

Participant Handbook

Sector
Textile Sector Skill Council

Sub-Sector
Spinning

Occupation
Spinning

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NSQF Level 4



Ring Frame Doffer

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Textile Sector Skill Council

Textile Sector Skill Council Contact Details:

Address: 15th Floor, Nirmal Tower
26, Barakhamba Road
New Delhi - 110 001

Email: info@texskill.in

Web: www.texskill.in

Phone: 011- 43536355 -7

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Shri Narendra Modi
Prime Minister of India

“ Skilling is building a better India. If we have to move India towards development then Skill Development should be our mission. ”





Certificate

COMPLIANCE TO QUALIFICATION PACK – NATIONAL OCCUPATIONAL STANDARDS

is hereby issued by the

TEXTILE SECTOR SKILL COUNCIL

for

SKILLING CONTENT : PARTICIPANT HANDBOOK

Complying to National Occupational Standards of
Job Role/ Qualification Pack: 'Ring Frame Doffer' OP No. 'TSC/Q 0202 ; NSQF Level 3'

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Dr. J.V. Rao
CEO
(Textile Sector Skill Council)



About this book

The Textile Skill Sector Council (TSC) is promoted by members associations of Confederation Indian Textile Industry (CITI) is one of the important sector skill council undertaking the skill development activities of spinning, weaving, processing and hand loom textile sectors requirements. National skill Development Corporation (NSDC) approved TSC for above sectors and also extends necessary funding support to skill development.

Ring frame doffer is one of the important category of workmen employed by spinning mills. Though the spinning sector predominantly under organized sector and has been following systematic method for training the workmen also the guidance of textile research association particularly SITRA for decades and recent decades IE division of SIMA. TSC has brought proper system as per the guide lines of NSDC for skill development. Any ring frame doffer adapting the work methods and processes specified in this book would be in a position to acquire the required skills on a fast track and give high productivity and improved quality.

TSC wishes all the ring frame doffers would be using this book to derive full advantage and make the dream of our Honourable Prime Minister “Skill in India” true.

This Participant Handbook is designed to enable training for the specific Qualification Pack (QP). Each National Occupational (NOS) is covered across Unit/s.

Key Learning Objectives for the specific NOS mark the beginning of the Unit/s for that NOS. The symbols used in this book are described below.

Key learning: It says about what you will able to do at the end of each module

Steps: Operations procedure were provided in sequent order (step by step)

Tips: Guide lines to understand the units easily

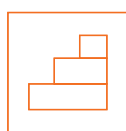
Notes: Space provided to reader for taking notes, observations, etc.

Unit Objectives: It says about what you will learn exactly from each unit

Symbols Used



Key Learning
Outcomes



Steps



Tips



Notes



Unit
Objectives



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GOVERNMENT OF INDIA
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& ENTREPRENEURSHIP



N S D C
National
Skill Development
Corporation

Transforming the skill landscape



1. Introduction

Unit 1.1 – The Textile industry and spinning sector in india

Unit 1.2 – Spinning

Unit 1.3 – Job role of a ring frame doffer



Key Learning Outcomes

At the end of this module, you will be able to:

1. Discuss the scenario of Indian textile industry and its sub-sectors
2. Discuss the process of ring spun yarn manufacturing
3. Define your roles and responsibilities

UNIT 1.1: The Textile industry and spinning sector in india

Unit Objective

At the end of this unit, you will be able to:

1. Discuss about contribution of textile industry in india
2. Learn about different segments in textile industry

1.1.1 The Textile Industry in India

Indian textile industry is more than 5000 years old, accounts 12% industry production, 14% earnings, 4% GDP and employ more than 500 million people across the nation particularly people below poverty line and women folks. In the pre-independence era, Indian Textile Industry was prevented from expanding by the British Rulers and they exported our human skills and began dominating in global textile trade. After independence, only the mechanized textile industry in the country started growing. The Industrial Liberalization policy helped the textile industry to increase the capacity rapidly. Now, the country is rich in both natural and man-made resources.

1.1.2 Different Segments in Textile Industry

Textile industry consists of different segments namely cotton cultivation, man-made & synthetic fibres manufacturing, other natural fibres manufacturing, ginning, spinning, weaving, knitting, processing, garment, made-ups, technical textiles, etc.

1.1.2.1 Cotton cultivation



Figure 1.1.2.1 Cotton cultivation

Cotton is the basic raw material (cotton fibre) to cotton textile industry. It is the most important fibre crop for the entire world. India is the world's third largest producer of cotton after China and the USA.

In India, the states of Maharashtra (30%), Gujarat (20%) and Andhra Pradesh (15%) and also Punjab, Haryana and Madhya Pradesh, are the leading cotton producing states, these states have a predominantly tropical wet and dry climate. Cotton in India provides direct income to 10 million farmers and about 50 million people employed in cotton trade and its processing.

1.1.2.2 Synthetic & Manmade fibres Manufacturing



Figure 1.1.2.2 Synthetic & Manmade fibres Manufacturing

Synthetic fibres are produced directly by the polymerisation of synthetic chemicals at present obtained as by-products of the petro-chemical industry: typical examples are nylon and polyester.

Example: Polyester, Nylon, Acrylic, etc

Manmade fibres are produced from naturally occurring material, mainly wood pulp or cotton lint, and the most commonly used example of this form of fibre is rayon.

Example: Viscose Rayon, Modal, Tencel or Lyocell

1.1.2.3 Spinning



Figure 1.1.2.3 Spinning machine

Spinning is the primary stage of textile product processing. The process of making yarns from the textile fibre is called spinning.

Spinning process is varying depending upon the fibre types. There are different methods for spinning yarn which is given in table below.

Table 1.1.2.3 Spinning process types

Fibre type	Spinning method	Type of yarn produced
Staple fibres (Cotton, Man-made & synthetic)	Ring spinning	Carded, Combed, Compact, etc
	Rotor spinning	Open end yarn
	Vortex spinning	Vortex yarn
	Airjet spinning	Airjet spun yarn
Polymer (Synthetic fibres)	Wet spinning	Filament yarn
	Dry spinning	Filament yarn
	Melt spinning	Filament yarn

1.1.2.4 Weaving

Weaving is described as inter-lacing, usually at right angles, of two sets of threads to form cloth or other types of woven textiles. Today this process is mostly automated for mass production.



Figure 1.1.2.4.1 Weaving machine

In it, two distinct sets of yarns called the warp and the weft are interlaced with each other to form a fabric. The lengthwise yarns, which run from the back to the front of the loom are called the warp. The crosswise yarns are the filling or weft. A loom is a device for holding the warp threads in place while the filling threads are woven through them.



Figure 1.1.2.4.2 Weaving demonstratio

1.1.2.5 Knitting

After weaving, the most prevalent method of fabric construction is knitting. The yarn in knitted fabrics follows a meandering path, forming symmetric loops or stitches.



Figure 1.1.2.5 Knitting machine

When the interlocking loops run lengthwise, each row is called a wale. A wale can be compared with the warp in weaving. When the loops run across the fabric, each row is called a course. A course corresponds to the filling, or weft.

There are two major varieties of knitting: weft knitting and warp knitting. In weft knitting, one continuous yarn forms courses across the fabric. In warp knitting, a series of yarns form wales in the lengthwise direction of the fabric.