Demonstrate knowledge of the cam actions of weft-knitting latch needle machines

Level 3

Credits 7

Purpose This unit standard is for mechanics of all types of weft-knitting machines that use latch or compound needles.

People credited with this unit standard are able to: identify and describe the critical positions in the knitting cycle of the latch needles; identify and describe the alterations made to the camming for tucking and miss-knitting on the needles of one or both beds; identify and describe the effects of knockover timing by alteration to the sinker or rib needle knockover; and identify and describe the means of alteration of fabric quality.

Subfield Industrial Machine Knitting

Domain Knitting Machine Servicing and Maintenance

Status Registered

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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 persons servicing any of the following categories of knitting machine:
- a half-hose;
- b full-length hosiery;
- c circular piecegoods;
- d flat bed;
- e circular garment-length.

2 This unit standard can apply to persons working on any mix of the following:
- a machines with a single cylinder;
- b machines with superimposed cylinders (double cylinder or links/links machines);
- c rib machines of all types;
- d interlock machines;
- e flat bed machines, both rib and purl.

3 This unit standard can also apply to machines built to knit by means of compound needles.

4 Technical aspects that are required to be covered in demonstrating competence in this unit standard include:
- a the knitting cycle;
- b the principal cams controlling the knitting cycle;
- c alterations to the cams to produce miss-knitting, and tucking;
- d knockover timing;
- e delayed knockover;
- f the means of adjusting knitting quality;
- g the correct positionings of yarns in the feeders.

5 Knockover timing refers to needle and sinker timing on single cylinder machines; delayed knockover refers to needle timing in those rib, interlock, and double cylinder machines where the means is provided to alter the knockover timing of the needles.

6 The industry knows the various cams associated with latch-needle knitting by a variety of names. In respect of this unit standard, the following terms are used:
- a clearing cam – that cam which displaces needles to clearing height;
- b stitch cam – that cam which displaces cleared needles to the knockover position;
- c tuck cam – a modified clearing cam that raises needles part-way to clearing height such that the old loop remains on the opened latch when a new loop is taken – technically known as tucking in the hook;
- d miss-knit cam – a modified clearing cam that causes no displacement of the needles at the point where clearing would take place so that the needles neither clear their old loop nor take a new loop into the hook.

7 The ways in which the clearing cam is modified into a tuck cam or a miss-knitting cam will vary from machine-type to machine-type.

8 Some machines and their fabric are known by alternative names. In this unit standard, a rib machine is a machine in which the needle beds are at 90° to each other, its needles are in rib gating, and its production is rib fabric.

Elements and performance criteria

Element 1

Identify and describe the critical positions in the knitting cycle of the latch needles.

Performance criteria

1.1 The principal cams are identified and described in terms of their function.

1.2 The critical positions in the knitting cycle are identified and described in terms of the knitting action of the needles.

Range clearing, feeding, knockover.

1.3 The feeding of yarns is identified and described in terms of their placement into the path of the needles for correct knitting.

Range yarns positioned to knit as a single end, yarns positioned to knit plated fabrics.

Element 2

Identify and describe the alterations made to the camming for tucking and miss-knitting on the needles of one or both beds.

Performance criteria

2.1 The displacement distance of the tuck cams is identified and described in relation to the clearing cam.

2.2 The displacement distance of the miss-knitting cams is identified and described in relation to the clearing cam.

2.3 Tucking on some or all of one set of needles is identified and described in terms of the effect.

2.4 Miss-knitting on some or all of one set of needles is identified and described in terms of the effect.

Element 3

Identify and describe the effects of knockover timing by alteration to the sinker or rib needle knockover.

Range machines used in the workplace.

Performance criteria

3.1 Synchronised timing is identified and described in terms of needle knockover.

Range synchronised timing of sinkers in single cylinder machines, or synchronised timing of rib needle knockover on rib and interlock machines.

3.2 Delayed knockover timing is identified and described in terms of the effects.

Range delayed timing of sinkers in single cylinder machines, or delayed timing of rib needle knockover on rib and interlock machines.

Element 4

Identify and describe the means of alteration of fabric quality.

Performance criteria

4.1 The method or methods are described by means of which stitch quality is adjusted.

4.2 Stitch cam adjustment on the quality of a fabric are described in terms of the effects.

4.3 Delayed knockover timing or sinker timing on the quality of a fabric relative to synchronised knockover timing is described in terms of the effect.

Range delayed timing of sinkers in single cylinder machines, or delayed timing of rib needle knockover on rib and interlock machines; delayed knockover timing on rib and interlock machines is restricted to the production of 1 x 1 rib and 1 x 1 interlock respectively.

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.