]Lig-
a-
tures=TeX,Scale=1
[pro-
tru-
sion]basicmath
Gin-
width=,height=,keepaspectratio
same
hidelinks,
pdfcre-
ator=LaTeX
via
pan-
doc

3.3 Production

Overview:

In collaboration with Forbes Marshall Pvt. Ltd. we visited Renaissance Apparel Ltd. situated in Gazipur. There w

Heat treatment (optional): In some cases, the fabric may be subjected to heat during the compacting process to soften
Cooling: After compression, the fabric may pass through cooling chambers to reduce its temperature and stabilize its pr
Fabric winding: The compacted fabric is wound onto a roll or other suitable form for further processing or packaging.

Advantages:

Improved fabric properties: Compact machines can improve the dimensional stability, smoothness, and appearance of fa
Increased fabric density: The compression process increases the density of the fabric, making it more resistant to stretch
Enhanced fabric performance: Compact fabrics exhibit better resistance to pilling, wrinkling, and creasing, resulting in

Disadvantages:

Initial investment: Compact machines can be expensive to purchase and install, especially for larger or more advanced r
Energy consumption: The compression and heat treatment processes used in compacting machines require significant en
Maintenance: Regular maintenance is required to keep compacting machines in optimal working condition, including cle

3.3.5 Knitting Machine:

A knitting machine is a piece of textile manufacturing equipment used to produce knitted fabrics from yarn.

Description:

Knitting machines come in various types, including flatbed, circular, and warp knitting machines. They consist of a

Functionality:

Yarn Feeding: Yarn is fed into the machine from multiple feeders or cones, depending on the type of knitting machine.
Stitch Formation: Needles or hooks on the machine interlock the yarn to form loops or stitches, creating the fabric.
Fabric Formation: The carriage or cam system moves across the needle bed, manipulating the needles to form rows of st
Control: Knitting machines may have controls for adjusting stitch size, tension, and pattern to create different textures,

Advantages:

Versatility: Knitting machines can produce a wide range of fabrics, including jerseys, rib knits, and jacquards, with vari
Efficiency: Knitting machines can achieve high production speeds, making them suitable for mass production of knitted
Customization: Knitting machines offer flexibility in design and customization, allowing for the creation of unique and p

Disadvantages:

Complexity: Operating and maintaining knitting machines require specialized skills and knowledge. Troubleshooting an
Cost: Knitting machines can be expensive to purchase and maintain, especially advanced models with computerized con
Fabric Limitations: Knitting machines may have limitations in terms of fabric width, gauge, and complexity, restricting

[width=2.88125in,height=2.5in]figs/production/image5.jpg[width=3.49028in,height=2.5in]figs/production/image6.jp

Fig. 3.18: Knitting Machine. Fig. 3.19: Printing Machine.

3.3.6 Printing Machine: A screen printing machine, also known as a silk screen printing machine or serigraph m

Description:

A screen printing machine typically consists of the following main components:

Screen frame: A frame made of wood, aluminum, or steel, with a stretched mesh screen tightly attached.
Squeegee: A rubber or plastic blade used to push ink through the mesh screen onto the substrate.
Printing bed: The surface where the substrate is placed for printing.
Registration system: Guides or stops to ensure accurate alignment of the substrate for multiple-color printing.
Ink reservoir: A container for holding the printing ink, typically located above the screen frame.

Functionality:

Preparation: The design to be printed is first transferred onto a stencil or mesh screen using a photographic process or
Setup: The substrate is placed onto the printing bed, and the screen frame is positioned over it.
Ink application: Ink is poured onto the screen frame, and a squeegee is used to spread the ink evenly across the screen.
Printing: The squeegee is then pulled across the screen, forcing the ink through the mesh and onto the substrate, creati
Curing: After printing, the substrate may pass through a curing or drying process, typically involving heat or UV light,

Advantages:

Versatility: Screen printing machines can be used to print on textiles, paper, plastics, and more.
Durability: Screen-printed designs are highly durable and resistant to fading, making them suitable for outdoor use and
High-quality prints: Screen printing allows for precise control over ink thickness and color saturation, resulting in vibran
Cost-effectiveness: Screen printing is a cost-effective method for producing medium to large quantities of printed materi

Disadvantages:

Setup time: Setting up a screen printing machine can be time-consuming, especially for complex designs or multiple-colo
Limited color options: Screen printing is best suited for designs with fewer colors, as each color requires a separate scree
Not suitable for small runs: Screen printing is not cost-effective for small print runs due to setup costs and time.
Skill required: Achieving consistent and high-quality prints with screen printing requires skill and experience, particular