering Sector

6.1 Learner's portfolio building and referencing

For guidance to assessment and exemplars on completing documentation including completed assessment units and assessment planning documentation refer to EAL centre guidance.

For further information please contact EAL Customer Experience:

EAL Customer Experience
Tel: +44 (0)1923 652 400
Email: Customer.Experience@eal.org.uk>

Appendix 1

Unit overview

Level 3

Complying with Statutory Regulations and Organisational Safety Requirements

Unit Code: AUEC3-001

Overview

This unit of Competence has been developed by employers in the Advanced Manufacturing and Engineering Sector and is part of an overall development programme designed to meet the requirements of the Sector.

This unit identifies the training and development required in order that the learner can demonstrate that they are competent in being able to deal with statutory regulations and organisational safety requirements, in accordance with approved procedures. They will be required to comply with all relevant regulations that apply to their area of work as well as their general responsibilities as defined in the Health and Safety at Work Act.

They must also be able to identify the relevant qualified first aiders or appointed person and know the location of the first aid facilities. They will have an understanding of the procedures to be adopted in the case of accidents involving injury and in situations where there are dangerous occurrences or hazardous malfunctions of equipment, processes or machinery. They will also need to be fully conversant with the organisation's procedures for fire alerts and the evacuation of premises.

They will be required to identify the hazards and risks that are associated with their job. Typically, these will focus on their working environment, the tools and equipment that they use, materials and substances that they use, working practices that do not follow laid down procedures, and manual lifting and carrying techniques.

Their responsibilities will require them to comply with organisational policy and procedures for the statutory regulations and organisational safety activities undertaken, and to report any problems with the safety activities that they cannot personally resolve, or that are outside their permitted authority, to the relevant people. They will be expected to work with minimal supervision, taking personal responsibility for their own actions, and for the way in which they carry out the required manufacturing/engineering activities.

Their underpinning knowledge will provide a good understanding of their work and will provide an informed approach to applying statutory regulations and organisational safety requirements and procedures. They will understand the safety requirements and their application and will know about the safety requirements in adequate depth to provide a sound basis for carrying out the activities safely and correctly.

They will be able to apply the occupational behaviours required in the workplace to meet the job profile and overall company objectives, including being able to demonstrate; personal responsibility and resilience, working effectively in teams, effective communication and interpersonal skills, focus on quality and problem solving and continuous development.

Level 3

Using and Interpreting Engineering Data and Documentation

Unit Code: AUEC3-002

Overview

This unit of Competence has been developed by employers in the Advanced Manufacturing and Engineering Sector and is part of an overall development programme designed to meet the requirements of the Sector.

This unit identifies the training and development required in order that the learner can demonstrate that they are competent in being able to make effective use of text, numeric and graphical information by interpreting and using technical information extracted from engineering drawings, technical manuals, reference tables, specifications and charts, in accordance with approved procedures. They will be required to extract the necessary information from the various drawings and related documents in order to establish and carry out the maintenance requirements and to make valid decisions about the quality and accuracy of the equipment being maintained.

Their responsibilities will require them to comply with organisational policy and procedures for obtaining and using the drawings and related specifications. They will be expected to report any problems with the use and interpretation of the drawings and specifications that they cannot personally resolve, or that are outside their permitted authority, to the relevant people. They will be expected to work with minimal supervision, taking personal responsibility for their own actions, and for the quality and accuracy of the work that they carry out.

Their underpinning knowledge will provide a good understanding of the types of drawings and documents used within a maintenance environment and will provide an informed approach to applying instructions and procedures. They will be able to read and interpret the drawings and documents used and will know about the conventions, symbols and abbreviations, in adequate depth to provide a sound basis for carrying out the maintenance activities to the required specification.

They will be able to apply the occupational behaviours required in the workplace to meet the job profile and overall company objectives, including being able to demonstrate; personal responsibility and resilience, working effectively in teams, effective communication and interpersonal skills, focus on quality and problem solving and continuous development

Level 3

Working efficiently and effectively in advanced manufacturing and engineering

Unit Code: AUEC3-003

Overview

This unit of Competence has been developed by employers in the Advanced Manufacturing and Engineering Sector and is part of an overall development programme designed to meet the requirements of the Sector.

This unit identifies the training and development required in order that the learner can demonstrate that they are competent in being able to:

Work efficiently and effectively in the workplace, in accordance with approved procedures and practices. Prior to undertaking the manufacturing/engineering activity, they will be required to carry out all necessary preparations within the scope of their responsibility. This may include preparing the work area and ensuring that it is in a safe condition to carry out the intended activities, ensuring they have the appropriate job specifications and instructions and that any tools, equipment, materials and other resources required are available and in a safe and usable condition.

On completion of the manufacturing/engineering activity, they will be required to return their immediate work area to an acceptable condition before recommencing further work requirements. This may involve placing completed work in the correct location, returning and/or storing any tools and equipment in the correct area, identifying any waste and/or scrapped materials and arranging for their disposal, and reporting any defects or damage to tools and equipment used.

Their responsibilities will require them to comply with organisational policy and procedures for the manufacturing/engineering activities undertaken, and to report any problems with the activities, tools or equipment that they cannot personally resolve, or that are outside their permitted authority, to the relevant people. They will be expected to take personal responsibility for their own actions and for the quality and accuracy of the work that they carry out and to identify and make recommendations where improvements could be made in their working area.

Their underpinning knowledge will provide a good understanding of their work, and will provide an informed approach to working efficiently and effectively in a manufacturing/engineering environment. They will understand the need to work efficiently and effectively, and will know about the things they need to consider when preparing and tidying up the work area, how to contribute to improvements, deal with problems, maintain effective working relationships, and agree their development objectives and targets, in adequate depth to provide a sound basis for carrying out the activities safely and correctly.

They will understand the safety precautions required when carrying out manufacturing/engineering activities. They will be required to demonstrate safe working practices throughout, and will understand the responsibility they owe to themselves and others in the workplace.

They will be able to apply the occupational behaviours required in the workplace to meet the job profile and overall company objectives, including being able to demonstrate; personal responsibility and resilience, working effectively in teams, effective communication and interpersonal skills, focus on quality and problem solving and continuous development.

Level 3

Assembling press tools

Unit Code: AUEC3-222

Overview

This unit of Competence has been developed by employers in the Advanced Manufacturing and Engineering Sector and is part of an overall development programme designed to meet the requirements of the Sector.

This unit identifies the training and development required in order that the learner can demonstrate that they are competent in being able to:

Carry out assembly operations to produce press tools, in accordance with approved procedures. This will include assembling various single stage, multi-stage, compound, transfer, draw, extrusion and progression tooling used for blanking, forming, drawing, punching/piercing, flanging, lancing and assembly operations. They will be required to prepare the work area, and ensure that it is safe and free from hazards. They will also be required to check that the specified components are available and fit for purpose, to obtain all relevant and current documentation, tools and equipment required for the assembly operations, and to check that they are in a safe and usable condition. In carrying out the assembly operations, they will be required to follow company procedures and specified assembly techniques, in order to assemble the press tool.

The press tool assembly activities will also include making all necessary checks and adjustments, to ensure that components are correctly orientated, positioned and aligned, that moving parts have the correct working clearances, that all fasteners are tightened to the correct torque, and that the assembled parts are checked for completeness and function as per the specification.

Their responsibilities will require them to comply with organisational policy and procedures for the assembly activities undertaken, and to report any problems with the activities, materials or equipment that they cannot personally resolve, or are outside their permitted authority, to the relevant people. They will be expected to work with a minimum of supervision, taking personal responsibility for their own actions and for the quality and accuracy of the work that they carry out.

Their underpinning knowledge will demonstrate a good understanding of their work, and will provide an informed approach to applying the appropriate press tool assembly techniques and procedures. They will understand the press tool being assembled, and its application, and will know about the equipment, relevant components and joining techniques, in adequate depth to provide a sound basis for carrying out the activities to the required specification.

They will understand the safety precautions required when carrying out the assembly activities. They will be required to demonstrate safe working practices throughout, and will understand the responsibility they owe to themselves and others in the workplace.

They will be able to apply the appropriate behaviours required in the workplace to meet the job profile and overall company objectives, such as strong work ethic, positive attitude, team player, dependability, responsibility, honesty, integrity, motivation and commitment.

Level 3

Assembling injection mould tools

Unit Code: AUEC3-223

Overview

This unit of Competence has been developed by employers in the Advanced Manufacturing and Engineering Sector and is part of an overall development programme designed to meet the requirements of the Sector.

This unit identifies the training and development required in order that the learner can demonstrate that they are competent in being able to:

Carry out assembly operations to produce injection mould tools, in accordance with approved procedures. This will include assembling various types of injection mould tools, such as two-plate, three-plate, combination, split and unscrewing tools, which will produce components with undercut or without undercut (internal and external), cores, and threaded parts. They will be required to prepare the work area, and to ensure that it is safe and free from hazards. They will also be required to check that specified components are available and fit for purpose, to obtain all relevant and current documentation, tools and equipment required for the assembly operations, and to check that they are in a safe and usable condition. In carrying out the mould tool assembly operations, they will be required to follow company procedures and specified assembly techniques, in order to assemble the mould tool.

The injection mould assembly activities will also include making all necessary checks and adjustments, to ensure that components are correctly orientated, positioned and aligned, that moving parts have the correct working clearances, that all fasteners are tightened to the correct torque, and that the assembled parts are checked for completeness and function as per the specification.

Their responsibilities will require them to comply with organisational policy and procedures for the assembly activities undertaken, and to report any problems with the activities, materials or equipment that they cannot personally resolve, or are outside their permitted authority, to the relevant people. They will be expected to work with a minimum of supervision, taking personal responsibility for their own actions and for the quality and accuracy of the work that they carry out.

Their underpinning knowledge will demonstrate a good understanding of their work, and will provide an informed approach to applying the appropriate mould tool assembly techniques and procedures. They will understand the mould tool being assembled and its function, and the purpose of individual components and how they interact, in adequate depth to provide a sound basis for carrying out the assembly operations and for making any required adjustments so that the finished assembly meets the required specification.

They will understand the safety precautions required when carrying out the assembly activities. They will be required to demonstrate safe working practices throughout, and will understand the responsibility they owe to themselves and others in the workplace.

They will be able to apply the appropriate behaviours required in the workplace to meet the job profile and overall company objectives, such as strong work ethic, positive attitude, team player, dependability, responsibility, honesty, integrity, motivation and commitment.

Level 3

Assembling blow mould tools

Unit Code: AUEC3-224

Overview

This unit of Competence has been developed by employers in the Advanced Manufacturing and Engineering Sector and is part of an overall development programme designed to meet the requirements of the Sector.

This unit identifies the training and development required in order that the learner can demonstrate that they are competent in being able to:

Carry out assembly operations to produce blow mould tools, in accordance with approved procedures. This will include assembling and finishing neck, body, punt and all ancillary parts of the mould tool. They will be required to prepare the work area, and to ensure that it is safe and free from hazards. They will also be required to check that specified components are available and fit for purpose, to obtain all relevant and current documentation, tools and equipment required for the assembly operations, and to check that they are in a safe and usable condition. In carrying out the assembly operations, they will be required to follow company procedures and specified assembly techniques, in order to assemble the mould tool.

The blow mould assembly activities will also include making all necessary checks and adjustments, to ensure that components are correctly orientated, positioned and aligned, that moving parts have the correct working clearances, that all fasteners are tightened to the correct torque, and that the assembled parts are checked for completeness and function as per the specification. They will also be required to carry out finishing work to ensure that the completed mould has an appropriate surface finish.

Their responsibilities will require them to comply with organisational policy and procedures for the assembly activities undertaken, and to report any problems with the activities, materials or equipment that they cannot personally resolve, or are outside their permitted authority, to the relevant people. They will be expected to work with a minimum of supervision, taking personal responsibility for their own actions and for the quality and accuracy of the work that they carry out.

Their underpinning knowledge will demonstrate a good understanding of their work, and will provide an informed approach to applying the appropriate blow mould tool assembly techniques and procedures. They will understand the blow mould tool being assembled and its function, and the purpose of individual components and how they interact, in adequate depth to provide a sound basis for carrying out the assembly activities, making any necessary adjustments and finishing the mould to the required specification.

They will understand the safety precautions required when carrying out the blow mould assembly activities. They will be required to demonstrate safe working practices throughout, and will understand the responsibility they owe to themselves and others in the workplace.

They will be able to apply the appropriate behaviours required in the workplace to meet the job profile and overall company objectives, such as strong work ethic, positive attitude, team player, dependability, responsibility, honesty, integrity, motivation and commitment.

Level 3

Assembling vacuum forming tools

Unit Code: AUEC3-225

Overview

This unit of Competence has been developed by employers in the Advanced Manufacturing and Engineering Sector and is part of an overall development programme designed to meet the requirements of the Sector.

This unit identifies the training and development required in order that the learner can demonstrate that they are competent in being able to:

Carry out assembly operations to produce vacuum forming tools, in accordance with approved procedures. This will include assembling and finishing various vacuum forming tools such as male moulds, deep draw, overhead, pressure and combination forming tools. They will be required to prepare the work area, and to ensure that it is safe and free from hazards. They will also be required to check that the specified components are available and fit for purpose, to obtain all relevant and current documentation, to obtain the tools and equipment required for the assembly operations, and to check that they are in a safe and usable condition. In carrying out the assembly operations, they will be required to follow company procedures and specified assembly techniques, in order to assemble the vacuum forming tool.

The assembly activities will also include making all necessary checks and adjustments, to ensure that components are correctly orientated, positioned and aligned, that moving parts have the correct working clearances, that all fasteners are tightened to the correct torque, and that the assembled parts are checked for completeness and function as per the specification. They may also be required to carry out finishing work to ensure that an appropriate surface finish is achieved.

Their responsibilities will require them to comply with organisational policy and procedures for the assembly activities undertaken, and to report any problems with the activities, materials or equipment that they cannot personally resolve, or are outside their permitted authority, to the relevant people. They will be expected to work with a minimum of supervision, taking personal responsibility for their own actions and for the quality and accuracy of the work that they carry out.

Their underpinning knowledge will demonstrate a good understanding of their work and will provide an informed approach to applying the appropriate techniques and procedures to the assembly of vacuum forming tools. They will understand the function of the vacuum forming tool being assembled, and its application, and will know about the equipment and all relevant components in adequate depth to provide a sound basis for carrying out the assembly, making any required adjustments and ensuring that the assembled tool meets the required specification.

They will understand the safety precautions required when carrying out the assembly activities. They will be required to demonstrate safe working practices throughout, and will understand the responsibility they owe to themselves and others in the workplace.

They will be able to apply the appropriate behaviours required in the workplace to meet the job profile and overall company objectives, such as strong work ethic, positive attitude, team player, dependability, responsibility, honesty, integrity, motivation and commitment.

Level 3

Assembling dies

Unit Code: AUEC3-226

Overview

This unit of Competence has been developed by employers in the Advanced Manufacturing and Engineering Sector and is part of an overall development programme designed to meet the requirements of the Sector.

This unit identifies the training and development required in order that the learner can demonstrate that they are competent in being able to:

Carry out assembly operations to produce dies, in accordance with approved procedures. This will include assembling various types of dies, such as draw, trim, re-strike, flange, combination, pierce dies, pressure, transfer, progression, pultrusion and extrusion dies. They will be required to prepare the work area, and to ensure that it is safe and free from hazards. They will also be required to check that the specified die components are available and fit for purpose, to obtain all relevant and current documentation, tools and equipment required for the assembly operations, and to check that they are in a safe and usable condition. In carrying out the die assembly operations, they will be required to follow company procedures and specified assembly techniques, in order to assemble the die tool.

The die assembly activities will also include making all necessary checks and adjustments, to ensure that components are correctly orientated, positioned and aligned, that moving parts have the correct working clearances, that all fasteners are tightened to the correct torque, and that the assembled parts are checked for completeness and function as per the specification.

Their responsibilities will require them to comply with organisational policy and procedures for the assembly activities undertaken, and to report any problems with the assembly activities, materials or equipment that they cannot personally resolve, or are outside their permitted authority, to the relevant people. They will be expected to work with a minimum of supervision, taking personal responsibility for their own actions and for the quality and accuracy of the work that they carry out.

Their underpinning knowledge will demonstrate a good understanding of their work, and will provide an informed approach to applying the appropriate die tool assembly techniques and procedures. They will understand the function of the die being assembled, and its application, and will know about the relevant components and fixing techniques, in adequate depth to provide a sound basis for carrying out the activities to the required specification.

They will understand the safety precautions required when carrying out the die assembly activities. They will be required to demonstrate safe working practices throughout, and will understand the responsibility they owe to themselves and others in the workplace.

They will be able to apply the appropriate behaviours required in the workplace to meet the job profile and overall company objectives, such as strong work ethic, positive attitude, team player, dependability, responsibility, honesty, integrity, motivation and commitment.

Level 3

Producing/finishing mould, press tool or die components using hand fitting techniques

Unit Code: AUEC3-227

Overview

This unit of Competence has been developed by employers in the Advanced Manufacturing and Engineering Sector and is part of an overall development programme designed to meet the requirements of the Sector.

This unit identifies the training and development required in order that the learner can demonstrate that they are competent in being able to:

Produce/finish mould, press tool or die components using hand fitting techniques, in accordance with approved procedures. They will be required to select the appropriate equipment to use, based on the operations to be carried out and the accuracy required. In producing the components, they will be expected to use appropriate tools and equipment to mark out the material for a range of features to be produced, and then to use hand tools, portable power tools, shaping and fitting techniques that are appropriate to the type of material and operations being performed. These will include activities such as hand sawing, band sawing, filing, and drilling, chiselling, threading, scraping, lapping and off-hand grinding. The components produced will have features that include flat, square, parallel and angular faces, radii and curved profiles, drilled holes, internal and external threads, and sliding or mating parts.

Materials to be used will include ferrous, non-ferrous, non-metallic and composites, which may be in sheet form, bar sections (such as square/rectangular, round, hexagonal) or part-machined components.

Their responsibilities will require them to comply with organisational policy and procedures for the cutting and shaping activities undertaken, and to report any problems with the equipment, materials or activities that they cannot personally resolve, or are outside their permitted authority, to the relevant people. They will be expected to work with a minimum of supervision, taking personal responsibility for their own actions and for the quality and accuracy of the work that they produce.

Their underpinning knowledge will demonstrate a good understanding of their work, and will provide an informed approach to applying hand fitting procedures to produce or finish mould, press tool or die components. They will understand the hand fitting techniques used, and their application, and will know about the tools, materials and equipment used, in adequate depth to provide a sound basis for carrying out the activities, correcting faults and producing the components to the required specification.

They will understand the safety precautions required when using hand and power tools. They will be required to demonstrate safe working practices throughout, and will understand the responsibility they owe to themselves and others in the workplace.

They will be able to apply the appropriate behaviours required in the workplace to meet the job profile and overall company objectives, such as strong work ethic, positive attitude, team player, dependability, responsibility, honesty, integrity, motivation and commitment.

Level 3

Repairing or modifying mould, press tool or die components

Unit Code: AUEC3-228

Overview

This unit of Competence has been developed by employers in the Advanced Manufacturing and Engineering Sector and is part of an overall development programme designed to meet the requirements of the Sector.

This unit identifies the training and development required in order that the learner can demonstrate that they are competent in being able to:

Restore mould, press tool or die components to usable condition by repair or modification, in accordance with approved procedures. They will be required to rework a range of tool and die assemblies, sub-assemblies, components and equipment to operational condition, by reforming, reworking the surface, replacing threads or replacing worn parts. This will require them to select the appropriate equipment to use, based on the nature of the repair, the operations that will need to be carried out, and the accuracy to be achieved.

In repairing or modifying the components, they will be expected to use a range of hand tools, machine tools, portable power tools, and shaping and fitting techniques, appropriate to the type of material and repair/modification being carried out. These will include activities such as sawing (hand, band), drilling, reaming, grinding (hand or machine), filing, scraping or lapping, threading (internal or external), turning, milling, and the use of thermal processes such as brazing and welding.

Their responsibilities will require them to comply with organisational policy and procedures for the tool and die reworking activities undertaken, and to report any problems with these activities, or with the tools, equipment or materials used, that they cannot personally resolve, or are outside their permitted authority, to the relevant people. They will be expected to work with a minimum of supervision, taking personal responsibility for their own actions and for the quality and accuracy of the work that they carry out.

Their underpinning knowledge will demonstrate a good understanding of their work, and will provide an informed approach to applying mould, press tool or die repair or modification procedures. They will understand the function and operating conditions of the components being repaired or modified, in adequate depth to provide a sound basis for carrying out the activities to the required specification, and to ensure that any repairs carried out are safe and practical in operation. They will also understand the organisational policy on repairing components, and its application.

They will understand the safety precautions required when carrying out the repair or modification activities, especially those for preventing movement of the press/machine and for isolating the equipment. They will also understand their responsibilities for safety and the importance of taking the necessary safeguards to protect themselves and others in the workplace.

They will be able to apply the appropriate behaviours required in the workplace to meet the job profile and overall company objectives, such as strong work ethic, positive attitude, team player, dependability, responsibility, honesty, integrity, motivation and commitment.

Level 3

Producing mould, press tool or die components by manual machining

Unit Code: AUEC3-229

Overview

This unit of Competence has been developed by employers in the Advanced Manufacturing and Engineering Sector and is part of an overall development programme designed to meet the requirements of the Sector.

This unit identifies the training and development required in order that the learner can demonstrate that they are competent in being able to:

Produce mould, press tool or die components by manual machining, in accordance with approved procedures. The machining activities carried out will include milling, turning, grinding, shaping/slotting, drilling, boring and spark or wire erosion, as applicable to the components being produced. They will be expected to produce new components or to modify existing ones, requiring them to use a wide range of different machines, and this will involve setting up the workholding arrangements, workpiece and machine tooling. The components produced will have a combination of features such as diameters, lengths, threads, flat faces, square faces, slots, profiles/special forms.

Their responsibilities will require them to comply with organisational policy and procedures for the machining activities undertaken, and to report any problems with the activities, materials or equipment used that they cannot personally resolve, or are outside their permitted authority, to the relevant people. They will be expected to work with a minimum of supervision, taking personal responsibility for their own actions and for the quality and accuracy of the work that they carry out.

Their underpinning knowledge will demonstrate a good understanding of their work, and will provide an informed approach to applying appropriate machining techniques and procedures for the production of mould, press tool or die components. They will understand the machining processes used, and their application, and will know about the tooling and ancillary equipment, materials and consumables, in adequate depth to provide a sound basis for carrying out the machining activities, correcting faults and ensuring that completed components are to the required specification.

They will understand the safety precautions required when working with the machines and their associated tools and equipment, especially those for isolating the machine during tool mounting and setting, and when handling cutting tools and equipment. They will be required to demonstrate safe working practices throughout, and will understand the responsibilities they owe to themselves and others in the workplace.

They will be able to apply the appropriate behaviours required in the workplace to meet the job profile and overall company objectives, such as strong work ethic, positive attitude, team player, dependability, responsibility, honesty, integrity, motivation and commitment.

Level 3

Checking that toolroom assemblies comply with specification

Unit Code: AUEC3-230

Overview

This unit of Competence has been developed by employers in the Advanced Manufacturing and Engineering Sector and is part of an overall development programme designed to meet the requirements of the Sector.

This unit identifies the training and development required in order that the learner can demonstrate that they are competent in being able to:

Carry out checks on moulds, dies, press tools or jig and fixture assemblies, in accordance with approved procedures. They will be required to prepare the work area, ensuring that it is safe and free from hazards, and to obtain all relevant and current documentation. They will also need to obtain the tools and equipment required for the checking activities, and to make sure that they are calibrated and are in a safe and usable condition.

They will be responsible for confirming that the assembly is complete, meets all dimensional and geometric tolerances, is fit for purpose, and meets the operational performance required by the specification. In order to do this, they will be expected to carry out all necessary inspection checks and manual operational checks and, where appropriate, oversee trials of the die, mould, press tool or jig and fixture. They will also be required to complete any relevant inspection documentation, accurately and legibly.

Their responsibilities will require them to comply with organisational policy and procedures for checking the toolroom assemblies, and to report any problems with the assemblies that they cannot personally resolve, or are outside their permitted authority, to the relevant people. They will be expected to ensure that all tools and equipment used in checking the assemblies are correctly accounted for on completion of the activities and returned to the correct location. They will be expected to work with a minimum of supervision, taking personal responsibility for their own actions and for the quality and accuracy of the work that they carry out.

Their underpinning knowledge will demonstrate a good understanding of their work and will provide an informed approach to applying quality control techniques and procedures including, where appropriate, British, European and International standards. They will understand the assemblies being checked, and their application, and will know about the tools and equipment used to check the assemblies, in adequate depth to provide a sound basis for carrying out the activities to the required specification. They will understand the types of defect that can be found on the assemblies, and how critical these defects are in determining the satisfactory performance of the completed product.

They will understand the safety precautions required when carrying out the checking activities. They will be required to demonstrate safe working practices throughout and will understand the responsibility they owe to themselves and others in the workplace.

They will be able to apply the appropriate behaviours required in the workplace to meet the job profile and overall company objectives, such as strong work ethic, positive attitude, team player, dependability, responsibility, honesty, integrity, motivation and commitment.

Level 3

Handing over and confirming the completion of mould, press tool or die equipment

Unit Code: AUEC3-231

Overview

This unit of Competence has been developed by employers in the Advanced Manufacturing and Engineering Sector and is part of an overall development programme designed to meet the requirements of the Sector.

This unit identifies the training and development required in order that the learner can demonstrate that they are competent in being able to:

Hand over and confirm the completion of mould, press tool or die equipment, ready for production/manufacturing operations, in accordance with approved procedures. This will involve checking that all try-out procedures have been carried out successfully, that all instruments and gauges have been set/calibrated, and that the equipment is producing the components to the required specification.

They will be required to ensure that the recipient/operator is made aware of all operating procedures, safety and environmental requirements before handing over the equipment. Checking of the initial finished components, making adjustments to settings to achieve specification, and solving equipment-related problems during preliminary production runs, will also form part of their role. Where appropriate, they will be expected to demonstrate the operation of the equipment to the recipient/operator, highlighting all the necessary key stages of performance, specific techniques or procedures to be used, and aspects of safety that require particular attention.

Their responsibilities will require them to comply with organisational policy and procedures for the handover activities undertaken, and to report any problems with the handing over that they cannot personally resolve, or are outside their permitted authority, to the relevant people. They will be expected to work with a minimum of supervision, taking personal responsibility for their own actions and for the quality and accuracy of the work that is produced.

Their underpinning knowledge will demonstrate a good understanding of their work, and will provide an informed approach to applying appropriate mould, press tool or die handover procedures. They will understand the equipment being handed over, and its application, and will know about the operating procedures, potential problems and operation training requirements, in adequate depth to provide a sound basis for enabling the operators to carry out the activities to the required specification.

They will understand the safety precautions required when working with the die and tool equipment, and with other associated equipment. They will be required to demonstrate safe working practices throughout, and will understand their responsibility for taking the necessary safeguards to protect themselves and others in the workplace.

They will be able to apply the appropriate behaviours required in the workplace to meet the job profile and overall company objectives, such as strong work ethic, positive attitude, team player, dependability, responsibility, honesty, integrity, motivation and commitment.

Level 3

Trying out and proving dies

Unit Code: AUEC3-233

Overview

This unit of Competence has been developed by employers in the Advanced Manufacturing and Engineering Sector and is part of an overall development programme designed to meet the requirements of the Sector.

This unit identifies the training and development required in order that the learner can demonstrate that they are competent in being able to:

Undertake try-out and proving activities on dies, in accordance with approved procedures. This will include dies such as draw, trim, re-strike, flange, combination, pierce dies, pressure, transfer, progression, puttrusion and extrusion dies. They will be required to check that the designated die has been positioned and set up correctly, and that any handover or permit-to-work procedures have been completed. They will also be required to ensure that the machines have safe access and are free from hazards, and that any necessary lifting and handling equipment, try-out/proving tools, consumables and site services are available, so that the try-out/proving can be carried out safely and efficiently.

They will be expected to apply a range of try-out and proving methods and techniques, such as spotting, grinding, finishing and polishing. They will also be required to make off-load checks, aligning and adjusting components before making a full die strike.

Their responsibilities will require them to comply with organisational policy and procedures for the try-out/proving activities undertaken, and to report any problems with these activities or with the tools and equipment used, that they cannot personally resolve or are outside their permitted authority, to the relevant people. They must ensure that all tools, equipment, and materials used in the try-out/proving activities are removed from the work area on completion of the activities, and that all necessary job/task documentation is completed accurately and legibly. They will be expected to work with minimum supervision, taking personal responsibility for their own actions and for the quality and accuracy of the work that they carry out.

Their underpinning knowledge will demonstrate a good understanding of their work, and will provide an informed approach to applying try-out and proving procedures for die tool equipment. They will understand the die try-out and proving methods and procedures, and their application. They will know how the machine and die functions, the purpose of the individual components and associated defects, in adequate depth to provide a sound basis for carrying out the try-out/proving activities, correcting faults and ensuring that the die functions and produces components to the required specification.

They will understand the safety precautions required when carrying out the try-out and proving activities, especially those associated with delivery and collection systems and for isolating the equipment. They will also understand their responsibilities for safety, and the importance of taking the necessary safeguards to protect themselves and others in the workplace.

They will be able to apply the appropriate behaviours required in the workplace to meet the job profile and overall company objectives, such as strong work ethic, positive attitude, team player, dependability, responsibility, honesty, integrity, motivation and commitment.

Level 3

Trying out and proving injection moulds

Unit Code: AUEC3-234

Overview

This unit of Competence has been developed by employers in the Advanced Manufacturing and Engineering Sector and is part of an overall development programme designed to meet the requirements of the Sector.

This unit identifies the training and development required in order that the learner can demonstrate that they are competent in being able to:

Carry out try-out and proving activities on injection moulding equipment, in accordance with approved procedures. This will include moulds such as two plate, three plate, combination, split and unscrewing tools, which will produce components with undercut or without undercut (internal and external), cores, and threaded parts. They will be required to check that the designated mould has been positioned and set up correctly in the injection moulding machine, and that any permit-to-work procedures have been completed. They will also be required to ensure that the machine has safe access and is free from hazards, and that any necessary lifting and handling equipment, try-out/proving tools, consumables and site services are available, so that the try-out/proving can be carried out safely and efficiently.

They will be required to try out and prove all the machine operating conditions, to check and test that all the delivery/collection and safety systems are in place on the machine and to confirm that they are operational. They will be expected to apply a range of try-out and proving methods and techniques, to eliminate defects such as flashing, short shot, and distortion.

Their responsibilities will require them to comply with organisational policy and procedures for the try-out/proving activities undertaken, and to report any problems with these activities, or with the tools and equipment used, that they cannot personally resolve or are outside their permitted authority, to the relevant people. They must ensure that all tools, equipment and materials used in the try-out/proving activities are removed from the work area on completion of the activities, and that all necessary job/task documentation is completed accurately and legibly. They will be expected to work with a minimum of supervision, taking personal responsibility for their own actions and for the quality and accuracy of the work that they carry out.

Their underpinning knowledge will provide a good understanding of their work and will provide an informed approach to applying try-out and proving procedures for injection moulding equipment. They will understand the mould try-out and proving methods and procedures, and their application. They will know how the machine and mould functions, the purpose of the individual components, and associated defects, in adequate depth to provide a sound basis for carrying out the try-out/proving activities, correcting faults and ensuring that the mould functions and produces components to the required specification.

They will understand the safety precautions required when carrying out the try-out and proving activities, especially those associated with delivery and collection systems and for isolating the equipment. They will also understand their responsibilities for safety, and the importance of taking the necessary safeguards to protect themselves and others in the workplace.

They will be able to apply the appropriate behaviours required in the workplace to meet the job profile and overall company objectives, such as strong work ethic, positive attitude, team player, dependability, responsibility, honesty, integrity, motivation and commitment.

Level 3

Setting a range of machines to produce toolroom components

Unit Code: AUEC3-235

Overview

This unit of Competence has been developed by employers in the Advanced Manufacturing and Engineering Sector and is part of an overall development programme designed to meet the requirements of the Sector.

This unit identifies the training and development required in order that the learner can demonstrate that they are competent in being able to:

Prepare and set up a variety of machines, in accordance with approved procedures, to produce toolroom components such as those used in moulds, press tools, dies, jigs and fixtures, test rigs and other experimental or developmental activities. They will be expected to determine the machining operations to be carried out, to select the appropriate machine, workholding devices, and tooling required, and to mount and position them on the machine in the correct location for the type of operations being carried out.

In selecting the machine cutting tools, they will need to check them for defects and to mount and secure them to the relevant tool holding devices. They will also be expected to set up and align the workpiece in the correct relationship to the cutting tool, and to set the machine operating parameters such as feeds, speeds and depth of cut, to produce the workpiece to the required specification.

Their responsibilities will require them to comply with organisational policy and procedures for the machine setting activities undertaken, and to report any problems with the machine, tooling, equipment or setting-up activities that they cannot personally resolve, or are outside their permitted authority, to the relevant people. They will be expected to work with a minimum of supervision, taking personal responsibility for their own actions and for the quality of the work that they carry out.

Their underpinning knowledge will demonstrate a good understanding of their work, and will provide an informed approach to the setting-up procedures used. They will understand the machines used, and their application, and will know about the workholding devices, tools, relevant materials, consumables and setting-up procedures, in adequate depth to provide a sound basis for carrying out the activities, correcting faults and ensuring that the work output is to the required specification.

They will understand the safety precautions required when working with the machines and with their associated tools and equipment. They will be required to demonstrate safe working practices throughout, and will understand the responsibility they owe to themselves and others in the workplace.

They will be able to apply the appropriate behaviours required in the workplace to meet the job profile and overall company objectives, such as strong work ethic, positive attitude, team player, dependability, responsibility, honesty, integrity, motivation and commitment.

This unit does not cover CNC machining activities, for which other units apply.

Level 3

Machining toolroom components using a range of machines

Unit Code: AUEC3-236

Overview

This unit of Competence has been developed by employers in the Advanced Manufacturing and Engineering Sector and is part of an overall development programme designed to meet the requirements of the Sector.

This unit identifies the training and development required in order that the learner can demonstrate that they are competent in being able to:

Produce toolroom components such as those used in moulds, press tools, dies, jigs and fixtures, test rigs and other experimental or developmental activities, using a variety of machines, in accordance with approved procedures. The machining activities carried out will include milling, turning, grinding, shaping/slotting, drilling, boring, spark or wire erosion, as applicable to the components being produced. They will check that the machine is ready for the operations to be performed and that all the required components/materials and consumables are available. They will be expected to produce a range of components that require the use of different machines and combine a number of different features. This will include features such as; parallel, stepped and tapered diameters, drilled, bored and reamed holes, internal and external threads, flat, parallel, square and angular faces, and special forms/profiles.

They will be required to operate the machines, in line with safe working practices and approved procedures, and to continuously monitor the machining operations, making any necessary adjustments in order to ensure that the work output is to the required quality and accuracy.

Their responsibilities will require them to comply with organisational policy and procedures for the machining activities undertaken, and to report any problems with the activities, materials or equipment used that they cannot personally resolve, or are outside their permitted authority, to the relevant people. They will be expected to work with a minimum of supervision, taking personal responsibility for their own actions and for the quality and accuracy of the work that they carry out.

Their underpinning knowledge will demonstrate a good understanding of their work, and will provide an informed approach to applying appropriate procedures and instructions to the machining of toolroom components. They will understand the machining processes used, and their application, and will know about the tooling and ancillary equipment, materials and consumables, in adequate depth to provide a sound basis for carrying out the machining activities, correcting faults and ensuring that the completed components are to the required specification.

They will understand the safety precautions required when working with the machines, and with their associated tools and equipment, especially those for isolating the machine during tool changing, and when handling cutting tools and equipment. They will be required to demonstrate safe working practices throughout, and will understand the responsibilities they owe to themselves and others in the workplace.

They will be able to apply the appropriate behaviours required in the workplace to meet the job profile and overall company objectives, such as strong work ethic, positive attitude, team player, dependability, responsibility, honesty, integrity, motivation and commitment.

Setting up of the machine, its tooling and associated workholding devices, is the subject of another unit.

Level 3

Carrying out fault diagnosis on mould, press tool or die equipment

Unit Code: AUEC3-237

Overview

This unit of Competence has been developed by employers in the Advanced Manufacturing and Engineering Sector and is part of an overall development programme designed to meet the requirements of the Sector.

This unit identifies the training and development required in order that the learner can demonstrate that they are competent in being able to:

Carry out efficient and effective fault diagnosis on mould, press tool or die equipment, in accordance with approved procedures. They will be required to diagnose faults on a range of mould, press tool or die equipment, such as single stage, multi-stage, compound, transfer, draw, extrusion and progression press tooling; trim, draw, re-strike, flange, combination, pierce, pressure, transfer, progression, pultrusion and extrusion dies; injection moulding dies; blow moulding dies; and vacuum tools. They will be expected to use a variety of fault diagnosis methods and techniques and utilise a number of diagnostic aids and equipment. From the evidence gained, they will be expected to identify the fault and its probable cause, and to suggest appropriate action to remedy the problem.

Their responsibilities will require them to comply with organisational policy and procedures for the fault diagnostic activities undertaken, and to report any problems with these activities or with the tools and equipment used that they cannot personally resolve, or are outside their permitted authority, to the relevant people. They will be expected to work with a minimum of supervision, taking personal responsibility for their own actions and for the quality and accuracy of the work that they carry out.

Their underpinning knowledge will provide a good understanding of their work and will provide an informed approach to applying fault diagnosis procedures on moulds, press tool or die equipment. They will understand the various fault diagnosis methods and techniques used, and their application. They will also know how to apply and interpret information obtained from diagnostic aids and equipment, in adequate depth to provide a sound basis for carrying out the activities and identifying faults or conditions that are outside the required specification.

They will understand the safety precautions required when carrying out fault finding activities, especially those for preventing movement of the press/machine and for isolating the equipment. They will also understand their responsibilities for safety and the importance of taking the necessary safeguards to protect themselves and others in the workplace.

They will be able to apply the appropriate behaviours required in the workplace to meet the job profile and overall company objectives, such as strong work ethic, positive attitude, team player, dependability, responsibility, honesty, integrity, motivation and commitment.

Level 3

Maintaining mould, press tool or die equipment

Unit Code: AUEC3-238

Overview

This unit of Competence has been developed by employers in the Advanced Manufacturing and Engineering Sector and is part of an overall development programme designed to meet the requirements of the Sector.

This unit identifies the training and development required in order that the learner can demonstrate that they are competent in being able to:

Carry out corrective maintenance activities on mould, press tool or die equipment, in accordance with approved procedures. They will be required to maintain a range of mould, press tool or die equipment such as single stage, multi-stage, compound, transfer, draw, extrusion and progression press tooling; trim, draw, re-strike, flange, combination, pierce, pressure, transfer, progression, pultrusion and extrusion dies; injection moulding dies; blow moulding dies; and vacuum tools. In addition, they will be expected to maintain mould, press tool and die material feed and ejector systems and other ancillary equipment. This will involve jacking/chocking or installing safety rams prior to tool or die removal, then dismantling, removing and replacing faulty equipment or components on a variety of different types of tool and die equipment.

They will be expected to apply a range of dismantling and assembling methods and techniques, such as proof marking to aid reassembly, dismantling components requiring pressure or expansion/contraction techniques, setting, aligning and adjusting components, torque loading components and making `off-load' checks before starting up the maintained equipment.

Their responsibilities will require them to comply with organisational policy and procedures for the maintenance activities undertaken and to report any problems with these activities, or with the tools and equipment used, that they cannot personally resolve or are outside their permitted authority, to the relevant people. They must ensure that all tools, equipment and materials used in the maintenance activities are removed from the work area on completion of the activities and that all necessary job/task documentation is completed accurately and legibly. They will be expected to work with a minimum of supervision, taking personal responsibility for their own actions and for the quality and accuracy of the work that they carry out.

Their underpinning knowledge will provide a good understanding of their work, and will provide an informed approach to applying maintenance procedures to mould, press tool or die equipment. They will understand the dismantling and reassembly methods and procedures, and their application. They will know how the equipment functions, the purpose of the individual components and associated defects, in adequate depth to provide a sound basis for carrying out the maintenance activities, correcting faults and ensuring that the repaired equipment functions to the required specification. In addition, they will have sufficient in-depth knowledge of the component parts to ensure that they are fit for purpose and meet the specifications, thus providing a sound basis for carrying out reassembly.

They will understand the safety precautions required when carrying out the maintenance activities, especially those for preventing movement of the press/machine, and for isolating the equipment. They will also understand their responsibilities for safety, and the importance of taking the necessary safeguards to protect themselves and others in the workplace.

They will be able to apply the appropriate behaviours required in the workplace to meet the job profile and overall company objectives, such as strong work ethic, positive attitude, team player, dependability, responsibility, honesty, integrity, motivation and commitment.

Level 3

Handing over and confirming the completion of mould, press tool or die equipment maintenance

Unit Code: AUEC3-239

Overview

This unit of Competence has been developed by employers in the Advanced Manufacturing and Engineering Sector and is part of an overall development programme designed to meet the requirements of the Sector.

This unit identifies the training and development required in order that the learner can demonstrate that they are competent in being able to:

Hand over mould, press tool or die equipment that has been repaired, or on which some form of maintenance has been carried out, and to confirm that the equipment is now ready to return to service. Following the maintenance activity, they will be required to either set up the equipment and hand it over to another person to complete the required start-up procedures, or complete the run-up operation themselves, ensuring that the equipment is ready for operation before handover. This will involve checking that all the required equipment and safety devices are operable and correctly set and/or calibrated, and that the equipment functions safely and correctly, to the required specification.

On handing over the equipment, they will be expected to highlight any unusual or changed operating features of the equipment, and to inform the appropriate person of any future maintenance requirements. They must also ensure that they receive confirmation that everyone involved in the handover accepts that the maintained equipment is in a satisfactory condition to return to service.

Their responsibilities will require them to comply with organisational policy and procedures for the handover activities undertaken and to report any problems with the handing over procedure that they cannot personally resolve, or are outside their permitted authority, to the relevant people. They will be expected to work with a minimum of supervision, taking personal responsibility for their own actions and for the quality and accuracy of the work that they carry out.

Their underpinning knowledge will demonstrate a good understanding of their work, and will provide an informed approach to applying mould, press tool and die equipment handover procedures. They will understand the equipment being handed over, and its application, and will know about the operating procedures and potential problems, in adequate depth to provide a sound basis for carrying out the activities safely and correctly.

They will understand the safety precautions required when carrying out the handover activities, especially those for isolating the equipment. They will be required to demonstrate safe working practices throughout, and will understand their responsibility for taking the necessary safeguards to protect themselves and others in the workplace.

They will be able to apply the appropriate behaviours required in the workplace to meet the job profile and overall company objectives, such as strong work ethic, positive attitude, team player, dependability, responsibility, honesty, integrity, motivation and commitment.

Level 3

Carrying out condition monitoring of mould, press tool or die equipment

Unit Code: AUEC3-240

Overview

This unit of Competence has been developed by employers in the Advanced Manufacturing and Engineering Sector and is part of an overall development programme designed to meet the requirements of the Sector.

This unit identifies the training and development required in order that the learner can demonstrate that they are competent in being able to:

Carry out condition monitoring of mould, press tool or die equipment, in accordance with approved procedures. They will be required to select the appropriate monitoring equipment to use, based on the type of mould, press tool or die equipment being monitored and the conditions that they need to check. They will be expected to check that the monitoring equipment is in a suitable condition to use (such as undamaged, correctly calibrated, appropriate range) and set up the equipment ready for use. They will then use this equipment to carry out diagnostic condition monitoring (fault diagnosis or prognosis) on a range of equipment such as single stage, multi-stage, compound, transfer, draw, extrusion or progression press tooling; trim, draw, re-strike, flange, combination, pierce, pressure, transfer, progression, pultrusion or extrusion dies; injection moulding dies; blow moulding dies; or vacuum tools, including material loaders and ejectors and other ancillary equipment.

Their responsibilities will require them to comply with organisational policy and procedures for the condition monitoring activities undertaken, and to report any problems with the diagnostic equipment or monitoring activities that they cannot personally resolve, or are outside their permitted authority, to the relevant people. They will be expected to work with a minimum of supervision, taking personal responsibility for their actions and for the quality and accuracy of the work that they carry out.

Their underpinning knowledge will demonstrate a good understanding of their work, and will provide an informed approach to applying condition monitoring techniques to mould, press tool or die equipment. They will understand the monitoring methods and procedures used, and their application, and will know about the various monitoring units, and peripheral components, in adequate depth to provide a sound basis for carrying out the monitoring activities safely and correctly.

They will understand the safety precautions required when carrying out the monitoring activities, especially those for isolating the equipment. They will also understand their responsibilities for safety, and the importance of taking the necessary safeguards to protect themselves and others in the workplace.

They will be able to apply the appropriate behaviours required in the workplace to meet the job profile and overall company objectives, such as strong work ethic, positive attitude, team player, dependability, responsibility, honesty, integrity, motivation and commitment.

Level 3

Carrying out planned maintenance on mould, press tool or die equipment

Unit Code: AUEC3-241

Overview

This unit of Competence has been developed by employers in the Advanced Manufacturing and Engineering Sector and is part of an overall development programme designed to meet the requirements of the Sector.

This unit identifies the training and development required in order that the learner can demonstrate that they are competent in being able to:

Carry out planned maintenance activities on mould, press tool or die equipment, in accordance with approved procedures. They will be required to carry out planned maintenance activities on a range of mould, press tool and die equipment, such as single stage, multi-stage, compound, transfer, draw, extrusion and progression press tooling; trim, draw, re-strike, flange, combination, pierce, pressure, transfer, progression, pultrusion and extrusion dies; injection moulding dies; blow moulding dies; and vacuum tools. In addition, they will be expected to maintain mould, press tool and die equipment material feed and ejector systems and other ancillary equipment in order to minimise down time and ensure that they perform at optimum level and function to specification.

Their responsibilities will require them to comply with organisational policy and procedures for the planned maintenance activities undertaken, and to report any problems with the maintenance process, tools or equipment used that they cannot personally resolve, or are outside their permitted authority, to the relevant people. They must ensure that all tools, equipment and materials used in the maintenance activities are removed from the work area on completion of the activities, and that all necessary job/task documentation is completed accurately and legibly. They will be expected to work with a minimum of supervision, taking personal responsibility for their own actions and for the quality and accuracy of the work that they carry out.

Their underpinning knowledge will demonstrate a good understanding of their work, and will provide an informed approach to applying planned maintenance procedures to mould, press tool or die equipment. They will understand the process of planned maintenance, and its application, and will know about the maintenance criteria, in adequate depth to provide a sound basis for carrying out the activities to the required specification. In addition, they will be expected to report where the outcome identifies the need for further investigation or maintenance work.

They will understand the safety precautions required when carrying out the maintenance activities, especially those for preventing movement of the press/machine, and for isolating the equipment. They will also understand their responsibilities for safety, and the importance of taking the necessary safeguards to protect themselves and others in the workplace.

They will be able to apply the appropriate behaviours required in the workplace to meet the job profile and overall company objectives, such as strong work ethic, positive attitude, team player, dependability, responsibility, honesty, integrity, motivation and commitment.

Level 3

Carrying out planned maintenance on power presses

Unit Code: AUEC3-242

Overview

This unit of Competence has been developed by employers in the Advanced Manufacturing and Engineering Sector and is part of an overall development programme designed to meet the requirements of the Sector.

This unit identifies the training and development required in order that the learner can demonstrate that they are competent in being able to:

Carry out planned maintenance activities on power presses, in accordance with approved procedures. They will be required to carry out planned maintenance activities on mechanical and hydraulic power presses, which incorporate single and double strike, re-strike and multi-sequence actions, in order to minimise down time, and to ensure that they perform at optimal level and function to specification.

Their responsibilities will require them to comply with organisational policy and procedures for the maintenance activities undertaken and to report any problems with the maintenance process, tools or equipment used that they cannot personally resolve, or are outside their permitted authority, to the relevant people. They must ensure that all tools, equipment and materials used in the maintenance activities are removed from the work area on completion of the activities, and that all necessary job/task documentation is completed accurately and legibly. They will be expected to work with a minimum of supervision, taking personal responsibility for their own actions and for the quality and accuracy of the work that they carry out.

Their underpinning knowledge will demonstrate a good understanding of their work, and will provide an informed approach to applying planned maintenance procedures to power presses. They will understand the process of developing planned maintenance, and its application, and will know about the maintenance criteria in adequate depth to provide a sound basis for carrying out the activities to the required specification. In addition, they will be expected to report where the outcome identifies the need for further investigation or maintenance work.

They will understand the safety precautions required when carrying out the maintenance activities on power presses, especially those for isolating the equipment and for restricting press movement. They will be required to demonstrate safe working practices throughout, and will understand their responsibility for taking the necessary safeguards to protect themselves and others in the workplace.

They will be able to apply the appropriate behaviours required in the workplace to meet the job profile and overall company objectives, such as strong work ethic, positive attitude, team player, dependability, responsibility, honesty, integrity, motivation and commitment.

Level 3

Producing jig and fixture components using hand fitting techniques

Unit Code: AUEC3-243

Overview

This unit of Competence has been developed by employers in the Advanced Manufacturing and Engineering Sector and is part of an overall development programme designed to meet the requirements of the Sector.

This unit identifies the training and development required in order that the learner can demonstrate that they are competent in being able to:

Produce detail components for jigs and fixtures using hand fitting techniques, in accordance with approved procedures. They will be required to select the appropriate equipment to use, based on the operations to be carried out and the accuracy required. In producing the components, they will be expected to use appropriate tools and equipment to mark out the material for a range of features to be produced, and then to use hand tools, portable power tools, and shaping and fitting techniques that are appropriate to the type of material and operations being performed. These will include activities such as hand sawing, band sawing, filing, and drilling, chiselling, threading, scraping, lapping and off-hand grinding. The components produced will have features that include flat, square, parallel and angular faces, radii and curved profiles, drilled holes, internal and external threads, and sliding or mating parts.

Materials to be used will include ferrous, non-ferrous, non-metallic and composites, which may be in sheet form, bar sections (such as square/rectangular, round, hexagonal) or part-machined components.

Their responsibilities will require them to comply with organisational policy and procedures for the cutting and shaping activities undertaken, and to report any problems with the equipment, materials or activities that they cannot personally resolve, or are outside their permitted authority, to the relevant people. They will be expected to work with a minimum of supervision, taking personal responsibility for their own actions and for the quality and accuracy of the work that they produce.

Their underpinning knowledge will demonstrate a good understanding of their work and will provide an informed approach to applying appropriate hand fitting procedures to jig and fixture components. They will understand the hand fitting techniques used, and their application and will know about the tools, materials and equipment used, in adequate depth to provide a sound basis for carrying out the activities, correcting faults and producing the components to the required specification.

They will understand the safety precautions required when using hand and power tools. They will be required to demonstrate safe working practices throughout, and will understand the responsibility they owe to themselves and others in the workplace.

They will be able to apply the appropriate behaviours required in the workplace to meet the job profile and overall company objectives, such as strong work ethic, positive attitude, team player, dependability, responsibility, honesty, integrity, motivation and commitment.

Level 3

Machining components for jigs and fixtures

Unit Code: AUEC3-244

Overview

This unit of Competence has been developed by employers in the Advanced Manufacturing and Engineering Sector and is part of an overall development programme designed to meet the requirements of the Sector.

This unit identifies the training and development required in order that the learner can demonstrate that they are competent in being able to:

Produce components by machining, for the development of jigs and fixtures, in accordance with approved procedures. The machining activities carried out will include milling, turning, grinding, shaping/slotting, drilling, and as applicable to the components being produced. They will be expected to produce new components or modify existing components, requiring them to use a range of different machines, and this will involve setting up the workholding arrangements, workpiece and machine tooling. The components produced will have a combination of features, such as diameters, lengths, threads, flat faces, square faces, slots, profiles or special forms.

Their responsibilities will require them to comply with organisational policy and procedures for the machining activities undertaken, and to report any problems with the activities, materials or equipment used that they cannot personally resolve, or are outside their permitted authority, to the relevant people. They will be expected to work with a minimum of supervision, taking personal responsibility for their own actions and for the quality and accuracy of the work that they carry out.

Their underpinning knowledge will demonstrate a good understanding of their work, and will provide an informed approach to applying appropriate machining procedures and instructions to jig and fixture components. They will understand the machining processes used, and their application, and will know about the tooling and ancillary equipment, materials and consumables, in adequate depth to provide a sound basis for carrying out the machining activities, correcting faults and ensuring that the completed components are to the required specification.

They will understand the safety precautions required when working with the machines and with their associated tools and equipment, especially those for isolating the machine during tool mounting and setting, and when handling cutting tools and equipment. They will be required to demonstrate safe working practices throughout, and will understand the responsibilities they owe to themselves and others in the workplace.

They will be able to apply the appropriate behaviours required in the workplace to meet the job profile and overall company objectives, such as strong work ethic, positive attitude, team player, dependability, responsibility, honesty, integrity, motivation and commitment.

Level 3

Fabricating structural components for jigs and fixtures

Unit Code: AUEC3-245

Overview

This unit of Competence has been developed by employers in the Advanced Manufacturing and Engineering Sector and is part of an overall development programme designed to meet the requirements of the Sector.

This unit identifies the training and development required in order that the learner can demonstrate that they are competent in being able to:
Fabricate structural components for jigs and fixtures, in accordance with approved procedures. They will be required to select materials, cut and prepare components for fabrication, and select the appropriate equipment to use for cutting and preparing the material, which will involve the use of hand tools, hand power tools and machinery, as applicable.

They will be required to check that all the workholding equipment and manipulating devices required are available and are in a usable condition. They will be expected to check the equipment to ensure that it is suitable and free from damage. They must operate the equipment safely and correctly and make any necessary adjustments to settings in order to produce the jig and fixture components to the required specification.

Their responsibilities will require them to comply with organisational policy and procedures for the fabrication activities undertaken, and to report any problems with the fabrication process, or with the tools and equipment used, that they cannot personally resolve, or are outside their permitted authority, to the relevant people. They will be expected to work with a minimum of supervision, taking personal responsibility for their own actions and for the quality and accuracy of the work that they carry out.

Their underpinning knowledge will demonstrate a good understanding of their work and will provide an informed approach to applying fabricating procedures to jig and fixture components. They will know about the equipment, materials and consumables, in adequate depth to provide a sound background for the operations to be performed, and for ensuring that the work output is produced to the required specification.

They will understand the safety precautions required when working with the equipment. They will be required to demonstrate safe working practices throughout, and will understand the responsibility they owe to themselves and others in the workplace.

They will be able to apply the appropriate behaviours required in the workplace to meet the job profile and overall company objectives, such as strong work ethic, positive attitude, team player, dependability, responsibility, honesty, integrity, motivation and commitment.

Level 3

Assembling jigs and fixtures using mechanical methods

Unit Code: AUEC3-246

Overview

This unit of Competence has been developed by employers in the Advanced Manufacturing and Engineering Sector and is part of an overall development programme designed to meet the requirements of the Sector.

This unit identifies the training and development required in order that the learner can demonstrate that they are competent in being able to:

Fabricate structural components for jigs and fixtures, in accordance with approved procedures. They will be required to select materials, cut and prepare components for fabrication, and select the appropriate equipment to use for cutting and preparing the material, which will involve the use of hand tools, hand power tools and machinery, as applicable.

They will be required to check that all the workholding equipment and manipulating devices required are available and are in a usable condition. They will be expected to check the equipment to ensure that it is suitable and free from damage. They must operate the equipment safely and correctly and make any necessary adjustments to settings in order to produce the jig and fixture components to the required specification.

Their responsibilities will require them to comply with organisational policy and procedures for the fabrication activities undertaken, and to report any problems with the fabrication process, or with the tools and equipment used, that they cannot personally resolve, or are outside their permitted authority, to the relevant people. They will be expected to work with a minimum of supervision, taking personal responsibility for their own actions and for the quality and accuracy of the work that they carry out.

Their underpinning knowledge will demonstrate a good understanding of their work and will provide an informed approach to applying fabricating procedures to jig and fixture components. They will know about the equipment, materials and consumables, in adequate depth to provide a sound background for the operations to be performed, and for ensuring that the work output is produced to the required specification.

They will understand the safety precautions required when working with the equipment. They will be required to demonstrate safe working practices throughout, and will understand the responsibility they owe to themselves and others in the workplace.

They will be able to apply the appropriate behaviours required in the workplace to meet the job profile and overall company objectives, such as strong work ethic, positive attitude, team player, dependability, responsibility, honesty, integrity, motivation and commitment.

Level 3

Assembling jig and fixture structures using a manual welding process

Unit Code: AUEC3-247

Overview

This unit of Competence has been developed by employers in the Advanced Manufacturing and Engineering Sector and is part of an overall development programme designed to meet the requirements of the Sector.

This unit identifies the training and development required in order that the learner can demonstrate that they are competent in being able to:

Assemble and weld fabricated and other components into jig and fixture structures, in accordance with instructions and/or approved welding procedures. They will achieve this by producing fillet welds and/or partial butt welds in plate, sheet, sections, pipe or tube, using a manual welding process such as manual metal arc, MIG, MAG, TIG, flux cored wire, inert shield or gas welding equipment. They will be required to check that all the workholding equipment and manipulating devices required are available and are in a usable condition. They will be expected to check the welding equipment to ensure that all the leads/cables, hoses and wire feed mechanisms are securely connected and free from damage.

In preparing to weld, they will need to set and adjust the welding conditions in line with the instructions or welding procedure specification. They must operate the equipment safely and correctly, and make any necessary adjustments to settings in order to produce the welded joints to the required specification. They will be required to demonstrate their capability to produce the welds of the required quality, and this could be through tests according to BS 4872 or BS EN ISO 9606-1.

Their responsibilities will require them to comply with organisational policy and procedures for the welding activities undertaken, and to report any problems with the welding equipment, or welding activities that they cannot resolve, or are outside their permitted authority, to the relevant people. They will be expected to work with a minimum of supervision, taking personal responsibility for their own actions and for the quality and accuracy of the work that they carry out.

Their underpinning knowledge will demonstrate a good understanding of their work, and will provide an informed approach to how the particular welding process works. They will know about the equipment, materials and consumables, in adequate depth to provide a sound background for the welding operations to be performed, and for ensuring that the work output is produced to the required specification.

They will be able to apply the appropriate behaviours required in the workplace to meet the job profile and overall company objectives, such as strong work ethic, positive attitude, team player, dependability, responsibility, honesty, integrity, motivation and commitment.

Level 3

Carrying out repairs or modifications to jigs or fixtures

Unit Code: AUEC3-248

Overview

This unit of Competence has been developed by employers in the Advanced Manufacturing and Engineering Sector and is part of an overall development programme designed to meet the requirements of the Sector.

This unit identifies the training and development required in order that the learner can demonstrate that they are competent in being able to:

Restore jigs or fixtures to usable condition by repair or modification, in accordance with approved procedures. They will be required to rework a range of jig and fixture components and equipment to operational condition, by repairing or modifying assemblies, sub-assemblies and components, by reforming, reworking the surface, replacing threads or the replacement of worn parts. They will also be required to select the appropriate equipment to use, based on the nature of the repair, the operations that will need to be carried out and the accuracy to be achieved.

In producing the components, they will be expected to use a range of hand tools, machine tools, portable power tools, and shaping and fitting techniques, appropriate to the type of material and repair being performed. These will include activities such as sawing (hand, band), drilling, reaming, grinding (hand or machine), filing, scraping or lapping, threading (internal or external), turning, milling, and thermal processes. Materials to be used will include ferrous, non- ferrous, non-metallic and composites, which may be in sheet form, bar sections (such as square/rectangular, round, angle), and part-machined components.

Their responsibilities will require them to comply with organisational policy and procedures for jig and fixture reworking activities, and to report any problems with these activities or with the tools, equipment or materials used, that they cannot personally resolve or are outside their permitted authority, to the relevant people. They will be expected to work with a minimum of supervision, taking personal responsibility for their own actions and for the quality and accuracy of the work that they carry out.

Their underpinning knowledge will demonstrate a good understanding of their work, and will provide an informed approach to applying appropriate jig and fixture repair or modification procedures. They will understand the function and operating conditions of the components being repaired or modified, in adequate depth to provide a sound basis for carrying out the activities to the required specification, and to ensure that any repairs or modifications carried out are safe and practical in operation. They will also understand the organisational policy on repairing or modifying components, and its application.

They will understand the safety precautions required when carrying out the repair or modification activities. They will also understand their responsibilities for safety, and the importance of taking the necessary safeguards to protect themselves and others in the workplace.

They will be able to apply the appropriate behaviours required in the workplace to meet the job profile and overall company objectives, such as strong work ethic, positive attitude, team player, dependability, responsibility, honesty, integrity, motivation and commitment.

Level 3

Producing toolroom components using CNC turning machines

Unit Code: AUEC3-346

Overview

This unit of Competence has been developed by employers in the Advanced Manufacturing and Engineering Sector and is part of an overall development programme designed to meet the requirements of the Sector.

This unit identifies the training and development required in order that the learner can demonstrate that they are competent in being able to prepare, set up and run computer numerically controlled (CNC) turning machines or CNC machining centres, in accordance with approved procedures, to produce toolroom components used in moulds, press tools, dies, jigs and fixtures, test rigs and other experimental or developmental activities. They will be expected to select the appropriate workholding devices, and to mount and secure them to the machine spindle. They will also be required to select the appropriate cutting tools, mount and secure them to the appropriate tool holding devices, and to place the cutting tools in the relevant positions within the tool posts, turrets, slides or tool change magazine/carousel, where this is applicable.

They will need to ensure that all the tools have been allocated a relevant tool number, and that the relevant data on their co-ordinates and datum positions are entered into the operating program. In operating the machine, they will be expected to follow the correct procedures for running the operating program, dealing with any error messages, and executing the program activities safely and correctly.

The components produced will have a number of different features, including turned plain diameters, eccentric diameters, internal/external threads, stepped diameters, flat faces and shoulders, chamfers and radii, special forms and profiles, tapered diameters and faces, internal and external profiles, grooves/undercuts, steps, drilled holes, reamed and tapped holes, and plain and tapered bored holes. They will be required to continuously monitor the machining operations, making any necessary adjustments to machine parameters, in order to produce components which meet the required specification.

Their responsibilities will require them to comply with organisational policy and procedures for the machine setting and operating activities undertaken, and to report any problems with the equipment, tooling, programs, setting-up or operating activities that they cannot personally resolve, or are outside their permitted authority, to the relevant people. They will be expected to work with a minimum of supervision, taking personal responsibility for their own actions and for the quality and accuracy of the work that they carry out.

Their knowledge will provide a good understanding of their work and will provide an informed approach to setting up and running CNC turning machines. They will understand the CNC turning machine used, and its application, and will know about the workholding devices, tooling, machine operating programs, setting-up and running procedures, in adequate depth to provide a sound basis for setting up and running the equipment, correcting faults, and ensuring that the work output is produced to the required specification.

They will understand the safety precautions required when working with the machine and its associated tools and equipment. They will be required to demonstrate safe working practices throughout, and will understand the responsibility they owe to themselves and others in the workplace.

They will be able to apply the appropriate behaviours required in the workplace to meet the job profile and overall company objectives, such as strong work ethic, positive attitude, team player, dependability, responsibility, honesty, integrity, motivation and commitment.

Level 3

Producing toolroom components using CNC milling machines

Unit Code: AUEC3-347

Overview

This unit of Competence has been developed by employers in the Advanced Manufacturing and Engineering Sector and is part of an overall development programme designed to meet the requirements of the Sector.

This unit identifies the training and development required in order that the learner can demonstrate that they are competent in being able to prepare, set up and run computer numerically controlled (CNC) three axis or five axis milling machines or CNC machining centres, in accordance with approved procedures, to produce toolroom components used in moulds, press tools, dies, jigs and fixtures, test rigs and other experimental or developmental activities. This involves selecting the appropriate workholding devices and mounting and positioning them to the machine table in the designated or appropriate position, as required by the machine operating program. They will also be required to select the appropriate milling cutters to use, and to mount and secure them to the appropriate tool holding devices. They will be expected to place the tools in the relevant positions within the tool change magazine or carousel, where this is applicable.

They will need to ensure that all the tools have been allocated a relevant tool number, and that the relevant data on their co-ordinates and datum positions are entered into the operating program and machine. In operating the machine, they will be expected to follow the correct procedures for running the operating program, dealing with any error messages, and executing the program activities safely and correctly.

The components produced will have a number of different features, including such things as flat faces, angled faces, internal and external profiles, slots, steps, holes which are linearly or circularly pitched, and special profiles such as convex or concave. They will be required to continuously monitor the machining operations, making any necessary adjustments to machine parameters, in order to produce components which meet the required specification.

Their responsibilities will require them to comply with organisational policy and procedures for the machine setting and operating activities undertaken, and to report any problems with the equipment, tooling, programs, setting-up or operating activities that they cannot personally resolve, or are outside their permitted authority, to the relevant people. They will be expected to work with a minimum of supervision, taking personal responsibility for their own actions and for the quality and accuracy of the work that they carry out.

Their knowledge will demonstrate a good understanding of their work and will provide an informed approach to setting up and running CNC milling machines. They will understand the CNC milling machine used, and its application, and will know about the workholding devices, tooling, machine operating programs, setting-up and running procedures, in adequate depth to provide a sound basis for setting up and running the equipment, correcting faults, and ensuring that the work output is produced to the required specification.

They will understand the safety precautions required when working with the machine, and with its associated tools and equipment. They will be required to demonstrate safe working practices throughout, and will understand the responsibility they owe to themselves and others in the workplace.

They will be able to apply the appropriate behaviours required in the workplace to meet the job profile and overall company objectives, such as strong work ethic, positive attitude, team player, dependability, responsibility, honesty, integrity, motivation and commitment.

Level 3

Producing toolroom components using CNC grinding machines

Unit Code: AUEC3-348

Overview

This unit of Competence has been developed by employers in the Advanced Manufacturing and Engineering Sector and is part of an overall development programme designed to meet the requirements of the Sector.

This unit identifies the training and development required in order that the learner can demonstrate that they are competent in being able to prepare, set up and run computer numerically controlled (CNC) grinding machines, such as CNC universal grinding machines, CNC surface/profile grinding machines, CNC gear grinding machines, and CNC grinding machining centre, in accordance with approved procedures, to produce toolroom components used in moulds, press tools, dies, jigs and fixtures, test rigs and other experimental or developmental activities. They will be expected to select the appropriate workholding devices, and to mount and secure them to the machine table or spindle in the designated or appropriate position, as required by the machine operating program. They will also be expected to select the appropriate grinding wheels, and to balance, dress, mount and secure them to the appropriate machine spindles and/or tool change magazine/carousel, where this is applicable.

They will need to ensure that all grinding wheels have been allocated a relevant tool number, and that the relevant data on their co-ordinates and datum positions are entered into the operating program and machine controller. In operating the machine, they will be expected to follow the correct procedures for running the operating program, dealing with any error messages, and executing the program activities safely and correctly.

The components produced will have a number of different features, including ground plain diameters, eccentric diameters, external threads, stepped diameters, flat faces and shoulders, chamfers and radii, special forms and profiles, tapered diameters and faces, internal and external profiles, grooves/undercuts, gear teeth, bearing tracks, parallel and tapered bores. They will be required to continuously monitor the machining operations, making any necessary adjustments to machine parameters, in order to produce components which meet the required specification.

Their responsibilities will require them to comply with organisational policy and procedures for the machine setting and operating activities undertaken, and to report any problems with the equipment, grinding wheels, programs, setting-up or operating activities that they cannot personally resolve, or are outside their permitted authority, to the relevant people. They will be expected to work with a minimum of supervision, taking personal responsibility for their own actions and for the quality and accuracy of the work that they carry out.

Their knowledge will demonstrate a good understanding of their work and will provide an informed approach to setting up and running CNC grinding machines. They will understand the CNC grinding machine used, and its application, and will know about the workholding devices, grinding wheels, machine operating programs, setting-up and running procedures, in adequate depth to provide a sound basis for setting up and running the equipment, correcting faults, and ensuring that the work output is produced to the required specification.

They will understand the safety precautions required when working with the machine, and with its associated tools and equipment. They will be required to demonstrate safe working practices throughout, and will understand the responsibility they owe to themselves and others in the workplace.

They will be able to apply the appropriate behaviours required in the workplace to meet the job profile and overall company objectives, such as strong work ethic, positive attitude, team player, dependability, responsibility, honesty, integrity, motivation and commitment.

Level 3

Producing toolroom components using CNC laser profiling machines

Unit Code: AUEC3-349

Overview

This unit of Competence has been developed by employers in the Advanced Manufacturing and Engineering Sector and is part of an overall development programme designed to meet the requirements of the Sector.

This unit identifies the training and development required in order that the learner can demonstrate that they are competent in being able to prepare, set up and run computer numerically controlled (CNC) laser profiling machines and associated equipment, in accordance with approved procedures, to produce toolroom components used in moulds, press tools, dies, jigs and fixtures, test rigs and other experimental or developmental activities. They will be required to select the appropriate workholding devices, and to mount and secure them to the machine table in the correct relationship to the operating program and machine parameters. They will need to set up the machine conditions and adjust/edit program parameters, controlling the setting of the optical system, laser characteristics, laser alignment, electrical parameters, and the laser cutting speed. In operating the machine, they will be expected to follow the correct procedures for running the operating program, dealing with any error messages, and executing the program activities safely and correctly.

The components produced will have a number of different features, such as square/rectangular profiles, curved profiles, angular profiles, circles, ellipses, holes linearly and radially positioned, slots and apertures. They will be required to continuously monitor the cutting operations, making any necessary adjustments to machine parameters, in order to produce components which meet the required specification.

Their responsibilities will require them to comply with organisational policy and procedures for the machine setting and operating activities undertaken, and to report any problems with the equipment, programs, setting-up or operating activities that they cannot personally resolve, or are outside their permitted authority, to the relevant people. They will be expected to work with a minimum of supervision, taking personal responsibility for their own actions and for the quality and accuracy of the work that they carry out.

Their knowledge will demonstrate a good understanding of their work and will provide an informed approach to setting up and running CNC laser cutting machines. They will understand the CNC laser cutting machine used, and its application, and will know about the workholding devices, machine operating programs, setting-up and running procedures, in adequate depth to provide a sound basis for setting up and running the equipment, correcting faults, and ensuring that the work output is produced to the required specification.

They will understand the safety precautions required when working with the machine, and with its associated tools and equipment. They will be required to demonstrate safe working practices throughout, and will understand the responsibility they owe to themselves and others in the workplace.

They will be able to apply the appropriate behaviours required in the workplace to meet the job profile and overall company objectives, such as strong work ethic, positive attitude, team player, dependability, responsibility, honesty, integrity, motivation and commitment.

Level 3

Producing toolroom components using CNC electro-discharge machines

Unit Code: AUEC3-350

Overview

This unit of Competence has been developed by employers in the Advanced Manufacturing and Engineering Sector and is part of an overall development programme designed to meet the requirements of the Sector.

This unit identifies the training and development required in order that the learner can demonstrate that they are competent in being able to prepare, set up and run computer numerically controlled (CNC) electro-discharge machines, such as spark erosion and wire erosion machines, in accordance with approved procedures, to produce toolroom components used in moulds, press tools, dies, jigs and fixtures, test rigs and other experimental or developmental activities. They will be expected to select the appropriate workholding devices, and to mount and secure them to the machine table in the designated or appropriate position, as required by the machine operating program. They will also be expected to select the appropriate electrode cartridge holders or wires, and to mount and secure these to the appropriate machine head/slide and/or tool change holder mechanism, where this is applicable.

They will need to ensure that all electrode cartridges/holders and/or wires have been allocated a relevant tool number, and that the relevant data on their co-ordinates and datum positions is entered into the operating program of the machine controller. In operating the machine, they will be expected to follow the correct procedures for running the operating program, dealing with any error messages, and executing the program activities safely and correctly.

The components produced will have a number of different features, including such things as flat faces, angled faces, internal and external profiles, slots, steps, holes which are linearly or circularly pitched, and special profiles such as convex or concave. They will be required to continuously monitor the machining operations, making any necessary adjustments to machine parameters, in order to produce components which meet the required specification.

Their responsibilities will require them to comply with organisational policy and procedures for the machine setting and operating activities undertaken, and to report any problems with the equipment, electrodes/wires, programs, setting-up or operating activities that they cannot personally resolve, or are outside their permitted authority, to the relevant people. They will be expected to work with a minimum of supervision, taking personal responsibility for their own actions and for the quality and accuracy of the work that they carry out.

Their knowledge will demonstrate a good understanding of their work and will provide an informed approach to setting up and running NC/CNC electro-discharge machines. They will understand the NC/CNC electro-discharge machine used, and its application, and will know about the workholding devices, electrodes and wires, machine operating programs, setting-up and running procedures, in adequate depth to provide a sound basis for setting up and running the equipment, correcting faults, and ensuring that the work output is produced to the required specification.

They will understand the safety precautions required when working with the machine, and with its associated tools and equipment. They will be required to demonstrate safe working practices throughout, and will understand the responsibility they owe to themselves and others in the workplace.

They will be able to apply the appropriate behaviours required in the workplace to meet the job profile and overall company objectives, such as strong work ethic, positive attitude, team player, dependability, responsibility, honesty, integrity, motivation and commitment.

Level 3

Producing toolroom components using CNC machining centres

Unit Code: AUEC3-351

Overview

This unit of Competence has been developed by employers in the Advanced Manufacturing and Engineering Sector and is part of an overall development programme designed to meet the requirements of the Sector.

This unit identifies the training and development required in order that the learner can demonstrate that they are competent in being able to prepare, set up and run computer numerically controlled (CNC) machining centres, in accordance with approved procedures, to produce toolroom components used in moulds, press tools, dies, jigs and fixtures, test rigs and other experimental or developmental activities. They will be expected to select the appropriate workholding devices to be used, and to mount and position them to the machine in the designated or appropriate position, as required by the machine operating program. They will also be required to select the appropriate tools and cutters, to check them for defects, and to mount and secure them to the relevant tool holding devices and machine spindle and/or tool change magazine/carousel.

They will need to ensure that all the tools have been allocated a relevant tool number, and that the relevant data on their co-ordinates and datum positions are entered into the operating program and machine controller. In operating the machine, they will be expected to follow the correct procedures for running the operating program, dealing with any error messages, and executing the program activities safely and correctly. The components produced will have a number of different features, such as plain diameters, eccentric diameters, internal and external threads, stepped diameters, flat faces and shoulders, square and parallel faces, chamfers and radii, tapered diameters and faces, internal and external profiles, grooves/undercuts, parallel and tapered bores, indexed or rotated forms, special forms and profiles. They will be required to continuously monitor the machining operations, making any necessary adjustments to machine parameters, in order to produce components which meet the required specification.

Their responsibilities will require them to comply with organisational policy and procedures for the machine setting and operating activities undertaken, and to report any problems with the equipment, cutting tools, programs, setting-up or operating activities that they cannot personally resolve, or are outside their permitted authority, to the relevant people. They will be expected to work with a minimum of supervision, taking personal responsibility for their own actions and for the quality and accuracy of the work that they carry out.

Their knowledge will demonstrate a good understanding of their work and will provide an informed approach to setting up and running CNC machining centres. They will understand the CNC machining centre used, and its application, and will know about the workholding devices, cutting tools, machine operating programs, setting-up and running procedures, in adequate depth to provide a sound basis for setting up and running the equipment, correcting faults, and ensuring that the work output is produced to the required specification.

They will understand the safety precautions required when working with the machine, and with its associated tools and equipment. They will be required to demonstrate safe working practices throughout, and will understand the responsibility they owe to themselves and others in the workplace.

They will be able to apply the appropriate behaviours required in the workplace to meet the job profile and overall company objectives, such as strong work ethic, positive attitude, team player, dependability, responsibility, honesty, integrity, motivation and commitment.

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