Demonstrate knowledge of the movements and timings of Raschel element bars to the needle action

Level	**3**
Credits	**7**

Purpose This unit standard is for mechanics of Raschel warp-knitting machines.

People credited with this unit standard are able to: identify and describe the relationships of element bars and needle bars at the critical positions of the knitting cycle; relate the pattern-control system to the overlap and underlap movements of the guide bars; and relate the control of knitting quality of Raschel fabrics to take-up roller speed.

Subfield	Industrial Machine Knitting
Domain	Knitting Machine Servicing and Maintenance
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Entry information	Open.
Accreditation	Evaluation of documentation and visit by NZQA and industry.
Standard setting body (SSB)	Competenz

Accreditation and Moderation Action Plan (AMAP) reference 0030

This AMAP can be accessed at http://www.nzqa.govt.nz/framework/search/index.do.

Special notes

1 This unit standard applies to the Raschel sector of the knitting industry.

2 This unit standard can apply to one or more of the following types of machine, according to the mix of machines that the mechanic services:
- a latch needle, single needle bar machine;
- b latch needle, double needle bar machine;
- c compound needle, single needle bar machine;
- d carbine needle, single needle bar machine (Raschel-crochet machine).

3 The pattern-control system in use may be operated by means of chain links or electronic selection according to the system(s) in use in the workplace.

4 Technical aspects that are required to be covered in demonstrating competence in this unit standard include:
- a the needle bar movement;
- b the critical stages of the knitting cycle;
- c the cycle of movements of the guide bars and other element bars relative to the needle bar or bars;
- d the control of the guide bars during their lapping movements;
- e the distinction between underlaps and overlaps;
- f the lack of overlaps on inlay or patterning guide bars;
- g the manner in which inlay or patterning yarns are held in the fabric;
- h the chain-link numbering system;
- i the control of the quality of any fabric by means of the take-up rollers;
- j run-ins and beam let-offs;
- k the rack (480 courses) as the standard unit in warp-knitting.

Elements and performance criteria

Element 1

Identify and describe the relationships of element bars and needle bars at the critical positions of the knitting cycle.

Performance criteria

1.1 Individual element and needle bars are identified and described in terms of their functions in the knitting cycle.

1.2 The different bars relative to the needle bar are identified and described in terms of their relationships at each critical position in the knitting cycle.

Range clearing, overlap, latch closing as applicable to latch needle machines, knockover, underlap, guide-bar heights, sinker timing.

Element 2

Relate the pattern-control system to the overlap and underlap movements of the guide bars.

Performance criteria

2.1 The distinctions between overlaps and underlaps on the guide bars are identified and described.

2.2 The guide bar movements of the inlay or patterning bars are identified and described in terms of the underlaps.

Range laps used in workplace-based fabrics.

2.3 The relationship between the guide bars and the pattern-control system is identified and described in terms of the guide bar lapping movements.

2.4 Guide bar lapping movements are identified and described in terms of the chain-link numbering system.

Range laps used in the workplace.

2.5 Guide-bar lapping movements are identified by their chain-link numbers.

Range laps used in the workplace.

Element 3

Relate the control of knitting quality of Raschel fabrics to take-up roller speed.

Performance criteria

3.1 The mechanism controlling the fabric take-up roller speed is identified and described in terms of its function.

3.2 The relationship of fabric take-up roller speed to the quality of the fabric is identified and described in terms of courses per centimetre.

3.3 The let-off motions controlling the rate of run-in of each of the ground warps are identified, and their adjustment is described in terms of their effects on fabric quality.

3.4 The relationship between the underlapping movement of a ground bar and its run-in rate is described in terms of its effect on the rate of yarn usage.

Please note

Providers must be accredited by NZQA, or an inter-institutional body with delegated authority for quality assurance, before they can report credits from assessment against unit standards or deliver courses of study leading to that assessment.

Industry Training Organisations must be accredited by NZQA before they can register credits from assessment against unit standards.

Accredited providers and Industry Training Organisations assessing against unit standards must engage with the moderation system that applies to those standards.

Accreditation requirements and an outline of the moderation system that applies to this standard are outlined in the Accreditation and Moderation Action Plan (AMAP). The AMAP also includes useful information about special requirements for organisations wishing to develop education and training programmes, such as minimum qualifications for tutors and assessors, and special resource requirements.

Comments on this unit standard

Please contact Competenz info@competenz.org.nz if you wish to suggest changes to the content of this unit standard.