BASIC TEXTILE OPERATION

NTQF Level -I-

Learning Guide -56

Unit of Competence: Operate knitting machine

Module Title: Operating knitting machine

LG Code: **IND BTO1 M15 LO2-LG-56**

TTLM Code: **IND BTO1 M15 TTLM 09 19v1**

LO2: Check all safety precautions

Instruction Sheet	Learning Guide #-56

This learning guide is developed to provide you the necessary information regarding the following content coverage and topics –

- Checking safety switches and indicators as per the manual
- Checking protective covers as per the instruction.
- Checking the proper illumination of the working room lights
- Checking condition of floor as per the standard
- Confirming all safety precautions as per the instruction

This guide will also assist you to attain the learning outcome stated in the cover page.

Specifically, upon completion of this Learning Guide, you will be able to:

- Check safety switches and indicators as per the manual
- Check protective covers as per the instruction.
- Check the proper illumination of the working room lights
- Check condition of floor as per the standard
- Confirm all safety precautions as per the instruction

Learning Instructions:

1. Read the specific objectives of this Learning Guide **-56 -**
2. Follow the instructions described in number on page **–2-**
3. Read the information written in the “Information Sheets 1”, sheet 2, Sheet 3and sheet 4. on page
4. Accomplish the “Self-check 1”**, Self –check 2, Self –check 3 and Self- check 4 on page** respectively
5. Ask from your **trainer’s** the key to correction (key answers) or you can request your **trainer’s** to correct your work.
6. If you earned a satisfactory evaluation proceed to **“Information Sheet**”. However, if your rating is unsatisfactory, see your **trainer’s** for further instructions or go back to Learning Activity #1.
7. Submit your accomplished Self-check. This will form part of your training portfolio.

Information Sheet-1	Check safety switches and indicators as per the manual

1.1. Introduction

Safety relays are electromechanical switching devices designed to prevent failure in critical switching operations. Relays are designed to isolate circuits or control a high powered circuit using a low power signal. Simple relays contain a magnetic core wrapped in a wire coil, a movable armature attached to an iron yoke, and at least one set of contacts. When an electric current passes through the coil it generates a magnetic field that activates the armature, moving the contacts to make or break a connection.

Safety relays have coils and contacts that are designed to be positively driven. A positively driven contact system ensures that the normally open (NO) and normally closed (NC) contacts can never be simultaneously opened or closed, eliminating the potential for faulty operation. Some safety relays feature built-in monitoring equipment in order to detect faults before they occur.

These features make safety relays suitable for use in critical switching applications, such as an emergency machine stop. If a switch or relay fails to operate in one of these applications, mechanical or physical human damage could result

Fig. Safety rating

Safety ratings are unique specifications to consider when selecting a safety relay. As shown below, products may be rated as one of four categories or types as defined by the EN954-1 standard. Buyers must determine their application's safety needs in advance and select a product with at least the minimum determined rating. Higher safety ratings typically carry a higher cost.

1.1.1. Related Products & Services

- **Emergency stop switches:** are devices that users manipulate to initiate the complete shutdown of a machine, system, or process.
- **Intrinsic safety (IS) barriers:** are devices that limit the current, voltage, and total energy delivered to a sensor in a hazardous area or flammable environment in order to prevent an explosion.
- **Light curtains**: are photo electric transmitters that project infrared beams to a receiver. They are used to guard openings and work spaces in or around machinery. When an opaque object interrupts the infrared beam, a stop signal is sent to the hazardous process to protect personnel or equipment.
- **Mechanical safety interlock switches**: couple a moveable guard door with the power source of the hazard. When the guard door is opened, the power is isolated, ensuring that the machine does not pose a hazard while an operator requires access.
- **Noncontact safety interlock switches:** couple a moveable guard door with the power source of the hazard. For noncontact actuating interlock switches, the guard door is linked to the control circuit contacts via a magnetic or electronic field
- **Pressure-sensitive safety** edges and safety bumpers are machine safeguarding devices that sense changes in pressure
- **Safety mats are presence-sensing devices used to guard a floor area around a machine or robot**

The safety relay responds by opening its two output relays. This removes 24V from the coils of the two safety contactors whose contacts open and remove power to the motor.

Safety Interlock Switches: are a means of safeguarding that monitors the position of a guard or gate. You can use them to shut off power, control personnel access and prevent a machine from starting when the guard is open

An electronic circuit that prevents malfunction by sounding an alert or activating a trip circuit on a protective device

Dual channel devices: can accept two inputs and have two independent circuits per input. Dual channel relays continually operate even in the event of a single circuit failure, and can detect wiring faults and input failure.

Self-Check -1	Written Test

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. What is the difference between products with service? (10 point)

Note: **Satisfactory rating - 3 and above points** **Unsatisfactory - below 3 points**

Answer Sheet

Score = _____
Rating: _____

Name: _____ Date: _____

Short Answer Questions

1. ---

Information Sheet-2	Check protective covers as per the instruction

2.1. Introduction

Collective protection methods (sometimes referred to as 'passive') involve the use of equipment in a way that removes the risk of an individual falling from height, and do not rely on personal protection equipment (PPE) to ensure safety throughout the system-of-work process. Personal protective equipment may include items such as gloves, safety glasses and shoes, earplugs or muffs, hard hats, respirators, or coveralls, vests and full body suits.

Even when the label does not require chemical-resistant gloves, we recommend that you wear them when handling any pesticide. The different types of PPE are: face shields, gloves, goggles (including protective glasses), gowns, head covers, masks, respirators, and shoe covers.

2.2. Control measure when working at height

- Avoid working at height if possible.
- Use an existing safe place of work.
- Provide work equipment to prevent falls.
- Mitigate distance and consequences of a fall.
- Instruction and training and/or other means

Collective fall protection includes all manners of collective measures that provide fall protection when working at height. These include systems for fragile rooftops, skylights, walkways and ladders gantries and demarcation barrier

Self-Check -2	Written Test

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. What is meant by control measures? (10 points)

Note: **Satisfactory rating – 5 and above points** **Unsatisfactory - below 5 points**

Answer Sheet

Score = _____
Rating: _____

Name: _____ Date: _____

Short Answer Questions

1. ---

Information Sheet-3	Check the proper illumination of the working room lights

3.1. Introduction

The most likely cause is a tripped breaker. This can happen when the electrical circuit is overloaded, or a defective appliance or damaged cord short-circuits the system. Then, locate your circuit breaker panel, formerly known as your fuse box (often in the basement or garage, or in back of the house). Causes of a partial power outage include: A tripped circuit breaker. A blown fuse, A broken connector or wire at one of the service leads to your house

To reset the electrical breaker and turn power back on to your room, find the electrical panel usually near the utility room or in the garage. Find the breaker that is for your room. It may be marked “bedroom”. If the breakers are not labeled, it should be obvious as the tripped breaker won’t be in line with the rest. When you find the correct breaker, flip it all the way to OFF and then flip it back to ON. You should hear a click meaning it went from off to on. Go into your room and see if that has brought power back to the outlets and lights. If so, then that was all it was, just a tripped breaker.

Self-Check -3	Written Test

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. What is meant by proper illustration? (10 points)

Note: **Satisfactory rating - 8 and above points** **Unsatisfactory – below 8 points**

Answer Sheet

Score = _____
Rating: _____

Name: _____ Date: _____

Short Answer Questions

Information Sheet-4	Checking condition of floor as per the standard

Self-Check -4	Written Test

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

Note: **Satisfactory rating - 5 and above points** **Unsatisfactory - below 5 points**

Answer Sheet

Score = _____
Rating: _____

Name: _____ Date: _____

Short Answer Questions

Information Sheet-5	Confirm all safety precautions as per the instruction

Self-Check -5	Written Test

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

Note: **Satisfactory rating - 5 and above points** **Unsatisfactory - below 5 points**

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

Short Answer Questions

Operation Sheet 1	CONTENT-

Method of----------:

Step 1-

Step 2-

Step 3-

Step N

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LAP Test	Practical Demonstration

Name: _____ Date: _____

Time started: _____ Time finished: _____

Instructions: Given necessary templates, tools and materials you are required to perform the following tasks within --- hour.

Task 1.

Task 2.

Task N.

List of Reference Materials

1- BOOKS

2- WEB ADDRESSES (PUTTING LINKS)