Fancy Yarn

The Manufacturing
Manufacturing Techniques

• There are 4 techniques:
  i. Ring System/Ring
  ii. Hollow Spindle
  iii. Combined System
  iv. Chenille
Ring System:
For Loop Yarn- boucle’, snarl yarn

Fancy loop yarn involves:
- one or more ground yarn
- one or more effect yarns
- a binder (most cases)

Machine: Figure 7.3
Ring System
For Loop Yarn-boucle`, snarl yarn
• They are produced in two or more stages: each component has to be spun separately.

• The ground yarn and the effect yarn are then twisted together and followed by the final twisting which required binding.

• Ground and effect are twisted together to create the fancy effect
• Marl and spiral – does not involve binder

• Loops, boucle and snarl need binder and further twisting process
Explanation on Diagram 7.3 – Ring System

• 2 ground yarns fed at back rollers
• 1 effect yarn fed at the front rollers

They are fed at different speed

• The ground yarns are made to pass thru the grooves at the front roller instead of being nipped.

• Therefore the ground and effect converge in the twisting zone after they have emerge from the front rollers.
7.3 Feed system for loop yarn formation.
• The ground yarns are separated and form a triangle between the front rollers and the twisting point which they come together.

• Triangle provides the essential space in which the overfeed effect form the loops.
Effect of yarn construction depends on:

i. Overfeed ratio (ground yarn and effect yarn) around 200%

ii. Twist

iii. Groove spacing

iv. The properties and component of yarns

To produce good loop effect:

- effect yarn should be stable and low elastic

To change loop size:

- Change the spinning triangle and overfeed ratio.

(spinning triangle can be changed by altering spinning tension, twist level and top roller groove space)
When the twist level increase, the yarn twist torque will increase therefore spinning triangle decrease. But the yarn become harder.

To create snarl yarn: the effect yarn should have a relatively high level of twist. This will facilitate the formation of snarl.

(The overfeed ratio: 250%
Feed System for the knop yarn
Feed System for the knop yarn

• The ground is fed intermittently.

• The effect yarn and ground yarns converge below the control bar.

• The knop is formed when the ground stops while the effect yarn continues to be fed.

• A prominent bunch is formed on the yarn surface.

• The moveable control bar is to spread the knop over a desired yarn length.
Hollow Spindle System

• 1st developed: Inst. Of Clothing & Textiles in Bulgaria
• Replaced twist in a yarn by wrapping a filament binder around the material being used.
• To add the binder immediately after the effect is produced
• Advantages: using single passage machine
• Disadvantage: -no cohesion beyond that imparted by the binder. If the binder break the yarn separated.
• The machine was called off.
HOLLOW SPINDLE

7.5 Hollow spindle system.
Mechanism of Hollow spindle system:

4 independent feeding devices:
- 3 for effect yarns/fibers
- 1 for core yarn

Effect yarn is in the form of staple roving or sliver

The process:
- the drafted using roller drafting system that are similar to ring system
- Effect and core combine pass thru rotating hollow spindle
- bobbin mounted on hollow spindle and rotates with it
- the binder is pulled into the hollow spindle from the top
  - the rotation of hollow spindle wrap the binder around the effect and core
• Twist distributor
  the function: to avoid the drafted staple strand disintegrating before it is wrapped by binder by giving false twist

• to change the effect:
  i. controlling the feeding devices (core & effect)
  ii. Use fancy yarn
  iii. Controlling the final yarn delivery speed
Double Hollow Spindle
Double Hollow Spindle System

• 2 hollow spindles mounted on a series
• The process: different variety of resultant yarns and different range of benefits
• 2 binders are applied in opposite directions, this will produce a more stable structure. Effect yarns are trapped by 2 binders instead of one.
Combined Systems – Hollow Spindle + Ring Spindle

7.7 Combination of ring and hollow spindles.
Combined Systems – Hollow + Ring Spindle

• To unite the ring system in a single machine
• Original system: wrapped yarn is being given true twist by the ring spindle located beneath the hollow spindle

• The speed of hollow spindle and true twist by ring spindle able to create yarn that are less expensive than ring spun yarn but still retain some of the characteristics.
THANK YOU