-SQA-SCOTTISH QUALIFICATIONS AUTHORITY

Hanover House
24 Douglas Street
GLASGOW G2 7NG

NATIONAL CERTIFICATE MODULE DESCRIPTOR

-Module Number- **0064782** **-Session-1986-87**

-Superclass- **XF**

-Title- **MATERIAL REMOVAL SKILLS: GRINDING**

-DESCRIPTION-

Type and Purpose

A specialist module which enables the student to develop skills to the standards specified in the EITB Module Segment No. H604.

Preferred Entry Level

04716 Material Removal Practice: Grinding or equivalent experience.

Learning Outcomes

The student should:

1. use a centre lathe, associated equipment and procedures to the standards specified in the EITB Module Segment No. H604;

2. comply with regulations and procedures and use safe working practices specified for equipment and work areas.

Content/ Context

Corresponding to the Learning Outcomes:

1. 1.1 Grinding Wheel Setting.

   After attendance at an 'Abrasive Wheels Regulations' course, further training and experience must be covered in the following practices:

   (a) selection and inspection of grinding wheels for specific materials, with special reference to the type of abrasive, grain size, grade, structure, type of bond as related to the Abrasive Industries marking system;

   (b) testing wheels for cracks;

mounting grinding wheels including precautions to be observed. The use of paper washers, flanges and locking pressure requirements;

(c) 'truing-up' grinding wheels, making reference to the economic usage of wheels and diamond dresser;

(d) balancing mounted wheels where appropriate;

(e) handling and storage of wheels.

1.2 Work Mounting.

Practice in use of work mounting devices to include at least five of the following:

(a) chucks;

(b) plates and blocks;

(c) collets;

(d) face plates;

(e) steadies;

(f) vee-blocks;

(g) vices;

(h) special jigs or fixtures;

(I) mandrels;

(j) between centres.

1.3 Grinding.

Practice in grinding the following surfaces:

(a) horizontal;

(b) vertical;

(c) cylindrical.

2. Safety precautions applicable to tools, equipment and work areas.

Suggested Learning and Teaching Approaches

Each skill should be demonstrated to the performance standard specified and followed by supervised participation by the student in the skill areas covered.

The student should maintain a log book of the exercises completed during the module and, where appropriate, complete an operational layout or a description of the procedures involved.

Formative assessment and safety should be an integral part of all module activities.

Assessment Procedures

Summative assessment will be based on phased tests which must include the skills and tolerances as indicated by the performance criteria.

Acceptable performance in the module will be satisfactory achievement of the performance criteria specified for each learning outcome.

The following abbreviations are used below:

LO Learning Outcome
IA Instrument of Assessment
PC Performance Criteria

LO1 IA(1) Phase tests of the skill elements listed in the Content/Context 1.1 to 1.3.

(2) Observation checklist used in conjunction with the phase tests to ensure that satisfactory procedures are used for each of the skill elements listed in the Content/Context.

PC The student completes the tests in an agreed time:

(a) using correct techniques and procedures including:

(I) a logical sequence of operations;
(ii) selection of appropriate tools and equipment;
(iii) securing work without damage or distortion.

(b) grinding horizontal, vertical and cylindrical surfaces to BS 4500 or BS 1916 grade 5 tolerance and 0.2 um Ra (8 um CLA) surface texture.

LO2 IA Observation checklist (in which the following elements must be included).

PC The student consistently:

(a) wears all necessary safety clothing and equipment;

(b) behaves in a manner appropriate to the working environment;

(c) uses tools and equipment safely.