

CHAPTER  
**13**



12137CH13

# PRODUCTION AND QUALITY CONTROL IN THE GARMENT INDUSTRY

## LEARNING OBJECTIVES

After completing this chapter, the learner will be able to:

- understand the significance of mass production of apparel
- describe the stages and systems of mass production
- identify the fabric and garment defects before and after production
- understand the concept of Quality
- discuss career options in Garment Manufacturing Industry

## INTRODUCTION

Textile development and trade have been India's forte since centuries. The last few decades have also seen the growth and development of Clothing or Garment Industry. India's garment industry has achieved worldwide prominence as a source of clothing that combines the latest global fashion trends with exquisite designs, inspired from local culture. Globalisation has helped the trade in many ways.

*Garment Industry in India:* The Garment Industry of India is a ₹ One trillion industry. Overall about one fourth of the volume of garment

production in India goes into export markets, leaving three fourth for domestic consumption. The industry covers over one lakh units and employs about 60 lakh workers, both directly and indirectly in almost equal proportion. The indirect portion helps to sustain the direct production sector in the shape of items associated with the garment industry production, which includes sewing/embroidery threads, trims, machine parts, cardboard sheets, and packaging material. The organised sector of the garment industry is roughly 20 per cent of the total industry, concentrating chiefly on exports.

As the apparel industry is fashion driven and fashion keeps changing, manufacturing units have to cope with the changing trends. The consumers are now more aware and more demanding with the development of media like television and internet. They have more choices in quality, price and design. This is the reason why apparel chains all over the world are focussing more on improving the quality of the product and offering varied range of fashion designs.

*Importance of Mass Production:* Imagine trying to buy a shirt with no standard sizing. The consumer or wearer will have to be present at each purchase to try on different sizes of different brands to determine the best fitting piece for himself. Even within the same brand and same size, each piece would have an individual fit and sizing, making purchase extremely time consuming and difficult. Today, you can purchase a shirt anywhere across the world for which you need to know only the collar size (38/40/42 etc.) of the wearer.

World over, the trend of purchase of garments is shifting from customised clothing (tailor made) to readymade clothing. The business of fashion retail depends on volumes or quantities of goods. With standardisation of products and the increase in demand of global brands, the area of production in work and its study has gained importance.

The term *Production* generally refers to a process by which any product can be made in multiples using the same process and ensuring that each product made is identical in all respects. This is also referred to as '*Mass Production*'.

#### Did you know...

- *The concept of Mass production was first used to make uniforms for the American Civil war and then during World War I;*
- *The sewing machine was invented by Elias Howe in 1833. Issac Merrit Singer, an American engineer, created the first foot treadle*

- machine. Today his name is synonymous with sewing machines world over ;*
- *Before invention of the sewing machine, all garments were made completely by hand ;*
  - *Even today, the most expensive, customised tailoring has hand finishing of hemlines, facings, bindings and trims.*

## BASIC CONCEPTS

### Stages of Production

Apparel Production is generally done in four stages:

1. Procurement and Inspection of raw material
2. Laying and Cutting of fabric/material
3. Assembly of the product
4. Finishing and Packaging

Besides these, there may be an additional stage of 'Value Addition', which is a term used to indicate any process that adds to the total cost of the product and hence increases the value of the product. The addition is to enhance use and serviceability/functionality of the product and/or its aesthetic appeal. This includes special finishes to yarn and fabric (e.g., special washes to garments like sand wash or enzymes wash for denims) or surface ornamentation (e.g., prints, embroideries, etc.). This becomes specific to the product style and could be done before, during or after assembly of the product.

### 1. Procurement and Inspection of Raw Material

The process of apparel manufacture begins with the procurement of raw material and inspection or checking of the same. This includes the fabric and trims (zippers, buttons, interlinings, labels, tags etc.). Fabric inspection is done to find faults or defects in the fabric. Ideally 100 per cent of fabric received should be checked before it is cut. However, when the fabric is procured from a reliable source or when the fabric is certified as fault free by the fabric manufacturer, only representative sample quantities are checked.

Fabric defects can be classified on the basis of the source of the faults as :

- (a) Yarn faults
- (b) Weaving faults
- (c) Dyeing faults
- (d) Finishing faults

Some defects may arise due to a combination of the factors detailed above. Let us briefly examine some of these:

a) Defects arising from yarn faults

- Coarse end and fine end: Warp yarns having a larger diameter or smaller diameter than those normally being used in the fabric.
- Fuzz and Fuzz balls: Fuzz is the loose or frayed fibers originating from the yarns. These may form tiny balls and get woven into the fabric.
- Slub: An abruptly thickened location in a yarn characterised by softness in twist and more or less of short duration.

b) Defects arising from weaving faults

- Bar: Filling wise band across the full width characterised by a change in appearance from normal color or texture of finish.
- Barre': An unintentional, repetitive visual pattern of continuous bars and stripes usually parallel to the filling of woven fabric or to the course of circular knit fabric.
- Bias filling: The filling yarns or colour pattern not being at right angle to the warp yarns.
- Bowed filling: The filling yarns or the colour pattern having a curvature.
- Broken end: A warp yarn missing for a portion of its length.
- Float: Thread that extends unbound over the threads of the opposite yarn system with which it should normally be interlaced.
- Kink: A short length of yarn spontaneously doubled on itself. Also called curl, kinky thread, looped yarn, snarl.
- Misreed: A warp wise streak caused by improper spacing of the ends across the fabric.

- Smash: An area where the fabric has been ruptured by the simultaneous breaking of a large number of adjacent warp threads.
- c) Defects arising from dyeing faults
  - Colour run: The colour of one area has bled or superimposed on the colour of another area.
  - Shaded: The colour or bleach is not uniform from one location to another.
- d) Defects arising from finishing faults
  - Baggy: A fabric which will not lie flat on the cutting table.
  - Chafe: An area where the fabric has been damaged by abrasion or friction.
  - Cuts, tears, crease, wrinkle and curled selvedges.
  - Tentering marks: Enlarged pinholes or distorted areas along the edge of the fabric caused by the holding of the fabric to width during finishing. Also called pin marks.
  - Uneven finish: The finish is not uniform from one location to another.

#### Note for Teachers

Refer to [www.indiantextilejournal.com](http://www.indiantextilejournal.com) for pictures related to defects in the fabric.

#### Fabric Inspection and Testing

There are internationally accepted systems of fabric inspection which define the way the fabric is to be inspected and what constitutes an “OK” fabric. In all the systems, the fault or defect is assigned points based on its size, type, spread etc. The total points in a given linear length are then totalled and the fabric is ‘accepted’ or ‘rejected’. Some companies have customised their



**Fig. 13.1: Fabric Inspection Machine**

own system by adapting from existing systems according to their need and specialised fabric types. The acceptance criteria also depends on the final product (style, market, functionality, performance base, etc.) being made.

Other than this, certain tests are also conducted to test the suitability of the fabric for its end use. The tests may be standard tests done by any fabric manufacturer or may be specially requisitioned by the buyer of the end product. These tests include colour fastness (against light, moisture, perspiration, chlorine etc.), thread count, fabric weight, shrinkage, flame-retardant etc.

Once the defect and its extent are identified, the possibility of repair/rectification is checked. If the fabric can be rectified, it is sent for the selected process. If not, the fabric is rejected. Some faults may be accepted if the extent is not very high i.e. it does not affect a large area of the fabric. Sometimes the decision to accept defected fabric may be taken if the cost and/or time involved in the reprocessing of the fabric are too high to be absorbed by the cost of the order.

Fabric inspection is one of the most important steps in the process of production, as it defines the final quality of the product. The cost of raw material in any garment is about 70%, out of which 90% or above is that of the fabric. In case this process is not carried out properly, the cost factor of the fabric component in the garment would increase leading to less profits and, in some cases, losses.

#### Some Definitions

**EPI** — Ends per inch refers to the density of the fabric measured by the number of warp yarns in one inch of woven fabric.

**PPI** — Picks per inch refers to the density of the fabric measured by the number of weft yarns in one inch of woven fabric.

**GSM** — Grams per Square Metre refers to the density of knitted fabric measured by the weight of the given fabric.

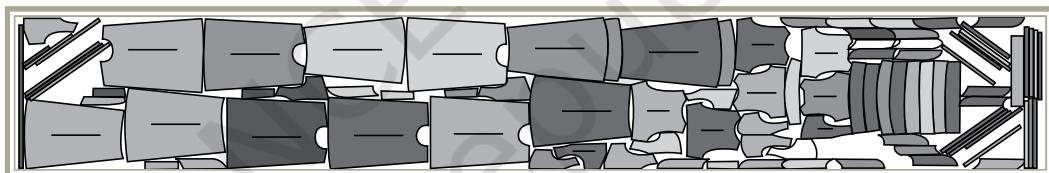
**Thread Count** — Number of warp and weft yarns in a square inch of woven fabric.

## 2. Laying and Cutting of Fabric/Material

The next stage in the production of garments is the planning and processing of the cutting of the fabric. This involves the following steps:

- a. *Marker plan:* A marker is defined as the placement of pattern pieces on fabric in such a manner that the consumption of fabric per garment is optimised. The first stage is to identify the number of pieces that make up the entire pattern of one unit of item. The planning of the marker defines the average consumption of the fabric per piece which ultimately affects the cost of the product.

The marker may be planned by manually placing pattern pieces on a defined width of the table and creating permutations till the most optimum length is achieved. This is very time consuming especially where the number of pattern pieces involved are high (such as in a formal jacket). There is also the problem of copying the marker so that it can be replicated for multiple lays. The more efficient technique of marker planning is by using specific computer software or CAD system. In this, the pattern pieces are fed into the system (digitised) and planning is done on a monitor. This technique is time efficient and eliminates most of the errors that are related to a manual plan. A printout of the final marker/s is taken for replication which ensures that the consumption of fabric per unit of product is maintained.



**Fig. 13.2: Marker Plan — the placement of the pattern pieces optimising the fabric usage**

- b. *Spreading:* Fabric is smoothened and spread along lengths of table in layers. The length of the layer is defined by the marker. The fabric layers are matched along one length edge and are equal in length. The fabric may be spread by hand or with the assistance of machines called Spreaders. These machines may be mechanically, electrically, electronically or computer operated. The final product of the spreading process is called a **lay**. The height of the lay will also affect and be affected by the cutting apparatus to be used. Care is taken during lay preparation that each lay consists of only one type of fabric.
- c. *Marking:* The patterns are traced on the top layer as per the defined marker. In some cases a computerised printout of the marker on a paper sheet of the same width as the fabric may be used as the cover to the lay. This then gets cut with the fabric layers.

- d. *Cutting:* The layers are cut simultaneously using machines that may be controlled either manually or through computer systems. There are different types of machines like the straight knife, round knife, band knife and die cutters. The height of the lay, i.e. number of layers in each lay, is dependant on the type of cutting apparatus as well as the dimensional stability of the fabric. Each type of cutting apparatus has its own merits and demerits — e.g., the straight knife machine is the most readily available and the cheapest of the mechanised cutting apparatus. However, it is not the best choice to cut knitted or stretch fabrics as it does not have the grip that can control the dimensional stability of such a fabric while cutting. The cutting apparatus used to cut a lay is usually mechanised. This is because scissors cannot cut through multiple layers with precision. Also the time and effort required in this is higher than may be possible in production.



**Straight Knife**



**Band Knife**



**Round Knife**

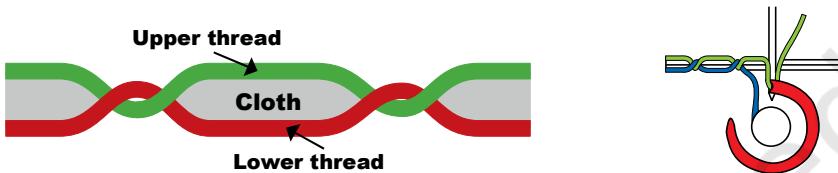
**Fig. 13.3: Types of Cutting Tools**

- e. *Bundling:* The cut pieces are bundled for further processes of stitching/embroidery/printing etc. The number of pieces in a bundle is dependent on the type of production system and the process sequence to be followed. The bundles may have all the components of a garment or only selected ones. Along with bundling, ticketing of the components is done which identifies the layer number within the lay. This is done to ensure that components of one garment are cut from the same layer of fabric.

### **3. Assembly of the Product**

The garment pieces are next sent to the assembly or stitching section comprising of different types of sewing machines. The sewing machines may be multipurpose, i.e they can be used for different types of operations

of sewing, or the machines may be specialised, i.e., they are used for specialised operations only. The more common of the first category of machines (multipurpose) is the Single Needle or Lockstitch Machine. It uses two threads to do the stitching, one which enters the fabric from the top through the needle and one which enters from the bottom through a bobbin. This machine can be used for any type of fabric and any kind of stitching operation. The lockstitch is reversible and a very stable, strong and inflexible stitch. It is also possible to work it in reverse direction to have a double stitching line.



**Fig. 13.4: Formation of the Lockstitch**

For stitching of knitted fabric, the machine used is the Chain Stitch machine. This stitch may use between 1–5 threads for formation. The lower thread comes through a hooked device called the looper. The looper may or may not have its own source of thread. The chain stitch is flexible and non-reversible by nature. It is predominantly used to accommodate stretch in the fabric being sewn. The commonly used type of this machine is the Over lock machine. This machine is used for all garments made from knitted fabric.



**Fig. 13.5: Formation of the Chain stitch**

#### ACTIVITY 1

Divide the class into groups. Each group of 4–5 students brings a garment (which does not have a lining) to class, preferably a T-shirt or shirt. Attempt to identify all seams and the stitch type for all seams.

*The process of assembly*, i.e., the way in which the multiple pieces of the garment are put together to make a complete garment, may use one or a combination of multiple production systems. Some of these are:

- a. Tailor system — Each operator or tailor assembles an entire garment. This system is used mainly in customised clothing — clothing made to fit and to the measurements of one individual. The operators

are extremely skilled and are capable of working on varied types of machines.

- b. Team working or module system — The garment is assembled by a group or team of operators. This is the most popular system in the garment manufacturing industry. Each team is a mix of skilled, semi skilled and unskilled workers and jobs are allocated according to skill level requirements of the assembly process.
- c. Unit production system — The garment assembly process is broken into smaller units called operations. Each operator is given one or more operations to do which need to be done on the same sewing machine. The piece is passed from one operator to the next operator in a predetermined pattern enabling the total assembly of the product. This system is used effectively in units with large manufacturing facilities or/and in garments which have many operations as also in manufacturing units which are catering to production of a single product. This system is dependant more on the training of the operator. Operators are trained on specific machines and in specific type of operations so that their individual productivity is high. The system does not work very well in small orders and for garments which have very few operations.

#### 4. Finishing and Packaging

The garments are finally sent for finishing and packaging. The **finishing** process includes final inspections, stain removal, repairs, ironing/pressing and folding. The pressing/ironing techniques would also define the final look of the garment (creases, folds, size of fold, etc.).

**Packaging** of garments can be done in many ways. Some garments are hanger packed (coats, jackets, suits, children's dresses etc), some are fold packed (shirts, t-shirts, track suits, etc.) and some are folded and then hanger packed (trousers). The type of packaging is dependent on the specifications of the buyer, the display techniques at point of sale, the bulk of the garment (volume of individual piece), the price of the garment etc. For exports, all the above detailed types of packaging may be used as specified by the buyer.

The *packing* of the garments differs from packaging. Packing is the process of preparing any product for dispatch from one place to another. The most common packing technique is the use of Cartons. A carton is made of layers of corrugated paper stuck together in a box shape (cube/cuboid). The size of the carton can be customised as per requirement, defining its length, width and height.

## Quality Assurance in the Garment Industry

Quality of the product is defined as its ‘fitness for use’. That means the requirement of the customer actually dictates whether any product is a quality product or not. The frequently used term ‘*Bad Quality*’, hence, does not exist as the term ‘Quality’ by itself defines the fitness of the product.

The quality of the product is ensured by —

- (a) Adopting proper procedure of work — defining the complete process of the product manufacture from raw material to finished goods and elaborating on operating procedures for each department.
- (b) Following the adopted procedure as defined above.
- (c) Selection and use of appropriate machinery.
- (d) Training of manpower — This is done at all levels, i.e., operators, supervisors and management — on machinery, maintenance, quality systems, production and the product.
- (e) Inspection of product at various stages of production — For this, crucial stages are selected.

There are no defined rules on the frequency and quantity of inspection. Companies tend to develop their own rules for the same. The important issue is that the final product should conform to the standards and specifications laid out for the product in question.

There are a few terms related to **Quality** which are important to understand. These are:

- **Quality Control** — process of problem solving with the purpose of getting a ‘Zero-Defect’ product.
- **Quality Assurance** — process of preventive problem management where the problem is pre-empted and the solution put in place so that the problem does not occur.
- **Quality Management** — process of implementation and monitoring of quality systems for example, **Total Quality Management (TQM)**, ISO, etc.
- **Specifications** — characteristics of the product that are given by the buyer or desired by the consumer, e.g., measurements. These may vary from buyer to buyer and product to product.

- **Standards** — characteristics of the product that are certified figures given by standardised and recognised international or national agencies that are mandatory to be followed, to produce a quality product. For example, colour fastness of a fabric/material etc.
- **Tolerance** — limits to which specifications or standards can be varied and would still be acceptable to the consumer/buyer.

**ACTIVITY 2**

Divide the class into groups. Each group of 4–5 students brings a customised/tailored product and a ready made product to class. The two products should be the same — shirt, pant, skirt or kurta and of similar fabric.

Identify five differences in the two products which are not related to design of the product (stitch type, seams, finishing, notions, assembly etc.).

## PREPARING FOR A CAREER

The field of garment production and quality control/assurance/management is a technical field. To enter and excel in this field, the primary requirements are:

- Knowledge of the product — This includes the understanding of all material that goes into making of the product.
- Working knowledge of the processes involved in making of the product.
- Working knowledge of the machinery requirements for the making of the product.
- Understanding of human resources and the ability to work with resources at all levels of work — workers, supervisors, managers etc.

There are courses that teach/train you for a career in garment production or/and quality assurance at all levels of qualifications. The period of the course varies with each qualification.

The most basic are Certificate programmes which are for a period of a few weeks to a few months. These are offered by numerous bodies, both

private as well as under the state/central government across the country. The next levels are Diploma programmes offered from a period of 1 year to 3 years. Degree programmes of 3–4 years are offered by selected institutes across the country. There are also engineering programmes that offer ‘Apparel Production’ as a specialisation choice.

The important things to remember in choosing a course of this nature are:

- (a) The institute should have a working facility and the course should have a practical perspective. Institutes in many towns and cities offer courses operating out of single rooms. These should be avoided.
- (b) The institute should have a working relationship with the concerned industry. These courses are best taught with the understanding of the industry.

## SCOPE

- Post qualification, the type of job you may pick depends on the type of qualification gained.
- At the initial level, one may become a quality inspector or a production supervisory assistant. Growth will depend on the individual’s capacity to learn and manage resources.
- There are also career avenues in shop floor management, production planning, quality assurance, industrial engineering, manpower training, enterprise resource planning etc. which would be commensurate with the qualifications of the individual.
- Jobs in the field can be found all over India and also in apparel manufacturing countries like Sri Lanka, Bangladesh, China, Indonesia, Vietnam and Egypt.

### KEY TERMS

Garment Industry, mass production, value addition, fabric inspection, marker plan, lay, sewing machines, assembly system, quality control, quality assurance, quality management

## REVIEW QUESTIONS

1. What do you understand by the term 'Mass Production'? What is its significance in today's economy?
2. What are the different stages of production in garment industry?
3. Discuss the importance of fabric inspection before processing.
4. What are the different types of sewing machines? How are they different from the point of view of stitch type and their use on different fabrics?
5. What are the levels at which inspection is required for quality assurance in garment industry?
6. What are the different production systems used in the industry?

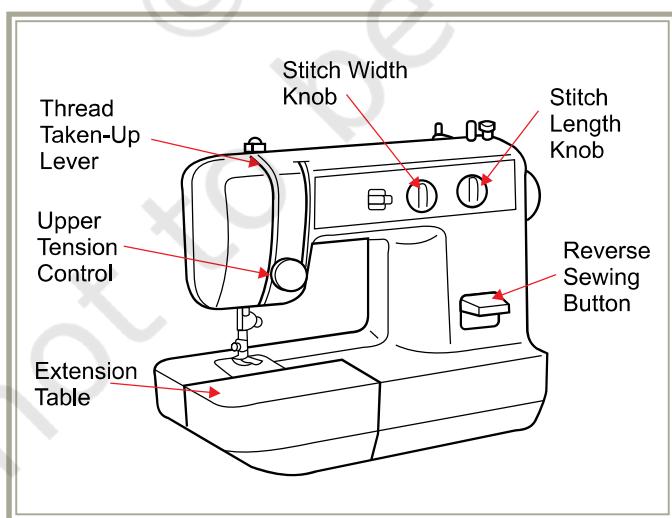
## PRACTICAL 1

**Theme:** Understanding Machine Stitching

**Task:** To learn the threading of a sewing machine, its functioning, and controlling tension and stitch size.

**Purpose:** This practical will help students to identify the quality of seams in terms of tension and size of stitch on different types of fabrics.

**Requirements:** a sewing machine, samples of fabrics of different fibre content and textures.



**Fig. 13.6: Parts of a Sewing Machine**

### **Conduct of the practical:**

1. Identify the parts of the Machine.
2. Thread the Machine:
  - a. Upper thread— from thread reel on spool pin – thread guide on the face plate – through the discs of tension regulator – through the thread take up lever – through thread guide into the needle hole.
  - b. Lower thread — fill up the bobbin – put it in the bobbin case – fix it in the shuttle – pull up the lower thread with the help of the upper thread.
3. Work the machine on different fabrics. Machining should be done on two layers of fabric. Make five samples of each fabric varying the upper tension and size of stitch. Observe each sample for:
  - i. Puckering at seam point when the sample is flat on the table
  - ii. Loose thread on the upper or lower side
  - iii. The kind of gaps, if any, when the two layers of fabric are pulled apart at seams.

## **PRACTICAL 2**

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**Theme:** Inspection of apparel product for Quality

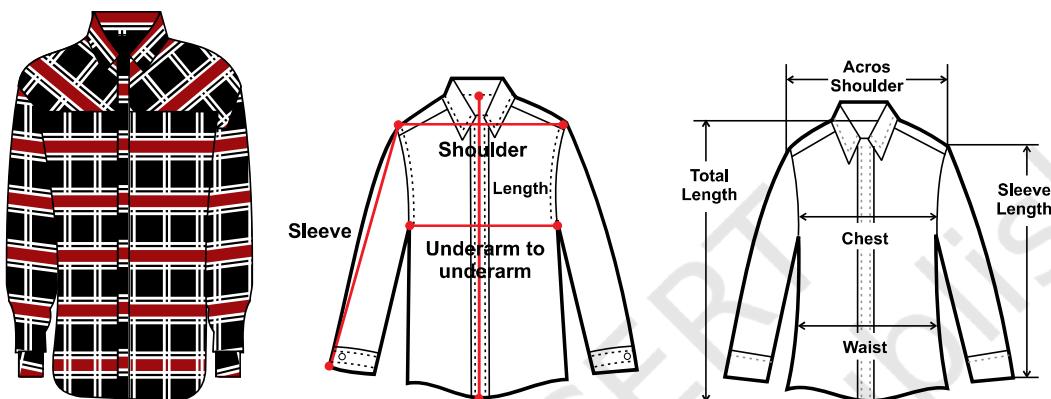
**Task:** To inspect a Men's Shirt for Quality of material, finished processes and measurements.

**Requirements:** A well ironed men's shirt, a flat table with adequate lighting, a measuring tape, a copy for noting observations.

### **Conducting the Practical**

1. Material inspection: Place the ironed, buttoned shirt flat on the table — first on its back, then on its front. Check carefully for any kind of fabric defects as discussed in the theory class. Apart from these there may be handling defects such as stains and dirt marks. Note all defects in a chart form and calculate how frequently they occur in front, back and sleeves. Also note the trims used in the garment— buttons, labels, tags etc. These should be visible, complete and securely attached.

2. Finished garment — Carefully examine all seams/stitch lines visible on the face of the garment. Note defects like difference in stitches per inch, broken stitches, difference in stitch tension, skipped stitches, puckering, uneven seams, seam wrong side out, waving in the seams/hems etc. Turn the shirt inside out and repeat the examination. Note the defects in a chart form.
3. Measurement check — Place the shirt flat on the table. Without pulling at the fabric measure the following in either inches or centimeters. (All measurements should be in the same unit.)



**Fig. 13.7: Measurement check**

- (a) Chest — Place the tape end at the lower end of the armhole and take it straight across to the other side of the shirt.
- (b) Front length — Measure from high shoulder point, down front body to bottom hem.
- (c) Across shoulder — Measure straight across shoulder from point to point (the shoulder point is where the shoulder seam meets the top of the armhole).
- (d) Center back length — Measure from centre of back neck seam down back body to bottom hem.
- (e) Sleeve length — Measure half of shoulder width starting at centre back neck, to the shoulder point, then along centre fold of sleeve to cuff edge.
- (f) Sleeve/cuff opening — Measure straight across bottom of sleeve from underarm side of cuff to centre fold of cuff.

- (g) Arms-eye — Measure from bottom of armhole to top of armhole following the contour of the armhole.
- (h) Neck width — Measure across from high shoulder point to high shoulder point at base of collar.
- (i) Neck depth (front and back) — Draw imaginary line from high shoulder point to the base of the neck separately for front and back.
- (j) Neck/collar circumference — Undo all buttons and lay collar flat, measure from centre of button to the farthest end of buttonhole.
- (k) Collar point — Lay collar flat, measure from base of collar to outer edge of collar point.

### PRACTICAL 3

**Theme:** Application of quality control techniques in garment industry: Notions/fasteners

**Task:** To make various samples of notions/fasteners

**Theory:** Notions or fasteners are used to close all openings in a garment. They provide good fit, space and easy wearing of a garment. A garment may have a concealed or an emphasised opening depending on the type of the garment. In a concealed opening the main purpose is to keep the closing flat and smooth. To achieve this, snap fasteners, hooks and eyes, flat buttons and zippers are used. Opening in a garment may be emphasised for decoration by decorative buttons of same or contrasting colours. The fasteners used should be made in such a way so as to close exactly and correctly or the garment will hang badly and hinder the fitting of the garment.

#### Purpose

1. To recognise different types of notions/fasteners
2. To understand the appropriateness of different notions for various garments
3. To learn the attachment of different notions.

**Press Buttons (Ball and Socket fastener):** These are put on areas with less stress, e.g., infant clothes, shoulder of blouses etc. A press button has two metallic or plastic discs one with a knob/ball while other with a socket, into which the knob fits. The disc with socket is placed on the under lap

and the disc with knob is stitched on the over lap. The press button is best stitched by making a loop in each stitch so as to give a button-hole stitch or by number of simple tacking stitches as shown in the fig. 13.8.

### Flat buttons and button holes

**Buttons:** Buttons are secured in places of nominal stress. A corresponding button hole is made to hold the button in position. Buttons are made of plastic or metals and may have two or four holes. The buttons are secured by marking. Work with sufficient number of strands and also completely fill the holes. If a thread shank is added, the button can be used to close heavy and bulky fabrics. The shank permits the closure to fasten smoothly and will keep the fabric from pulling unevenly around the button. The shank length should be equal to a garment thickness and the button hole plus one eighth inch for movement. Buttons with four holes can be sewed on in a number of interesting ways as shown in the fig. 13.8.

**Button hole:** The position and size of the button hole are of great importance. If the size is big a simple bar tacking as shown in the fig. 13.8 can bring the desirable change.

Normally, button holes are made by a sophisticated machine.

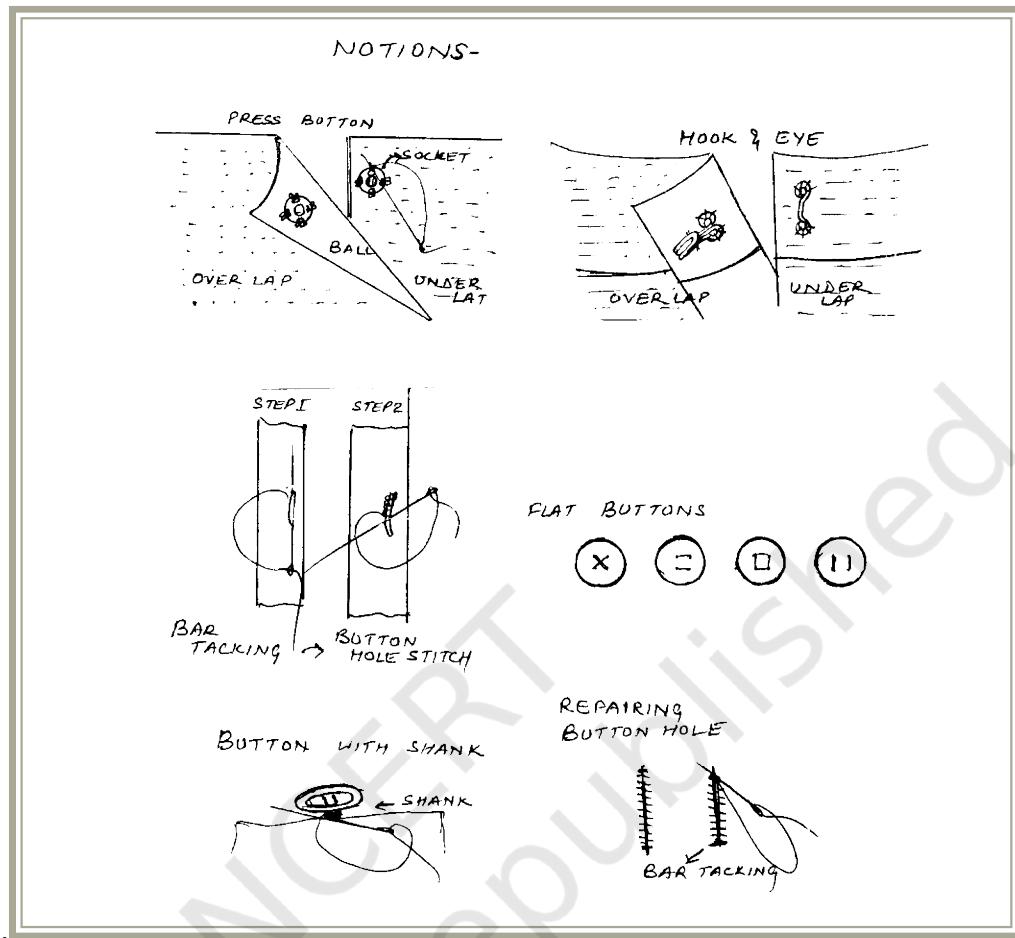
### Hook and Eye

**Hooks:** Hooks are made of metal. These are used in areas of strain to give the appropriate fitting to the garment such as sari blouse, skirt etc. Point is marked where hook is to be sewn. Hook is placed on this mark. The shank of the hook is sewn down by back stitch to hold it firmly. Finally button-hole stitch, or simple tacking stitches is done over the rings of the hook, as shown in the fig. 13.8.

**Eye/Loop:** These are used to fasten the hooks. It may be made of the metal or loop can be made with a thread. It is sewn/made directly opposite the hook. To sew the metallic eye place it directly opposite the hook and fix it by making button hole stitch at either ends. Loop may be made with the thread by making 4–5 neat back stitch, long enough for the hook to pass. Then work with simple button hole stitch to bind the threads together as shown in the fig. 13.8.

#### Note — Hooks and Eyes

Hooks should be sewn so that their ends are invisible from the right side. Loops or eyes should be made on the stitching line.



**Fig. 13.8: Samples of Notions/fasteners**

### Conducting the Practical

Following the above instructions on attaching the notions, make one sample each of press buttons, hook and eye and flat button and button hole.