

# Roving FAQ's

## 1. What is the need for roving frame in the ring spinning system?

Ans: In ring spinning system, conversion of sliver into yarn through a single step has not succeeded since the total draft needed is in the range 300-500 which is very difficult to apply on sliver in a single step and obtain good quality yarn. Sliver can occupy large space in comparison to the space of one spinning position of ring spinning frame, so there is need to have finer strand wound on smaller packages, which the roving operation satisfy. Sliver is a thick, untwisted strand that will lead to more hairs and fly while converting it directly to yarn when high draft is applied. In contrary, rovings are finer and twisted so the chances for generation of hairs and fly are less with roving operation.

## 2. What are the objectives of the roving operation?

Ans:

- Attenuation of the sliver
- Protective twist insertion.
- Winding the roving on a suitable package.
- Conversion of sliver to roving

## 3. What is the difference between the flyer lead and bobbin lead method of roving winding?

Ans:

In flyer Lead, flyer surface speed is faster and flyer winds the roving on the bobbins surface

In Bobbin Lead, bobbins surface speed is faster and bobbin winds the roving onto itself

## 4. Why bobbin lead method of roving winding is preferable than the flyer lead method for cotton?

Ans: With bobbin lead, in case of roving break, the direction of roving on the bobbins provides stable outer layer. The drive to the spindle is shortest hence it starts faster than the bobbins. This leads to more roving breaks in flyer lead while starting. For cotton system, because of the advantages of bobbin lead method and the difficulties associated with flyer lead method, the bobbin lead method is always used.

## 5. What are the functions of the builder motion in a roving machine?

Ans:

- The rotational rate of the bobbin should be reduced for layer formation
- Shorten the lift after each layer to form tapered ends on the bobbin
- Reverse the direction of movement of the bobbin rail after each layer formation
- The speed of the movement of the bobbin rail should be reduced after formation of every layer, as it will take more time to lay one coil as the bobbin builds up.

6. What are the differences in spinning conditions between front and back rows of spindles?

Ans:

- The angle of approach of the roving to the flyer top is different for the two rows. This will create different rolling conditions at the entry point of the roving to the flyer top.
- Both rows of spindles will have different spinning triangles
- Difference in the unsupported lengths, i.e the lengths between the drafting arrangement and the flyer top.
- Difference also occurs in twisting of roving which leads to variation in fineness between the front and rear ends.

7. What is the purpose in going for top mounted flyers?

Ans: Top mounted flyer allows automation of the doffing operation. The flyer is supported at top and driven by gear wheel running by toothed belts. Also, the top mounted flyers also enable to have constant angle of wrap and similar spinning triangles for the roving with the front delivery roller for both front and back rows of spindles. This is obtained by having longer extension sections on top of the back row of spindles.

8. What is the advantage in introducing false twist in the roving by the spindle top insert?

Ans: Spinning triangle is reduced so that quality of roving is improved. Fly and lap formation also reduced. False twist enables compact rovings which increases the bobbin capacity and leads to higher flyer speeds.

9. What is the roll of spacers in apron drafting system?

Ans: Pressure is applied by top aprons on the lower aprons and the distance between them decides the intensity of fibre clamping and fibre guidance. The apron arrangement must permit precise adaptation of the minimum distance to the fibre volume. It is done by placing "spacers" between the nose bar of the lower apron and the cradle edge of the top apron, i.e at the exit opening.

10. What is the function of pressure arm in roving frame flyer?

Ans: The pressure arm made up of steel yoke is attached to the lower end of the hollow flyer leg. It guides the roving from exit of the flyer leg to the package. The roving is wrapped two or three times around the yoke. No. of turns determines the roving tension and package hardness. If this is high, then a hard, compact package is obtained. If it is too high, false drafts or roving breaks may happen.