

UNIT- 5

COMPUTERISED CUTTING MACHINES:

→ They are faster and more accurate in cutting fabric layers.

→ Parts of a cutting machine:

• cutting table	• cutting head	• Spreading table
• Carriage	• control cabinet	• cutting table.
• polyethylene sheet	• Height of lay	
• cutting process		

→ Functions of cutting machine:

→ cutting table:

→ cutting surface of table

- has nylon bristles [stiff hair]

- it is flexible.

→ This supports & keeps lay in place.

→ Flexibility of nylon bristles permits

- penetration of cutting blade.

→ These bristles allow air passage

- through table

- to create a vacuum.

→ Thus, created vacuum reduces height of lay

- holds fabric in place.

→ Carriage:

→ It supports cutting head.

* motors:
→ It has 2 fixed motors

→ It drives machine to and fro.

→ carriage moves on rail tracks.

→ rail tracks laid parallel on sides of table.

- 3rd motor places cutting head on table.
- These two movements are co-ordinated
 - to give position to knife
 - on any point of table.

→ cutting head:

- It consists of
 - knife
 - automatic sharpener
 - a motor.

* motor:

- motor rotates and positions the knife
 - to the line of cut on curves
- It adjusts the pressure on each side of blade.

* sharpener:

- It sharpens the cutting blade.
- It is performed at regular intervals.

* knife:

- A lift & push enables knife to bring
 - Sharp corners
 - V-shaped notches.

* motorised drill:

- It is behind the cutting head
- It provides drill holes when required.

→ Control cabinet:

- It consists of
 - computer
 - electrical components.
- Electrical components required
 - to drive
 - cutter
 - carriage
 - vacuum motor.

→ Spreading tables & cutting tables:

- cutting process takes less time than Spreading.
- Four spreading tables are supplied
 - with one cutting table.

→ Placing the lay on cutting table:

- The Spreader spreads lay on cutting table
- ~~+~~ Paper is spread below bottom ply.
- This paper helps movement of lay
 - onto cutting table
 - without any twisting.
- This also provides support
 - in bottom plies
 - during cutting process.
- This paper is perforated [hole]
- Vacuum enabling done by this perforation.

→ Polyethylene sheet:-

- It covers top of the lay.
- It assists, creation of vacuum.
- It allows useful compression of the key.

→ Height of the lay:-

- Different systems to cut
 - different heights
 - of compressed plies [fabric layer]
- The maximum height is 7.5 cm [compressed stage]

→ No. of plies depends on fabric thickness.

→ Cutting process:

→ Process of cutting follows sequential order.

Laying the spread

↓
cutting table

↓
loading disc in computer.

↓
cutting head receives information from computer.

↓
cuts lays into pattern pieces.

→ loading disc process:

→ After loading disc into computer

- operator positions cutting heads
- cutting heads origin light over table corner.
- It provides reference point with computer.

→ computer controlled knife:

→ computer controlled knife cuts

- according to instructions from computer
- rather than following pattern line drawn on marker.
- It is possible to remove printing of marker plan.

→ If needed, necessary information like

- name of pattern piece
- can be printed.

→ care:

→ Care must be taken to load correct disc.

→ This is because,

simple error leads to costly wastage.