



**Government of the People's Republic of Bangladesh  
Skills Development Project**



# **National Competency Standards for Circular Knitting Machine Operation**

Qualification Title: **National Skills Certificate-I in Circular Knitting  
Machine Operation (RMG Sector)**

Qualification Code: **RMGCKMO0101**



**Bangladesh Technical Education Board**

*May 2014*

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The National Competency Standard for **Circular Knitting Machine Operation** (NSC-I) is a referral document for the development of curricula, teaching and learning materials, and assessment tools. It also serves as the base document for providing trainings consistent with existing quality assurance systems.

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## Approval Sheet

The National Competency Standards for **National Skills Certificate-I in Circular Knitting Machine Operation (Ready-Made Garments)** Qualification is a document developed by the Technical sub committee for Circular Knitting Machine Operation under the Skills Development Project ADB Loan 2425 – BAN (SF).

It was approved by the Bangladesh Technical Education Board (BTEB) upon the endorsement of the Sector Working Committee at a meeting held on 12 June 2012 at the office of the Industry Skills Council .

The Standard was also approved by Standard and Curriculum Development Committee (SCDC) on 21 April 2014 at BTEB CBT Cell.

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## Preface

The TVET system has a large role to play in economic growth and social development as workforce provider to the labor market and as provider of skills to those who are looking for employment. In the case of Bangladesh, the TVET sector needs major reforms to ensure that issues of quality and capacity, relevance, and access are properly addressed.

The Directorate of Technical Education (DTE) with funding from the Asian Development Bank (ADB), Swiss Agency Development for Cooperation SDC and the Government of Bangladesh (GoB) is implementing a project known as Skills Development Project (SDP). The main target of the Skills Development Project (SDP) is to improve the relevance of TVET in labor market by introducing competency-based training system: a system that proceeds from the development of a qualifications framework, competency standards, curriculum, training delivery, assessment, and quality assurance mechanisms in order to develop a competitive workforce.

The development of competency standards is regarded as the heart of a competency-based training regime. Each standard defines sets of knowledge, skills and attitudes (KSAs) that a Bangladeshi trainee should be able to demonstrate at a recognized level of competence. It provides a common framework of outcomes between the labor and education sectors, as well as among workers, trainers and trainees.

In the process of development, *Industry Skills Council* (ISC) was organized to determine competencies expected of an occupation in Bangladesh. The ISC whose membership come from “top performers” in the industry, performed occupational, competency and unit analyses based on their rich experiences in the field, existing documents, and on the advice of national and international experts. Competency standards of Sri Lanka, Philippines, Australia, Korea, Malaysia, Maldives and other countries were examined.

A series of workshops – development, review and finalization - were conducted to ensure a workable National Competency Standards for the occupation. Further, a validation instrument was developed and administered to other top industry performers to verify and confirm the draft being developed.

It is hoped that this document reflects the real needs of the industry thereby providing a concrete basis for the curriculum development and assessment. In such a way, the development of relevant and competent workforce is not farfetched.

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## Acronyms

ADB	Asian Development Bank
ANTA	Australian National Training Authority
APEC	Asia Pacific Economic Cooperation
ASEAN	Association of Southeast Asian Nations
BMET	Bureau of Manpower Employment and Training
BTEB	Bangladesh Technical Education Board
CBLM	Competency based learning Materials
CBT	Competency Based Training
CS	Competency Standard
DACUM	Development of a Curriculum
DG	Director General
DTE	Directorate of Technical Education
GOB	Government of Bangladesh
HSC (Voc)	Higher Secondary Certificate (Vocational)
KSA	Knowledge, Skills, Attitude
MoE	Ministry of Education
MoLE	Ministry of Labor and Employment
NTVQ	National Technical Vocational Qualification
NTVQ	National Technical Vocational Qualification
NTVQF	National Technical Vocational Qualification Framework
NTVQF	National Technical Vocational Qualification Framework
OHS	Occupational Health and Safety
PD	Project Director
PIU	Project Implementation Unit
PSC	Project Steering Committee
RMG	Ready Made Garments
RPL	Recognition of Prior Learning
SC	Swiss contact
SDP	Skills Development Project
ISC	Industry Skills Council
SMO	Sewing Machine Operation
SSC (Voc)	Secondary School Certificate (Vocational)
STEP	Skills and Training Enhancement project (WB)
SWC	Sector Working Committee
TESDA	Technical Education and Skills Development Authority
TL	Team Leader
TSC	Technical Sub Committee
TVET	Technical and Vocational Education and Training
WB	World Bank
SWMO	Sweater Machine Operation



## Section 1. The Qualification

<b>1. Title of Qualification:</b>	
National Skills Certificate-I in Circular Knitting Machine Operation (RMG Sector)	
<b>2. Qualification code:</b>	<b>3. Endorsement date:</b>
<b>RMGCKM O101</b>	12 June 2012
<b>4. Purpose of the qualification</b>	<p>The NSC-I in Circular Knitting Machine Operation Qualification consists of a set Circular Knitting Machine Operation of competencies that a person must achieve in order to work competently in the Informal Sector as a Sewing Machine Operation.</p> <p>In particular, he/she should be able to:</p> <ol style="list-style-type: none"> <li>1. Prepare Circular Knitting Machine for Production</li> <li>2. Operate Circular Knitting Machine to produce knit fabric</li> <li>3. Operate Double Interlock Circular Knitting Machine</li> <li>4. Operate Flat knitting machine</li> </ol>
<b>5. Regulatory Arrangements</b>	The holder of this qualification should have been assessed by a BTEB certified assessor and found to be competent in the units listed in Section 2.
<b>6. Accreditation requirements</b>	The qualifications shall be offered in compliance with the accreditation requirements set by BTEB.
<b>7. Transition arrangements</b>	In the absence of certified assessors, the BTEB shall appoint trainers who have undergone assessment trainings.
<b>8. Contact for comments</b>	Chairperson Bangladesh Technical Education Board (BTEB) Agargoan, Sher-E-Bangla Nagar, Dhaka.

**Section 2: National Competency Standard**  
**For**  
**National Skills Certificates in Circular Knitting Machine Operation**

**Generic Competencies**

Code	Unit of Competency	Level	No. of Hrs
GN 0101	Communicate in the Workplace	1	32
GN 0102	Work in a Team Environment	1	18
GN 0103	Practice workplace cleanliness	1	18
GN 0104	Practice Occupational Health and Safety (OHS)	1	30
<b>Total</b>			98

**Sector Specific Competencies**

Code	Unit of Competency	Level	No. of Hrs
RMG 0101	Work in the RMG sector	1	24
RMG 0102	Use hand tools and power tools for the RMG sector	1	30
RMG 0203	Interpret drawing and specifications in manuals for RMG sector	2	30
RMG 0204	Perform measurement and calculation	2	48
<b>Total</b>			132

**Occupation Specific Competencies**

<b>Code</b>	<b>Unit of Competency</b>	<b>Level</b>	<b>No. of Hrs</b>
RMGCKM 0101	Prepare Circular Knitting Machine	1	42
RMGCKM 0102	Operate Single Jersey Circular Knitting Machine	1	52
RMGCKM 0103	Operate Double Jersey ( Interlock) Circular Knitting Machine	1	62
RMGCKMO 0204	Operate Flat Knitting Machine	1	52
RMGCKMO 0205	Operate Jacquard knitting machine	2	52
RMGCKMO 0206	Operate stripe knitting machine	2	50
RMGCKMO 0207	Monitor production of circular knitting machine	2	50
RMGCKMO 0208	Perform minor Maintain	2	40
Total			400
Grand Total			630 hours

## Course Structure for National Skills Certificate in Circular Knitting Machine Operation for Level -I

The units of competencies this qualification are summarized as follows:

### Generic Competencies

Code	Unit of Competency	Level	No. of Hrs
GN 0101	Communicate in the Workplace	1	32
GN 0102	Work in a Team Environment	1	18
GN 0103	Practice workplace cleanliness	1	18
GN 0104	Practice Occupational Health and Safety (OHS)	1	30
<b>Total</b>			<b>98</b>

### Sector Specific Competencies

Code	Unit of Competency	Level	No. of Hrs
RMG 0101	Work in the RMG sector	1	24
RMG 0102	Use hand tools and power tools for the RMG sector(Circular Knitting Machine)	1	30
<b>Total</b>			<b>54</b>

### Occupation Specific Competencies

Code	Unit of Competency	Level	No. of Hrs
RMGCKMO 0101	Prepare Circular Knitting Machine	1	42
RMGCKMO 0102	Operate Single Jersey Circular Knitting Machine	1	52
RMGCKMO 0103	Operate Double Jersey (Interlock) Circular Knitting Machine	1	62
RMGCKMO 0204	Operate Flat knitting machine	1	52
<b>Total</b>			<b>208</b>
			<b>360 hours</b>

### Section 3. The Generic Competencies

Unit of Competency:	<b>Communicate in the Workplace</b>
Unit Code:	GN0101
Unit Descriptor:	<p>This unit covers the knowledge, skills and attitudes (KSAs) required in communicating with others in the workplace environment.</p> <p>It includes the use of receiving verbal instructions, interpreting verbal and written information and Conveying instructions using verbal and written forms of communication.</p>
Nominal Hours:	32 hours

<b>Elements of Competency</b>	<b>Performance Criteria</b> Bold italicized words are detailed in the Range of Variables
1. Receive verbal Instructions.	1.1 Instructions are accessed and interpreted. 1.2 Questions are asked to clarify understanding or gain more information. 1.3 Information/instruction is recorded.
2. Interpret verbal and written information/instruction	2.1 <b>Written instructions</b> are interpreted 2.2 Work <b>signage</b> are responded 2.3 Routine written instructions are followed. 2.4 Feedback is given to workplace supervisor
3. Convey instructions using verbal and written forms of communication	3.1 Relevant <b>communication</b> methods are used to transmit instructions. 3.2 Appropriate non-verbal communication is used. 3.3 Channels of communication are identified and followed. 3.4 Communication <b>tools and equipment</b> are operated, and faults are identified and reported. 3.5 Information is conveyed using appropriate <b>forms</b> .
4. Complete written documentation	4.1 All required <b>documentation</b> are completed 4.2 Workplace data is recorded using approved formats or templates. 4.3 Written information/instruction is passed

<p>5. Participate in work place meetings and discussions</p>	<p>5.1 Meetings are attended regularly and on time following well-disseminated agenda. 5.2 Meeting inputs are consistent with the meeting purpose and established protocols. 5.3 Opinions are expressed without interruption. 5.4 Meeting outputs are processed implemented.</p>
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### Range of Variables

Variable	Range (Include but not limited to):
1. Written instructions	<p>1.1 Supervisor's/Manager's Instructions 1.2 Memoranda 1.3 Rules and Regulations 1.4 Signage 1.5 Approved Work Plan 1.6 External communications</p>
2. Workplace guidelines	<p>2.1 Labor Policies and Guidelines 2.2 Written Instructions 2.3 Operations Manual 2.4 Organizational Manuals 2.5 Quality Assurance Handbook</p>
3. Signage	<p>3.1 On-site direction signs 3.2 Common site warnings 3.3 Location signs 3.4 Traffic signs</p>
4. Communication	<p>4.1 Verbal instructions 4.2 Written instructions 4.3 Online communication</p>
5. Tools and machinery	<p>5.1 Telephone 5.2 Mobile Phone 5.3 Fax machines 5.4 Two-way radio 5.5 Computers 5.6 Forms 5.7 Memo 5.8 Two-way radio</p>
6. Forms	<p>6.1 Memorandum 6.2 Requisitioning Form 6.3 Personnel Form 6.4 Safety Report Form</p>

7. Documentation	<p>7.1 Reports (Monthly, Quarterly, Half-Yearly, Annual)</p> <p>7.2 Plans (Strategic Plan, Operational Plan, Monthly Schedule)</p> <p>7.3 Monitoring and Evaluation Report</p> <p>7.4 Minutes of Meetings</p>
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### Evidence Guide

1. Critical Aspects of competency	<p>1.1 Demonstrated knowledge of workplace procedures in receiving, interpreting and conveying verbal &amp; written communication.</p> <p>1.2 Satisfied the requirements mentioned in the Performance Criteria and Range of Variables</p>
2. Underpinning knowledge	<p>2.1 Workplace Communication Policies, Standards and Procedures</p> <p>2.2 Verbal and Non-verbal communication</p> <p>2.3 Modes of Communication</p> <p>2.4 Communication Equipment: Types, Uses and Faults</p> <p>2.5 Channels of Communication</p>
3. Underpinning Skills	<p>3.1 Receiving verbal instructions.</p> <p>3.2 Interpreting verbal and written information/ instruction</p> <p>3.3 Conveying instructions using verbal and written forms of communication</p> <p>3.4 Completing written documentation</p> <p>3.5 Participating in work place meetings and discussions</p>
4. Underpinning Attitudes	<p>4.1 Commitment to occupational health and safety</p> <p>4.2 Environmental concerns</p> <p>4.3 Eagerness to learn</p> <p>4.4 Tidiness and timeliness</p> <p>4.5 Respect for rights of peers and seniors in workplace</p>
5. Resource Implication	<p>5.1 Pens</p> <p>5.2 Telephone</p> <p>5.3 Computer</p> <p>5.4 Writing materials</p> <p>5.5 Online communication</p> <p>5.6 Instruction sheet</p> <p>5.7 Module</p>
6. Methods of	<p>6.1. Oral question</p> <p>6.2. Direct observation</p>

Assessment	6.3 Assignment 6.4 Demonstration 6.5 Written Exam. 6.6 Portfolio 6.7 Practical Exam
7. Context of Assessment	For certification competency should be assessed individually in the actual work place or simulated environment after completion of the module.
<p><b>Accreditation Requirements</b></p> <p>Training providers must be accredited by Bangladesh Technical Education Board(BTEB) , the national quality assurance body, or a body with delegated authority for quality assurance to conduct training and assessment against this unit of competency for credit towards the award of any national qualification.</p> <p>Accredited providers assessing against this unit of competency must meet the quality assurance requirements set by BTEB.</p>	



Unit of Competency:	<b>Work in a Team Environment</b>
Unit Code:	GN0102
Unit Descriptor:	This unit covers the knowledge, skills and attitudes (KSAs) required in working in a team environment.  It includes the following: identify OHS policies and procedures, follow personal safety measures, report hazards and risks, respond to emergencies, and maintain personal well-being.
Nominal Hours:	18 hours

<b>Elements of Competency</b>	<b>Performance Criteria</b>
	Bold italicized words are detailed in the Range of Variables
1. Define team role and scope	1.1 Role and objectives of the team are defined from available <b><i>sources of information</i></b> . 1.2 Team structure, responsibilities and reporting relations are identified from team discussions and other external sources.
2. Identify individual role and responsibility	2.1 Individual roles and responsibilities of <b><i>team members</i></b> are identified 2.2 Reporting relationships among team members are defined and clarified. 2.3 Reporting relationships external to the team are defined and clarified.
3. Participate in team discussions	3.1 Ideas related to team plans are contributed 3.2 Recommendations for improving team work are put forward.
4. Work as a team member	4.1 Effective forms of communication are used to interact with team members in discussing team activities and objectives based on <b><i>workplace context</i></b> . 4.2 Communication channels are followed. 4.3 OHS practices are followed

**Range of Variables**

<b>Variable</b>	<b>Range</b> (Include but not limited to):
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1. Sources of information	1.1 Standard Operating Procedures 1.2 Job Description 1.3 Operations Manual 1.4 Organizational Structure
2. Team Members	Include but not limited to: 2.1 Coach/mentor 2.2 Supervisor/Manager 2.3 Peers/Colleagues 2.4 Employee representative
3. Workplace context	3.1 National Laws and Statutes 3.2 Standard Operating Procedures 3.3 Workplace Rules and Regulations

### Evidence Guide

1. Critical Aspects of competency	1.1. Demonstrated knowledge in working in a team environment. 1.2. Satisfied the requirements mentioned in the Performance Criteria and Range of Variables
2. Underpinning knowledge	2.1. Team Structure, Role and Responsibility 2.2. Individual Members' Roles and Responsibilities 2.3. Communication Flow and Reporting Structures 2.4. Team Planning 2.5. Interpersonal Communication Skills 2.6. Team Meeting Procedures 2.7. OHS Practices
3. Underpinning Skills	3.1. Identifying the role and responsibility of the team 3.2. Identifying roles and responsibilities of individual members 3.3. Participating in team discussions 3.4. Working as a team member
4. Underpinning Attitudes	4.1 Commitment to occupational health and safety 4.2 Environmental concerns 4.3 Eagerness to learn 4.4 Tidiness and timeliness 4.5 Respect for rights of peers and seniors in workplace
5. Resource Implication	The following resources must be made available: 5.1 Appropriate workplace 5.2 Relevant materials and equipment

	5.3 Relevant specifications or work instructions
6. Methods of Assessment	6.1. Oral question 6.2. Direct observation 6.3 Assignment 6.4 Demonstration 6.5 Written Exam. 6.6 Portfolio 6.7 Practical Exam
7. Context of Assessment	For certification competency should be assessed individually in the actual work place or simulated environment after completion of the module.

### **Accreditation Requirements**

Training providers must be accredited by Bangladesh Technical Education Board (BTEB) , the national quality assurance body, or a body with delegated authority for quality assurance to conduct training and assessment against this unit of competency for credit towards the award of any national qualification.

Accredited providers assessing against this unit of competency must meet the quality assurance requirements set by BTEB.

Unit of Competency:	<b>Practice Workplace Cleanliness</b>
Unit Code:	GN0103
Unit Descriptor:	This unit covers the knowledge, skills and attitudes (KSAs) required in applying 5S in the workplace.  It includes five steps, namely: sort, systematize, sweep, standardize, and sustain activities.
Nominal Hours:	18 hours

<b>Elements of Competency</b>	<b>Performance Criteria</b>
	Bold italicized words are detailed in the Range of Variables
1. Sort to dispose unnecessary items	1.1. Items in the workplace are identified and differentiated into necessary and unnecessary. 1.2. <b>Unnecessary items</b> are removed and disposed. 1.3. Inventory of necessary items are updated and maintained.
2. Systematize the workplace	2.1. Necessary items are supplied with identification marks and arranged in order. 2.2. The best location to place the necessary items is identified. 2.3. Necessary items are regularly checked in their assigned location.
3. Sweep the workplace	3.1. Workplace is kept neat, clean and tidy before, during and after work hours. 3.2. Tools and equipment are kept clean. 3.3. <b>Minor repairs</b> are done to tools and equipment, when necessary. 3.4. Defective tools and equipment are reported to authority.
4. Standardize activities	4.1. Workplace activities are done based on standard operating procedures. 4.2. Workplace <b>decorum</b> is maintained. 4.3. Accidents are reported to authority immediately. 4.4. Work is performed according to OHS procedures.
5. Sustain housekeeping activities	5.1. <b>5S</b> procedure is implemented. 5.2. Bottlenecks are identified, improvements are recommended, and actions are taken.

**Range of Variables**

<b>Variable</b>	<b>Range</b> (Include but not limited to):
1. Unnecessary Items	May include but not limited to: 1.1. Waste materials 1.2. Papers and other printed materials not related to work activities 1.3. Damaged tools and equipment 1.4. Non-recyclable materials
2. Minor repairs	May include but not limited to: 2.1. Sharpening of tools 2.2. Tightening of nuts, bolts and screws 2.3. Replacing of parts 2.4. Application of oil and lubricants
3. Decorum	3.1. Workplace rules and regulations 3.2. Workplace Code of Ethics
4. 5S	A system of work developed in Japan for housekeeping purposes. It consists of: 4.1. Sort 4.2. Systematize 4.3. Sweep 4.4. Standardize 4.5. Sustain

**Evidence Guide:**

1. Critical Aspects of competency	1.1. Evidence of routine practice of 5S in the workplace. 1.2. Satisfying the requirements mentioned in the Performance Criteria and Range of Variables
2. Underpinning knowledge	2.1. Meaning and Application of 5S 2.2. Purposes of 5S 2.3. Methods of Identifying Weaknesses and Recommending Improvements 2.4. Principles of Efficient Workplace
3. Underpinning Skills	3.1. Communicating 3.2. Planning 3.3. Organizing 3.4. Prioritizing 3.5. Recording 3.6. Problem Solving

4. Underpinning Attitudes	4.1 Commitment to occupational health and safety 4.2 Environmental concerns 4.3 Eagerness to learn 4.4 Tidiness and timeliness 4.5 Respect for rights of peers and seniors in workplace 4.6 Communication with peers and seniors in workplace
5. Resource Implication	5.1 Materials, tools and equipment necessary for the activity. 5.2 Module 5.3 Instruction sheet
6. Methods of Assessment	6.1. Oral question 6.2. Direct observation 6.3 Assignment 6.4 Demonstration 6.5 Written Exam. 6.6 Portfolio 6.7 Practical Exam
7. Context of Assessment	For certification competency should be assessed individually in the actual work place or simulated environment after completion of the module.
<p><b>Accreditation Requirements</b></p> <p>Training providers must be accredited by Bangladesh Technical Education Board (BTEB), the national quality assurance body, or a body with delegated authority for quality assurance to conduct training and assessment against this unit of competency for credit towards the award of any national qualification.</p> <p>Accredited providers assessing against this unit of competency must meet the quality assurance requirements set by BTEB.</p>	

Unit of Competency:	<b>Practice Occupational Health and Safety (OHS)</b>
Unit Code:	GN0104
Unit Descriptor:	<p>This unit covers the knowledge, skills and attitudes (KSAs) required in carrying out occupational and safety practices in the workplace.</p> <p>It includes the following: identify OHS policies and procedures, follow personal safety measures, report hazards and risks, respond to emergencies, and maintain personal well-being.</p>
Nominal Hours:	30 hours

<b>Elements of Competency</b>	<b>Performance Criteria</b>
	Bold italicized words are detailed in the Range of Variables
1. Identify OHS policies and procedures.	<p>1.1. <b><i>OHS policies</i></b> and <b><i>safe operating procedures</i></b> are accessed, clarified and followed.</p> <p>1.2. <b><i>Safety signs and symbols</i></b> are identified and followed</p> <p>1.3. Emergency response, evacuation procedures and other contingency measures are determined.</p> <p>1.4. Workplace safety conditions are regularly reported to authority.</p>
2. Apply personal health and safety practices	<p>2.1. <b><i>Personal protective equipment (PPE)</i></b> and appropriate clothing are worn correctly and stored after use.</p> <p>2.2. A clear and tidy workplace is maintained.</p> <p>2.3. OHS equipment are maintained to keep them operational and compliant with OHS regulations</p>
3. Report hazards and risks.	<p>3.1. <b><i>Hazards</i></b> and risks are identified, assessed and controlled.</p> <p>3.2. Terms of tolerable limits are identified.</p> <p>3.3. Incidents arising from hazards and risks are reported to authority</p> <p>3.4. Details of incidents are recorded.</p>
4. Respond to emergencies	<p>4.1. Alarms and warning devices are responded to.</p> <p>4.2. Workplace <b><i>emergency procedures</i></b> are followed.</p> <p>4.3. Emergency response plans and procedures are implemented.</p>

5. Maintain personal well-being	5.1. OHS policies and procedures are adhered to. 5.2. OHS awareness programs are participated. 5.3. Corrective actions are implemented to correct unsafe condition in the workplace 5.4. <b>“Fit to work” records</b> are updated and maintained.
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### Range of Variables

Variable	Range (Include but not limited to):
1. OHS Policies and Procedures	1.1. Bangladesh standards for OHS 1.2. Building Code 1.3. Fire Safety Rules and Regulations 1.4. Code of Practice 1.5. Industry Guidelines
2. Safe Operating Procedures	May include but not limited to: 2.1. Orientation on emergency exits, fire extinguishers, fire escape, etc. 2.2. Emergency procedures 2.3. First Aid procedures 2.4. Tagging procedures 2.5. Use of PPE 2.6. Safety procedures for hazardous substances
3. Safety Signs and symbols	May include but not limited to: 3.1. Direction signs (exit, emergency exit, etc.) 3.2. First aid signs 3.3. Danger Tags 3.4. Hazard signs 3.5. Safety tags 3.6. Warning signs
4. Personal Protective Equipment (PPE)	May include but not limited to: 4.1. Gas Mask 4.2. Gloves 4.3. Safety boots 4.4. Helmet 4.5. Face mask 4.6. Overalls 4.7. Goggles and safety glasses 4.8. Ear plugs



	4.9. Sun block 4.10. Chemical/Gas detectors
5. Hazards	5.1. Chemical hazards 5.2. Biological hazards 5.3. Physical Hazards
6. Emergency Procedures	Include but not limited to:  6.1. Fire fighting 6.2. Medical and first aid 6.3. evacuation
7. “Fit to Work” records	7.1. Medical Certificate every year 7.2. Accident reports, if any

### Evidence Guide

1. Critical Aspects of competency	1.1. Demonstrated knowledge in practicing occupational health and safety in the workplace. 1.2. Satisfying the requirements mentioned in the Performance Criteria and Range of Variables
2. Underpinning knowledge	2.1. OHS Workplace Policies and Procedures 2.2. Work Safety Procedures 2.3. Emergency Procedures 2.4. Types of Hazards (Biological, Chemical and Physical) and Their Effects 2.5. PPE types and uses 2.6. Personal Hygiene Practices 2.7. OHS Awareness
3. Underpinning Skills	3.1. Identifying OHS policies and procedures 3.2. Following personal work safety practices 3.3. Reporting hazards and risks 3.4. Responding to emergency procedures 3.5. Maintaining physical well-being in the workplace
4. Underpinning Attitudes	4.1 Commitment to occupational health and safety 4.2 Environmental concerns 4.3 Eagerness to learn 4.4 Tidiness and timeliness 4.5 Respect for rights of peers and seniors in workplace 7.1. 4.6 Communication with peers and seniors in workplace
5. Resource Implication	The following resources must be provided: 5.1. Workplace facility 5.2. Equipment and outfits appropriate in applying

	<p>safety measures</p> <p>5.3. Tools, materials and documentation required</p> <p>5.4. OHS Policies and Procedures</p>
6. Methods of Assessment	<p>6.1. Oral question</p> <p>6.2. Direct observation</p> <p>6.3 Assignment</p> <p>6.4 Demonstration</p> <p>6.5 Written Exam.</p> <p>6.6 Portfolio</p> <p>6.7 Practical Exam</p>
7. Context of Assessment	<p>For certification competency should be assessed individually in the actual work place or simulated environment after completion of the module.</p>
<p><b>Accreditation Requirements</b></p> <p>Training providers must be accredited by Bangladesh Technical Education Board (BTEB), the national quality assurance body, or a body with delegated authority for quality assurance to conduct training and assessment against this unit of competency for credit towards the award of any national qualification.</p> <p>Accredited providers assessing against this unit of competency must meet the quality assurance requirements set by BTEB.</p>	

## Section 4. The Sector Specific Competencies

Unit of Competency:	<b>Work in the Ready-Made Garments (RMG) Sector</b>
Unit Code:	RMG0101
Unit Descriptor:	This unit covers the knowledge, skills and altitude in working in the RMG sector.  It includes the following steps: describing the organizational structure within the ready-made garments sector, identifying processes and procedures, identifying tools, equipment and materials, identifying workplace requirements, organize own workload, and practice OHS.
Nominal Hours:	24hrs

<b>Elements of Competency</b>	<b>Performance Criteria</b>
	Bold italicized words are detailed in the Range of Variables
1. Describe the organization structure within the sector	1.1 Scope, nature and <b>major fields</b> of the RMG sector are determined 1.2 Profile of the RMG sector in relation to Bangladesh labor market 1.3 <b>Employment conditions</b> is determined 1.4 Trends and technologies relevant to the sector are explained. 1.5 Relevant policies and guidelines are identified and interpreted. 1.6 <b>Instructions</b> as to procedures in achieving quality are obtained, understood, and clarified.
2. Identify processes and procedures	2.1 Garment production processes are identified, described and explained. 2.2 Work steps are identified. 2.3 Adjustments are interpreted.
3. Identify tools, equipment and materials	3.1 Appropriate <b>manuals</b> are accessed to ensure up-to date specifications of tools, materials and equipment. 3.2 RMG <b>tools, equipment and materials</b> are identified in case of non-availability. 3.3 Substitutes are selected. 3.4 Adjustments are interpreted.
4. Identify workplace requirements	4.1 <b>Workplace requirements</b> are identified and clarified. 4.2 Roles and responsibilities of all personnel are described. 4.3 Workplace's practices are identified. 4.4 <b>Problem-solving strategies</b> are used to address bottlenecks, inconsistencies and other concerns.

5. Organize own workload	<p>5.1 Own work activities are planned and progress of work is communicated to relevant staff.</p> <p>5.2 Work activities are completed.</p> <p>5.3 Difficulties and bottlenecks are identified, and solutions are put forward.</p> <p>5.4 Own work is monitored against workplace standards and areas for improvement identified and acted upon.</p>
6. Practice OHS	<p>6.1 Relevant <b>OHS</b> practices are identified &amp; interpreted.</p> <p>6.2 Relevant <b>OHS</b> practices implemented.</p>

### Range of Variables

Variables	Ranges (Include but not limited to):
1. Major Fields	<p>1.1 Sweater Machine Operation</p> <p>1.2 Knitting Machine Operation</p> <p>1.3 Dyeing and Printing Machine Operation</p> <p>1.4 Finishing Machine Operation</p> <p>1.5 Bleaching Machine Operation</p> <p>1.6 Lab Former Operation</p> <p>1.7 Comber Operation</p> <p>1.8 Winch Machine Operation</p>
2. Employment conditions	<p>2.1 Code of Practice</p> <p>2.2 Salary/Wage System</p> <p>2.3 Labor Practices</p> <p>2.4 Anti-Discrimination Policy</p> <p>2.5 Gender Issues</p> <p>2.6 Collective Bargaining and Other Practices</p> <p>2.7 Awards</p> <p>2.8 Procedures for Handling Disputes</p> <p>2.9 Innovations in the Sector</p>
3. Instructions	<p>3.1. Specifications and requirements</p> <p>3.2. Standard operating procedures</p> <p>3.3. Manuals of Instruction</p> <p>3.4. Operations Manual</p> <p>3.5. Environmental Guidelines</p> <p>3.6. Gender and Development (GAD) Guidelines</p>
4. Manuals	<p>4.1 Manual of Instruction</p> <p>4.2 Manual of Specification</p> <p>4.3 Operations Manual</p> <p>4.4 Repair Manual</p> <p>4.5 Quality Manual</p>
5. Workplace requirements	<p>5.1 Goals and objectives</p> <p>5.2 Strategic and Operational Plans</p>

	5.3 Systems and Processes 5.4 Monitoring and Evaluation 5.5 Reports and Documentation
6. Tools, materials and equipment	Refers to all tools, equipment and materials appropriate to any of the RMG fields
7. Problem-solving strategies	7.1 Asking questions 7.2 Feedback and Feed forward system 7.3 Reference to Standard Operating Procedures 7.4 Accessing Information 7.5 Reviews 7.6 Brainstorming
8. OHS	8.1 Reporting hazards, risks and emergencies 8.2 Arrangement of workplaces 8.3 Standard Operating Procedure 8.4 Use of PPE 8.5 Workplace environment and safety 8.6 Safe storage of tools and equipment

**Evidence Guide:**

1. Critical aspects of competency	1.1 Demonstrated knowledge in working in the Garment industry. 1.2 Satisfying the requirements mentioned in the Performance Criteria and Range of Variables
2. Underpinning knowledge	2.1 Scope and Major Divisions of the Garment Industry 2.2 Policies and Guidelines Relevant to the Garment Industry 2.3 Manuals Used in the Garment Industry 2.4 Relevant Terminologies and Acronyms 2.5 Types and Uses of Garment production Tools and Materials 2.6 Workplace Practices 2.7 Occupational Health and Safety Practices 2.8 Recording and reporting practices
3. Underpinning Skills	3.1 Describing organization structure within the garment industry 3.2 Identifying processes and procedures 3.3 Identifying tools, equipment and materials 3.4 Identifying workplace practices 3.5 Organizing own workload 3.6 Practicing OHS
4. Underpinning Attitude	4.1 Commitment to occupational health and safety

	<p>4.2 Environmental concerns</p> <p>4.3 Eagerness to learn</p> <p>4.4 Tidiness and timeliness</p> <p>4.5 Respect for rights of peers and seniors in workplace</p>
5. Resource Implications	<p>The following resources must be provided</p> <p>5.1 Adequate workplace</p> <p>5.2 Availability of quality tools and materials required</p> <p>5.3 Information on SOP, OHS, and other policies and guidelines</p> <p>5.4 Relevant specifications and work instructions</p>
6. Method of Assessment	<p>6.1. Oral question</p> <p>6.2. Direct observation</p> <p>6.3 Assignment</p> <p>6.4 Demonstration</p> <p>6.5 Written Exam.</p> <p>6.6 Portfolio</p> <p>6.7 Practical Exam</p>
7. Context of Assessment	<p>For certification competency should be assessed individually in the actual work place or simulated environment after completion of the module.</p>
<p><b>Accreditation Requirements</b></p> <p>Training providers must be accredited by Bangladesh Technical Education Board(BTEB) , the national quality assurance body, or a body with delegated authority for quality assurance to conduct training and assessment against this unit of competency for credit towards the award of any national qualification.</p> <p>Accredited providers assessing against this unit of competency must meet the quality assurance requirements set by BTEB.</p>	

Unit of Competency:	<b>Use Hand Tools and power tools for the RMG Sector</b>
Unit Code:	RMG0102
Unit Descriptor:	This unit covers the skills, knowledge and attitudes in using hand tools for the RMG sector. It includes the following steps: identify tools, use hand tools, practice OHS, and clean up.
Nominal Hours:	30 hours

<b>Elements of Competency</b>	<b>Performance Criteria</b> Bold italicized words are detailed in the Range of Variables
1. Identify tools	1.1 Appropriate <b><i>hand tools</i></b> and power tools are selected 1.2 <b><i>Applications of tools</i></b> are defined. 1.3 Hand tools and power tools are prepared.
2. Use hand tools	2.1 Appropriate tool is used. 2.3 Proper hand-eye coordination is applied in use of hand tools. 2.4 Unsafe or faulty tools are identified and Marked for repair.
3. Use power tools	3.1 Route for power supply established. 3.2 Proper sequence of operations is applied
4. Perform basic preventive Maintenance.	4.1 Tools and equipment are cleaned. 4.2 Appropriate lubricants are identified. 4.3 Tools and equipment are lubricated. 4.4 Measuring instruments are checked and Calibrated. 4.5 Defective instruments, equipment and accessories are inspected corrected/replaced. 4.6 Tools are inspected, repaired and replaced After use. 4.7 Work place is cleaned and cleared of debris and unwanted materials as per OHS Regulations.
5. Practice OHS	5.1 Waste materials are disposed according to OHS and workplace requirements.

	<p>5.2 Hazardous materials are identified for Separate handling.</p> <p>5.3 <b>PPE</b> are used.</p> <p>5.4 Devices to suppress dust are used to minimize health risk of workers</p> <p>5.5 Safety requirements are being adhered to Before, during and after use.</p> <p>5.6 Accidents and emergency cases are reported to authority.</p>
6. Store tools and equipment	<p>6.1 Inventory of tools equipment are conducted, and recorded as per stock register by using <b>Forms</b>.</p> <p>6.2 Tools and equipment are cleaned and stored Safely in appropriate location.</p>

**Range of Variables:**

<b>Variable</b>	<b>Range (Include but not limited to):</b>
1. Hand tools	<p>1.1 Measuring Tapes</p> <p>1.2 Screwdrivers</p> <p>1.3 Steel tape measure</p> <p>1.4 Taps</p> <p>1.5 Steel ruler</p> <p>1.6 Scissor</p> <p>1.7 Cutter</p> <p>1.8 Needle</p> <p>1.9 Blower</p>
2. Applications	<p>2.1 Adjusting</p> <p>2.2 Aligning</p> <p>2.3 Assembling</p> <p>2.4 Clamping</p> <p>2.5 Cleaning</p> <p>2.6 Dismantling</p> <p>2.7 Finishing</p> <p>2.8 Lubricating</p> <p>2.9 Scraping</p> <p>2.10 Simple Tool Repairs</p> <p>2.11 Tightening</p>
3. Tools	3.1 Hand Tools



	3.2 Power tools
4. Instructions	4.1 Manufacturer's Specifications and Instructions for specific tools/equipment 4.2 Workplace orders and instructions 4.3 Work schedule documentation 4.4 Procedures
5. PPE	5.1 Dust mask 5.2 Aprons 5.3 Face masks
6. Forms	6.1 Maintenance schedule forms 6.2 Requisition slip 6.3 Borrower's Slip 6.4 Inventory Form 6.5 Inspection Forms 6.6 Procedures

**Evidence Guide:**

1. Critical aspects of competency	1.1 Demonstrated knowledge in using hand tools 1.2 Satisfied the requirements mentioned in the Performance Criteria and Range of Variables
2. Underpinning knowledge	2.1 Types of Tools 2.1.1 Hand Tools 2.1.2 Technical Application of Tools 2.2 Procedures in the Use of Hand Tools 2.3 Policies and procedures for Occupational health and Safety 2.1.1 Use of PPE 2.1.2 Handling of Tools and Equipment 2.1.3 Reporting and Documentation 2.3 Preventive Maintenance 2.3.1 Methods and Techniques 2.3.2 Quality Procedures 2.4 Storage Procedures
3. Underpinning Skills	3.1 Identifying Appropriate Tools 3.2 Using Hand Tools Correctly 3.3 Performing Preventive Maintenance 3.4 Practicing OHS 3.5 Storing tools and equipment
4. Underpinning Attitude	4.1 Commitment to occupational health and safety 4.2 Environmental concerns 4.3 Eagerness to learn 4.4 Tidiness and timeliness 4.5 Respect for rights of peers and seniors in workplace
5. Resource	The following resources must be provided

Implications	5.1 Adequate workplace 5.2 All tools, equipment and materials required 5.3 Information and documentation 5.4 Product specifications 5.5 Manual, Codes, Standards and reference materials 5.6 Module 5.7 Instruction sheet
6. Method of Assessment	6.1. Oral question 6.2. Direct observation 6.3 Assignment 6.4 Demonstration 6.5 Written Exam. 6.6 Portfolio 6.7 Practical Exam
7. Context of Assessment	For certification competency should be assessed individually in the actual work place or simulated environment after completion of the module.
<p><b>Accreditation Requirements</b></p> <p>Training providers must be accredited by Bangladesh Technical Education Board(BTEB) , the national quality assurance body, or a body with delegated authority for quality assurance to conduct training and assessment against this unit of competency for credit towards the award of any national qualification.</p> <p>Accredited providers assessing against this unit of competency must meet the quality assurance requirements set by BTEB.</p>	

## Section 5: The Occupation Specific Competencies

Unit of Competency	<b>Prepare Circular Knitting Machine</b>
Unit Code	RMGCKMO 0101
Unit Descriptor	This unit covers the skill, knowledge and attitude required to prepare circular knitting machine for production. It includes collecting knit card and yarn, performing creel management checking needle, sinker and detector. Feeding the materials in the needle.
Nominal Hours	42 Hours

<b>Element</b>	<b>Performance Criteria</b>
	<b><i>Bold italicized</i></b> words are detailed in the Range of Variables
1. Collect tools and materials	1.1 <b><i>PPE</i></b> are Collected and used. 1.2 <b><i>Tools</i></b> and materials are selected and collected. 1.3 Knit card is collected and hanged 1.4 Yarn package are selected and collected
2. Set Machine	2.1. Machine is cleaned. 2.3 <b><i>Lubricant</i></b> is checked. 2.4 <b><i>Safety Guard</i></b> are cheeked. 2.5 <b><i>Machine parts</i></b> are checked and adjusted. 2.6. <b><i>Cylinder</i></b> is adjusted
3. Check needle and Meminger positive feeder/TPF	3.1 <b><i>Needle</i></b> is cheeked for proper setting. 3.2 Cam box is cheeked for proper setting. 3.3 Wheel position is checked for proper setting. 3.4 Stop motion device is checked for proper setting.
4.Set Yarn	4.1 <b><i>Yarn</i></b> package are placed on the creel 4.2 Yarn is feed into the positive feeder and needle hook. 4.3 Yarn tension are checked and adjusted.
5. Clean the work place	5.1 Tools Equipment and Machines are cleaned. 5.2 Work place is cleaned. 5.3 Waste materials are collected and disposed.

### Range of Variables

<b>Variable</b>	<b>Range (Included but not limited to☺)</b>
1.PPE	1.1 Mask 1.2 Apron 1.3 Cap
2. Tools	2.1 GSM Cutters 2.2 Screw drivers 2.3 Tweezers

	2.4 Allen key 2.5 Thread cutters.
3. Lubricant	3.1 Oil 3.2 Grease
4. Safety Guard	4.1 Motor guard 4.2 Belt guard
5. Machine parts	5. 1 Chassis 5. 2 Main feet 5. 3 Side feet 5. 4 Supporting ring 5.5 Needle cylinders 5. 6 Guide way 5. 7 Yarn carriers 5. 8 Cam box rings 5. 9 Yarn feed device 5. 10 Feeding the yarn 5. 11 Central machine axes 5. 12 Protective cover 5.14 Working platforms 5. 15 Upper steps 5. 16 Lowest steps 5. 17 Horizontal axes 5. 18 Safety railing 5. 19 Rollers 5. 20 Holding rods
6. Cylinder	6.1 Dia: 14"-60" 6.2 Dia: 10-32 Gauges.
7. Needle	7.1 Bo-141.52-001,002,003,004 7.2 Bo-61-48,001,002, 7.3 74.05-001,002 7.4 Bata. 61.48-001
8. Yarn	8.1 100% Cotton 8.2 PC blended (Polyester & Cotton) 8.3 VC blended (Viscose Cotton) 8.4 TC (Teton, Cotton) 8.5 CVC ( Chief value cotton) 8.6 100% Polyester 8.7 Mélange

**Evidence guide:**

1. Critical aspects of competency	<ul style="list-style-type: none"> <li>1.1. Checked Lubricant and adjust machine parts.</li> <li>1.2 Collected job card.</li> <li>1.3. Collected yarn package.</li> <li>1.4. Removed dust from every place.</li> <li>1.5. Checked Needle, Sinker, Cam box &amp; Meminger positive feeder.</li> </ul>
2. Underpinning knowledge	<ul style="list-style-type: none"> <li>2.1. Various types tools &amp; materials.</li> <li>2.2 Parts of circular knitting Machine</li> <li>2.3 Job card information's.</li> <li>2.4. Needle, Sinker, Cam size.</li> <li>2.5. Yarn quality.</li> <li>2.6 Selection of Yarn &amp; Yarn Package</li> <li>2.7. Yarn Count &amp; lot No.</li> </ul>
3. Underpinning skills	<ul style="list-style-type: none"> <li>3.1. Removing dust.</li> <li>3.2. Checking Needle, Sinker and Cam.</li> <li>3.3 Creeping</li> <li>3.4 Wheel pre-position</li> <li>3.5 Stop motion device</li> <li>3.6 Reading basic instructions in specification sheet</li> <li>3.7 Using Safety guard and following safety procedure</li> </ul>
4. Underpinning Attitude	<ul style="list-style-type: none"> <li>4.1 Commitment to occupational health and safety</li> <li>4.2 Environmental concerns</li> <li>4.3 Eagerness to learn</li> <li>4.4 Tidiness and timeliness</li> <li>4.5 Respect for rights of peers and seniors in workplace</li> </ul>
5. Resource implications	<p>The following resources should be provided</p> <ul style="list-style-type: none"> <li>5.1. Tools, equipment and facilities appropriate to processes.</li> <li>5.2. Materials relevant to the proposed activity</li> <li>5.3 Instruction sheets</li> <li>5.4. Suitable workplace</li> </ul>
6. Methods of assessment	<ul style="list-style-type: none"> <li>6.1. Oral question</li> <li>6.2. Direct observation</li> <li>6.3 Assignment</li> <li>6.4 Demonstration</li> <li>6.5 Written Exam.</li> </ul>

	6.6 Practical Exam
7. Context for assessment	For certification competency must be assessed individually in the actual workplace or simulate environment in the after completion of the module.
<b>Accreditation Requirements</b>	
<p>Training providers must be accredited by Bangladesh Technical Education Board (BTEB) , the national quality assurance body, or a body with delegated authority for quality assurance to conduct training and assessment against this unit of competency for credit towards the award of any national qualification.</p> <p>Accredited providers assessing against this unit of competency must meet the quality assurance requirements set by BTEB.</p>	

Unit of Competency	<b>Operate Single Jersey Circular Knitting Machine</b>
Unit Code	RMGCKMO 0102
Unit Descriptor	This unit covers the skill, knowledge and attitude required to operate Single Jersey circular knitting machine. It includes checking, adjusting, wrapping fabric, knotting yarn and operating circular knitting machine.
Nominal Hours	52 Hours

<b>Element</b>	<b>Performance Criteria</b> Bold italicized words are detailed in the Range of Variables
1. Collect tools and materials	1.1 <b>PPE</b> are Collected and used. 1.2 <b>Tools, Equipment</b> and materials are selected and collected.
2. Set Machine	2.1 Machine is cleaned. 2.2 <b>Lubricant</b> is checked as required. 2.3 <b>Motion devices</b> are checked as required. 2.4 <b>Machine parts</b> are checked and adjusted as required.
3. Yarn Creeping	3.1 <b>Yarn</b> is collected as requirement. 3.2 Yarn is inserted into the <b>needle</b> hook accurately. 3.3 Yarn tension is checked and reported to the feeder. 3.4 Loop length is set as required.
4. Knit Fabrics	4.1 Machine is started on slow motion by inch <b>switch</b> . 4.2 Machine is started on full motion by green button. 4.3 Machine is stopped using red button. 4.4 Cloth roller is set on take-up/take-down device. 4.5 Fabric is wrapped on cloth roller. 4.6 Broken yarn is identified and knotted. 4.7 Broken sinker and needle changed properly. 4.8 Quality is checked & reported.
5. Clean the work place	5.1 Tools and equipment are cleaned. 5.2 Machines and work place are cleaned. 5.3 Waste materials are collected and disposed.

**Range of Variables**

<b>Variable</b>	<b>Range</b> (Included but not limited to):
1. PPE	1.1 Mask 1.2 Apron 1.3 Scarf 1.4 Rubber shoes
2. Tools and Equipment	2.1 Sample Cutter 2.2 Yarn Guide 2.3 Yarn Feeder 2.4 Yarn Tension Meter 2.5 Needle Sensor 2.6 Tape Tensioner 2.7 Industrial Weight Scales 2.8 Fabric Roller 2.9 Duster Gun 2.10 Tweezers 2.11 GSM cutter 2.12 GSM balance
3. Lubricant	3.1 Machine oil (Water soluble) 3.2 Lubricating oil. 3.3 Grease
4. Motion Device (Lamp)	4.1- Indicator lamp. 4.2- Single lamp (Green, yellow and red)
5. Machine parts	5. 1. Chassis 5. 2. Main foot 5. 3. Side foot 5. 4. Supporting ring 5.5 Needle cylinder 5. 6. Guide way 5. 7. Yarn carrier 5. 8. Cam box ring 5. 9. Yarn feed device 5. 10. Central machine axis 5. 11. Protective cover 5.12. Working platform 5. 13. Upper step 5. 14. Lowest step 5. 15. Horizontal axis 5. 16. Safety railing 5. 17. Roller 5. 18. Holding rods  5.19 Sinker 5.20 Needle
6. Yarn	6.1 100% Cotton  6.2 PC blended (Polyester & Cotton)



	6.3 VC blended (Viscose Cotton) 6.4 TC (Teton, Cotton) 6.5 CVC ( Chief value cotton) 6.6 100% Polyester 6.7 Mélange
7. Needle	7.1 Bo-141.52-001,002,003,004 7.2 Bo-61-48,001,002, Dual 7.3 74.05-001,002 7.4 Bata. 61.48-001
8.Switch	8.1 Inching switch (Yellow) 8.2 Fast switch (Green) 8.3 Emergency switch (Red)

### Evidence Guide

1. Critical aspects of competency	Assessment requires evidence that the candidate: <ul style="list-style-type: none"> <li>1.1 Checked lubricant and adjusted machine parts properly</li> <li>1.2 Checked and adjusted Tension and loop length Knotted yarn properly.</li> <li>1.3 Pushed the switch as necessary.</li> <li>1.4 Knotted broken yarn</li> <li>1.5 Changed damaged sinker and needle.</li> </ul>
2. Underpinning knowledge	<ul style="list-style-type: none"> <li>2.1 Types of tools, equipment &amp; materials.</li> <li>2.2 Importance of lubricant &amp; yarn tension.</li> <li>2.3 Safety procedures in operating Circular knitting Machine.</li> <li>2.4 Knocking Over</li> <li>2.6 Cleaning</li> <li>2.7 Yarn feeding</li> </ul>
3. Underpinning skills	<ul style="list-style-type: none"> <li>3.1 Switch starting</li> <li>3.2 Creel procedure</li> <li>3.3 Controlling Machine speed</li> <li>3.4 Knotting yarn</li> <li>3.5 Wrapping fabric</li> <li>3.6 Filling oil</li> <li>3.7 Cleaning</li> <li>3.8 Yarn feeding</li> </ul>

	3.9 Changing of damage needle & sinker properly
4. Underpinning Attitude	4.1 Commitment to occupational health and safety 4.2 Environmental concerns 4.3 Eagerness to learn 4.4 Tidiness and timeliness 4.5 Respect for rights of peers and seniors in workplace
5. Resource implications	The following resources MUST be provided 5.1. Tools, equipment and facilities appropriate to processes 5.2. Materials relevant to the proposed activity 5.3. Suitable workplace & instruction sheets
6. Methods of assessment	6.1. Oral question 6.2. Direct observation 6.3 Assignment 6.4 Demonstration 6.5 Written Exam. 6.6 Practical Exam
7. Context for assessment	For certification competency should be assessed individually in the actual workplace or simulate in the after completion of the work.
<p><b>Accreditation Requirements</b></p> <p>Training providers must be accredited by Bangladesh Technical Education Board (BTEB), the national quality assurance body, or a body with delegated authority for quality assurance to conduct training and assessment against this unit of competency for credit towards the award of any national qualification.</p> <p>Accredited providers assessing against this unit of competency must meet the quality assurance requirements set by BTEB.</p>	

Unit of Competency	<b>Operate Double Jersey (Interlock) Circular Knitting Machine</b>
Unit Code	RMGCKMO 0103
Unit Descriptor	This unit covers the skill, knowledge and attitude required to operate Double Jersey circular knitting machine. It includes checking, adjusting, wrapping fabric, knotting yarn and operating circular knitting machine.
Nominal Hours	62 Hours

<b>Element</b>	<b>Performance Criteria</b> Bold italicized words are detailed in the Range of Variables
1. Collect tools and materials	1.1 <b>PPE</b> are Collected and used. 1.2 <b>Tools Equipment</b> and materials are selected and collected 1.3 Materials are arranged.
2. Set Machine	2.1 Machine is cleaned thoroughly. 2.2 <b>Lubricant</b> is checked as per standard. 2.3 <b>Motion devices</b> are checked as per standard. 2.4 <b>Machine parts</b> are checked and adjusted as required.
3. Yarn Creeping	3.1 <b>Yarn</b> is collected according to requirement. 3.2 Yarn is inserted into the <b>needle</b> hook. 3.3 Yarn tension are checked. 3.4 Yarn tension devices are checked and reported. 3.5 Loop length is set / adjusted.
4. Knit Fabrics	4.1 Machine is started on slow motion by inch <b>switch</b> . 4.2 Machine is started on full motion by green button. 4.3 Machine is stopped using red button. 4.4 Cloth roller is set on take-up/take-down device. 4.5 Fabric is wrapped on cloth roller. 4.6 Broken yarn is identified and knotted. 4.7 Broken sinker and needle changed properly. 4.8 Quality is checked & reported.
5. Clean the work place	5.1 Tools and equipment are cleaned. 5.2 Machines and work place are cleaned. 5.3 Waste materials are collected and disposed.

**Range of Variables**

<b>Variable</b>	<b>Range</b> (Included but not limited to):
1. PPE	1.1 Mask 1.2 Apron 1.3 Scarf 1.4 Rubber shoes
2. Tools and Equipment	2.1 Sample Cutter 2.2 Yarn Guide 2.3 Yarn Feeder 2.4 Yarn Tension Meter 2.5 Needle Sensor 2.6 Tape Tensioner 2.7 Industrial Weight Scales 2.8 Fabric Roller 2.9 Duster Gun 2.10 Tweezers 2.11 GSM cutter 2.12 GSM balance
3. Lubricant	3.1 Machine oil (Water soluble) 3.2 Lubricating oil. 3.3 Grease
4. Motion Device (Lamp)	4.1- Indicator lamp. 4.2- Single lamp (Green, yellow and red)
5. Machine parts	5. 1. Chassis 5. 2. Main foot 5. 3. Side foot 5. 4. Supporting ring 5.5 Needle cylinder 5. 6. Guide way 5. 7. Yarn carrier 5. 8. Cam box ring 5. 9. Yarn feed device 5. 10. Central machine axis 5. 11. Protective cover 5.12. Working platform 5. 13. Upper step 5. 14. Lowest step 5. 15. Horizontal axis 5. 16. Safety railing 5. 17. Roller 5. 18. Holding rods  5.19 Sinker 5.20 Needle
6. Yarn	6.1 100% Cotton

	6.2 PC blended (Polyester & Cotton) 6.3 VC blended (Viscose Cotton) 6.4 TC (Teton, Cotton) 6.5 CVC (Chief value cotton) 6.6 100% Polyester 6.7 Mélange
7. Needle	7.1 Bo-141.52-001,002,003,004 7.2 Bo-61-48,001,002, Dual 7.3 74.05-001,002 7.5 Bata. 61.48-001
8.Switch	8.1 Inching switch (Yellow) 8.2 Fast switch (Green) 8.3 Emergency switch (Red)

### Evidence Guide

1. Critical aspects of competency	Assessment requires evidence that the candidate: 1.6 Checked lubricant and adjusted machine parts properly 1.7 Checked and adjusted Tension and loop length Knotted yarn properly. 1.8 Pushed the switch as necessary. 1.9 Knotted broken yarn 1.10 Changed damaged sinker and needle.
2. Underpinning knowledge	2.5 Types of tools, equipment & materials. 2.6 Importance of lubricant & yarn tension. 2.7 Safety procedures in operating Circular knitting Machine. 2.8 Knocking Over 2.8 Cleaning 2.9 Yarn feeding
3. Underpinning skills	3.10 Switch starting 3.11 Creel procedure 3.12 Controlling Machine speed 3.13 Knotting yarn 3.14 Wrapping fabric 3.15 Filling oil 3.16 Cleaning

	<p>3.17 Yarn feeding</p> <p>3.18 Changing of damage needle &amp; sinker properly</p>
4. Underpinning Attitude	<p>4.1 Commitment to occupational health and safety</p> <p>4.2 Environmental concerns</p> <p>4.3 Eagerness to learn</p> <p>4.4 Tidiness and timeliness</p> <p>4.5 Respect for rights of peers and seniors in workplace</p>
5. Resource implications	<p>The following resources MUST be provided</p> <p>5.1. Tools, equipment and facilities appropriate to processes</p> <p>5.2. Materials relevant to the proposed activity</p> <p>5.3. Suitable workplace &amp; instruction sheets</p>
6. Methods of assessment	<p>6.1. Oral question</p> <p>6.2. Direct observation</p> <p>6.3 Assignment</p> <p>6.4 Demonstration</p> <p>6.5 Written Exam.</p> <p>6.6 Practical Exam</p>
7. Context for assessment	<p>For certification competency should be assessed individually in the actual workplace or simulate in the after completion of the work.</p>
<p><b>Accreditation Requirements</b></p> <p>Training providers must be accredited by Bangladesh Technical Education Board (BTEB), the national quality assurance body, or a body with delegated authority for quality assurance to conduct training and assessment against this unit of competency for credit towards the award of any national qualification.</p> <p>Accredited providers assessing against this unit of competency must meet the quality assurance requirements set by BTEB.</p>	

Unit of Competency	<b>Operate Flat Knitting Machine</b>
Unit Code	RMGCKMO 0104
Unit Descriptor	This unit covers the skill, knowledge and attitude required to operate Flat Knitting Machine. It includes checking, adjusting, wrapping fabric, knotting yarn and operating Flat Knitting machine.
Nominal Hours	52 Hours

<b>Element</b>	<b>Performance Criteria</b>
	Bold italicized words are detailed in the Range of Variables
1. Collect tools and materials	1.1 <b>PPE</b> are Collected and used. 1.2 <b>Tools, Equipment</b> and materials are selected and collected 1.3 Materials are arranged.
2. Set Machine	2.1 <b>Machine</b> is cleaned. 2.2 <b>Lubricant</b> is checked. 2.3 <b>Machine parts</b> are checked and adjusted. 2.4 Knitting Chart is collected. 2.5 <b>Yarn</b> is collected and fixed. 2.6 Yarn tension are checked and adjusted.
3. Perform Knitting	3.1 <b>Needles</b> are assembled using <b>selector</b> . 3.2 Nose is assembled with machine head. 3.3 Yarn is adjusted on the nose. 3.4 Tension device is adjusted.
4. Knit fabrics	4.1 Machine head is run bidirectional using hand. 4.2 Guide is hanged with fabric with small weight. 4.3 Side-key is locked and keyed. 4.4 Broken yarn is identified and knotted 4.5 Quality is checked and <b>faults</b> are rectified. 4.6 Knitted pieces are tied in a bundle. 4.7 Knitted pieces are transferred for next operation.
5. Clean the work place	5.1 Cleaning tools and materials are collected. 5.2 Machines and place are cleaned. 5.3 Waste materials are collected and disposed.

**Range of Variables**

<b>Variable</b>	<b>Range</b>
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	(Include but not limited to):
1. PPE	1.1 Mask 1.2 Apron 1.3 Scarf
2. Tools and Equipment	2.1 Cutter 2.2 Sample Cutter 2.3 Screw driver 2.4 Needle transferor 2.5 Turf 2.6 Holder stick 2.7 Weight balance
3. Machine	3.1 Gauge (7-14) 3.2 Cylinders dia (40-80)
4. Lubricant	4.1 Machine oil (Water soluble) 4.2 Lubricating oil. 4.3 Grease
5. Machine parts	5.1 Nose 5.2 Nose Holder 5.3 Tension Key 5.4 Gausses 5.5 Guide 5.6 Tension post Assembly 5.7 Side key 5.8 Program device.
6. Yarn	6.1 Cotton 6.2 Wool 6.3 Acrylic 6.4 Ac/c (50/50) 6.5 Ac/wool (85/15)
7. Needle	7.1 Gauge(7-14)
8. Selector	8.1 1/1 ripe 8.2 2/2 ripe
9. Faults	9.1 Needle drop 9.2 Loop drop 9.3 Uneven loop 9.4 False loop 9.5 Drop selvage 9.6 Uneven measurement 9.7 Broken Needle

### Evidence Guide

1. Critical aspects of competency	Assessment requires evidence that the candidate: 1.1 Checked Lubricant and adjusted machine parts properly 1.2 Maintained Knitting Chart. 1.3 Checked Thread tension as per requirement.
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	<p>1.4 Assembled needles using selector.</p> <p>1.5 Adjusted Tension key.</p> <p>1.6 Checked Quality and rectified faults.</p>
2. Underpinning knowledge	<p>2.1 Types of tools, equipment &amp; materials.</p> <p>2.2 Parts of machine.</p> <p>2.3 Knitting Chart</p> <p>2.4 Quality and faults of Knitting fabric</p> <p>2.5 Pieces of Knitting fabric.</p> <p>2.6 Importance of lubricant, Weaving Thread tension &amp; Needle Sharpness.</p> <p>2.7 Safety Procedures</p> <p>2.8 Needle Setting, suitability of setting operation</p>
3. Underpinning skills	<p>3.1 Reading instructions sheet(chart)</p> <p>3.2 Cleaning and Lubricating Machine.</p> <p>3.3 Checking and Adjusting Machine parts.</p> <p>3.4 Checking Thread tension.</p> <p>3.5 Assembling Needles.</p> <p>3.6 Adjusting Yarn on the nose.</p> <p>3.7 Assembling Nose on machine head</p> <p>3.8 Adjusting Tension key.</p> <p>3.9 Running Machine head bidirectional using hand.</p> <p>3.10 Lock and keying Side-key of machine</p> <p>3.11 Controlling machine speed</p> <p>3.12 Using Safety guard and following safety procedure</p>
4. Underpinning Attitude	<p>4.1 Commitment to occupational health and safety</p> <p>4.2 Environmental concerns</p> <p>4.3 Eagerness to learn</p> <p>4.4 Tidiness and timeliness</p> <p>4.5 Respect for rights of peers and seniors in workplace</p>
5. Resource implications	<p>The following resources should be provided:</p> <p>5.1 Work shop facility</p> <p>5.2 Flat knitting machine</p> <p>5.3 Tools , equipment</p> <p>5.4 Various types of Fabrics</p>

	<p>5.5 Threads</p> <p>5.6 Sewing materials</p> <p>5.7 Instruction sheet</p> <p>5.8 Module</p>
6. Methods of assessment	<p>6.1. Oral question</p> <p>6.2. Direct observation</p> <p>6.3 Assignment</p> <p>6.4 Demonstration</p> <p>6.5 Written Exam.</p> <p>6.6 Portfolio</p> <p>6.7 Practical Exam</p>
7. Context for assessment	For certification competency must be assessed individually in the actual workplace or simulate environment in the after completion of the module.
<p><b>Accreditation Requirements</b></p> <p>Training providers must be accredited by Bangladesh Technical Education Board (BTEB), the national quality assurance body, or a body with delegated authority for quality assurance to conduct training and assessment against this unit of competency for credit towards the award of any national qualification.</p> <p>Accredited providers assessing against this unit of competency must meet the quality assurance requirements set by BTEB.</p>	

## Annexes

### Annex 1. Competency Map for Circular Knitting Machine Operation

<b>OCCUPATION SPECIFIC COMPETENCIES</b>	Prepare circular knitting machine	Operate Single Jersey Circular Knitting Machine	Operate Double Jersey ( Interlock) Circular Knitting Machine	Operate flat knitting machine	Operate Jacquard knitting machine
	1	1	1	1	2
	Operate stripe Knitting machine	Monitor Production Process of Circular Knitting Machine	Perform minor maintenance		
<b>SECTOR SPECIFIC COMPETENCIES</b>	Work in the RMG sector	Use hand tools and power tools for the RMG sector	Interpret drawings and specifications in manuals for RMG sector	Perform measurement and calculation	
	2	2	2	2	
	1	1	2	2	

<b>GENERIC COMPETENCIES</b>	Communicate in the workplace	Work in a Team Environment	Practice workplace cleanliness	Practice occupational health and safety	
	1	1	1	1	

## Annex 2. Bangladesh National Qualifications Framework

TVQF Level	Education Type			Current Qualification Structure	Job Classification
	Pre-Voc	VE	TE		
<b>TVQF 6</b>			Diploma	4-year Diploma	Supervisor/Middle Manager/Sub-Assistant Engineer
<b>TVQF 5</b>		**NSC-V		NSS Master	Highly-Skilled Worker/Supervisor
<b>TVQF 4</b>		**NSC-IV		NSS 1/HSC (Voc) Year 11/12	Skilled Worker
<b>TVQF 3</b>		**NSC-III		NSS 2/SSC (Voc) Year 10	Semi-Skilled Worker
<b>TVQF 2</b>		**NSC-II		NSS 3/SSC (Voc) Year 9	Basic Skilled Worker
<b>TVQF 1</b>		**NSC-I		NSS Basic/Basic Trade Course	Basic Worker
<b>Pre-Voc 2</b>	*NPVC-II			None	Pre-Vocational Trainee
<b>Pre-Voc 1</b>	*NPVC-I			None	Pre-Vocational Trainee

\*NPVC – National Pre-Vocational Certificate

\*\*NSC – National Skill Certificate

**Annex 3. Qualification Level Descriptors**

<b>BTQ F Level</b>	<b>Knowledge</b>	<b>Skills</b>	<b>Responsibility</b>	<b>Job Class</b>
6	Comprehensive actual and theoretical knowledge within a specific study area with an awareness of the limits of that knowledge.	Specialised and restricted range of cognitive and practical skills required to provide leadership in the development of creative solutions to defined problems	Manage a team or teams in workplace activities where there is unpredictable change Identify and design learning programs to develop performance of team members	Supervisor/Middle-Level Manager/Sub Assistant Engineer
5	Very broad knowledge of the underlying, concepts, principles, and processes in a specific study area	Very broad range of cognitive and practical skills required to generate solutions to specific problems in one or more study areas.	Take overall responsibility for completion of tasks in work or study Apply past experiences in solving similar problems	Highly Skilled Worker/Supervisor (NSC 4)
4	Broad knowledge of the underlying, concepts, principles, and processes in a specific study area	Range of cognitive and practical skills required to accomplish tasks and solve problems by selecting and applying the full range of methods, tools, materials and information	Take responsibility, within reason, for completion of tasks in work or study Apply past experiences in solving similar problems	Skilled Worker
3	Moderately broad knowledge in a specific study area.	Basic cognitive and practical skills required to use relevant information in order to carry out tasks and to solve routine problems using simple rules and tools	Work or study under supervision with some autonomy	Semi Skilled worker
2	Basic underpinning knowledge in a specific study area.	Basic skills required to carry out simple tasks	Work or study under indirect supervision in a structured context	Medium Skilled Worker
1	Elementary understanding of the underpinning knowledge in a specific study area.	Limited range of skills required to carry out simple tasks	Work or study under direct supervision in a structured context	Basic Skilled Worker
Pre-Voc 2	Limited general knowledge	Very limited range of skills and use of tools required to carry out simple tasks	Work or study under direct supervision in a well-defined, structured context.	Pre-Vocation Trainee (NPVC 2)
Pre-Voc 1	Extremely limited general knowledge	Minimal range of skills required to carry out simple tasks	Simple work or study exercises, under direct supervision in a clear, well defined structured context	Pre-Vocation Trainee (NPVC 1)

**Annex 4. Key for Coding**

Code	Description
GN	Generic Competencies
Occupational Sector	
RMG	Ready-Made Garments
LEG	Light Engineering
CON	Construction
INF	Informal Sector
Occupation	
SMO	Sewing Machine Operation

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