

**-SQA- SCOTTISH QUALIFICATIONS AUTHORITY**

**Hanover House  
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GLASGOW G2 7NQ**

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**NATIONAL CERTIFICATE MODULE DESCRIPTOR**

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| <b>-Module Number-</b> | <b>2140040</b> | <b>-Session-1990-91</b> |
| <b>-Superclass-</b>    | <b>WH</b>      |                         |

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| <b>-Title-</b> | <b>FABRIC FEED MECHANISMS (x<sup>1</sup>/<sub>2</sub>)</b> |
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**-DESCRIPTION-**

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| Purpose | <p>This module is designed to provide the student with an understanding of feeding mechanisms and their relative importance when applied to a range of machines used by the Garment and Allied Industries.</p> |
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It is intended that this module is taught in conjunction with other related modules to form part of a course of study which should include complementary industrial experience.

The module should normally be taken in parallel with a programme of clothing machine engineering modules.

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| Preferred Entry Level | <p>Standard Grade in Mathematics at 3;<br/>Standard Grade in Science at 3;<br/>Standard Grade in English at 3<br/>84350 Maintenance of Lockstitch Machines (x 1.1/2)<br/>84351 Maintenance of Chainstitch Machines - Single and Two Thread (x 1/2)</p> |
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| Outcomes | <p>The student should:</p> <ol style="list-style-type: none"><li>1. outline the function of a range of sewing machine fittings and the requirements of the machine feed type for a given sewing condition;</li><li>2. dismantle and reassemble a range of feed mechanisms;</li><li>3. adjust and set stitch length control mechanisms for a variety of feed systems;</li><li>4. outline the operation of feed reverse mechanisms and their effect on stitch formation and density;</li></ol> |
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5. diagnose and rectify faults in the fabric feeding mechanisms of a variety of feed systems.

Assessment  
Procedures

Acceptable performance in this module will be satisfactory achievement of all the Performance Criteria specified for each Outcome.

The following abbreviations are used below:

PC Performance Criteria  
IA Instrument of Assessment

**Note:** The Outcomes and PCs are mandatory and cannot be altered. The IA may be altered by arrangement with SQA. (Where a range of performance is indicated, this should be regarded as an extension of the PCs and is therefore mandatory.)

**OUTCOME 1**

**OUTLINE THE FUNCTION OF A RANGE OF SEWING MACHINE FITTINGS AND THE REQUIREMENTS OF THE MACHINE FEED TYPE FOR A GIVEN SEWING OPERATION**

PCs

- (a) The identification of area and components relating to feed mechanisms is correct in terms of name and function.
- (b) The identification of feed types is correct in terms of name and application to a range of sewing machines.
- (c) The outline of advantages and disadvantages of special feeding systems is correct in relation to the given sewing operation.

IA Objective Test

The student will be given an exercise consisting of objective items to test knowledge of sewing machine fittings and feed types.

The exercise will consist of 12 questions based on the Performance Criteria and allocated as follows:

- |     |                              |   |
|-----|------------------------------|---|
| (a) | areas and components         | 4 |
| (b) | feed types                   | 4 |
| (c) | advantages and disadvantages | 4 |

Objective items could take the form of short answer questions, multiple choice questions; completion exercise or matching exercise.

Satisfactory achievement of the Outcome will be based on all Performance Criteria being met. This will be demonstrated by the student producing correct responses to (a), (b) and (c).

**OUTCOME 2                    DISMANTLE AND REASSEMBLE A RANGE OF FEED MECHANISMS**

- PCs
- (a) The identification of feed types is correct in terms of name and function.
  - (b) The dismantling of the feed mechanism ensures all component parts can be identified.
  - (c) The examination of component parts identifies any visual defects.
  - (d) The reassembly of the feed mechanisms ensures all components are relocated correctly and securely.
  - (e) Use of tools is appropriate to the task.
  - (f) Working practices followed are safe.

IA    Assignment

The student will be set an assignment consisting of a practical exercise and objective questions to test the application of knowledge and skills required to dismantle and reassemble a range of feed mechanisms.

For the practical exercise the student will be required to dismantle and reassemble 5 different types of feed mechanisms. In addition, the student will be required to identify each feed mechanism type and its components by name and function. Questions can be either written or oral.

Satisfactory achievement of the Outcome will be demonstrated by the student achieving all the Performance Criteria for each of the 5 feeding mechanisms.

**OUTCOME 3                    ADJUST AND SET STITCH LENGTH CONTROL MECHANISMS FOR A VARIETY OF FEED SYSTEMS**

- PCs
- (a) The adjustment of the machine ensures control of the appropriate amount of feed travel for a given stitch density.
  - (b) The testing of the machine ensures samples produced conform to the given specification.
  - (c) Use of tools and instruments is appropriate to the task.
  - (d) Working practices followed are safe.

## IA Practical Exercise

The student will be set a practical exercise to test the application of knowledge and skills required to dismantle and reassemble a range of feed mechanisms.

The student will be required to adjust and set 3 different feed types each to a different stitch density.

Satisfactory achievement of the Outcome will be based on all Performance Criteria being met for each of the 3 feed types.

**OUTCOME 4****OUTLINE THE OPERATION OF FEED REVERSE MECHANISMS AND THEIR EFFECT ON STITCH FORMATION AND DENSITY**

## PCs

- (a) The outline of the operation of feed reverse mechanisms is correct in terms of the purpose, application and principles.
- (b) The technical description of the feed mechanisms is correct in terms of:
  - (i) operation of the feeding mechanism;
  - (ii) operation of the reverse feed;
  - (iii) effect on stitch density;
  - (iv) effect on stitch formation.
- (c) The identification and selection of feed types ensure that the assembly operation is compatible with garment quality.

## IA Assignment

The student will be set an assignment to test knowledge of the operation of feed reverse mechanisms and their effect on stitch formation and density.

For a given assembly operation, the student will be required to produce a report of a maximum of 500 words and schematic diagrams containing the following information:

- (i) a technical description of the selected feed mechanism;
- (ii) appropriate specifications for a feed element used in the assembly operation compatible with garment quality.

Satisfactory achievement of the Outcome will be based on the student producing a report in accordance with the Performance Criteria.

**OUTCOME 5                   DIAGNOSE AND RECTIFY FAULTS IN THE FABRIC FEEDING MECHANISM FOR A FEED SYSTEMS**

- PCs
- (a) The diagnosis of the fault is correct for the given sewn sample.
  - (b) The rectification of the fault ensures effective and safe operation of the feed mechanism.
  - (c) The adjustment of the feed mechanism ensures control of the amount of feed travel.
  - (d) The setting up of the feed mechanism ensures specified stitch densities can be achieved.
  - (e) Tools and instruments used are appropriate to the task.
  - (f) Working practices followed are safe.

**IA      Practical Exercise**

The student will be given a practical exercise to test the application of knowledge and skills required to diagnose and rectify faults in the fabric feed mechanism.

The student will be given a sewn sample incorporating the effect of a feeding problem. Using the given sample the student will be required to diagnose and rectify the fault on the given feeding mechanism.

Satisfactory achievement of the Outcome will be based on all performance criteria being met. This may be demonstrated by the student producing sewn seam samples to a given stitch density on the repaired feeding mechanism.

**The following sections of the descriptor are offered as guidance.  
They are not mandatory.**

### CONTENT/CONTEXT

Safety and safe working practices should form an integral part of the module activities during investigation of practical machine feed mechanism adjustments and the effects produced in relation to the actual feeding performance of the material on the selected machine type.

Corresponding to the Outcomes 1-5:

1. Inter-relationship and interaction of various machine fittings and their function during the sewing cycle

#### MACHINE FITTINGS:

Basic requirements of appropriate fittings for each machine types to accomplish a given sewing operation:

- (a) classification of mechanisms;
- (b) throat plates;
- (c) needle plates;
- (d) presser feet;
- (e) feed dogs.

#### FEED TYPES:

Relationship of appropriate feed types with given sewing operations, eg;

- (a) drop feed;
- (b) differential feed;
- (c) compound (needle) feed;
- (d) walking and alternating presser feed;
- (e) variable top and bottom feed;
- (f) unison feed;
- (g) puller feed;
- (h) top and bottom wheel feed;
- (i) cup feed;
- (j) special feed systems;
- (k) clamp feed.

2. Examinations and comparison of a variety of feed motions;

#### TRANSMISSION OF MOTIONS:

- (a) driving;
- (b) lifting;
- (c) lateral;
- (d) longitudinal;
- (e) clamp - multi-directional;
- (f) feed drop out;
- (g) feed reverse.

Determination of the correct selection of feed mechanisms for given seaming operations and production situations:

- (a) programmable top and bottom variable feed-sleeve insertion into jackets.
  - (b) cup feed-side seams in knitwear
  - (c) puller feed-belt loops
  - (d) clamp feed-shirt or blouse collar making.
3. Adjusting and setting of feed length controls to produce specified stitch density for selected applications.

stitch density regulators:

- (a) eccentric types; tri-lobe, spiral groove and pin, screw adjust, enclosed eccentric, changeable components;
  - (b) cams and variable stack;
  - (c) replaceable gearing
  - (d) clutch systems
  - (e) quadrant leverage.
4. Examination in detail of feed reverse mechanisms and their effects on stitch density, stitch structure and fabric behaviour during sewing:
- (a) lockstitch machine systems;
  - (b) chainstitch machine systems;
  - (c) specialised machine systems.
5. Feeding faults examination of problems relating to:
- (a) poor stitch formation;
  - (b) gathering;
  - (c) stretching;
  - (d) puckering;
  - (e) flagging;
  - (f) irregularity of stitch length;
  - (g) dragging and run-off;
  - (h) fabric damage;
  - (i) needle breakage.

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#### SUGGESTED LEARNING AND TEACHING APPROACHES

This module should be presented in the sewing room/classroom where the tutor should explain and demonstrate the various techniques using a programme of exercises related to a theme or vocational bias which will interest the student.

The student should follow an activity based learning approach to become familiar with the feed mechanisms in question.

In the initial stages the tutor should fully explain and demonstrate each mechanism and its components. terminology and principles should be introduced in the context of the exercises.

Student activities should be essentially centred in practical and theoretical exercise assignments and the tutor should prepare precise briefs for each assignment exercise.

A set of completed exercises should be available for the students to relate and compare standards.

Information charts, posters and machine manuals (catalogues) relating to machine feed mechanisms should be displayed to assist the student with the exercises.

Safety and safe working practices should form an integral part of the instruction. It should be stressed throughout the module that the needs for good housekeeping, tidy layout of work place, materials and tools is imperative.

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