

On Circular Loom, the shuttle Bobbins rotate at 300 to 1200 picks per minute. When shuttle bobbin gets empty, the missing tape creates wastage in fabric. Sometimes the loose end of weft gets entangled with warp tapes, and all warp tapes are smashed, resulting in stoppage of loom for considerable time. To avoid smashing, the shuttle bobbins are changed even when they are not empty. However tape on these bobbins cannot be used and goes as wastage. If these bobbins are used in creel for warp tape, operator efficiency decreases and there will be more faults fabric.

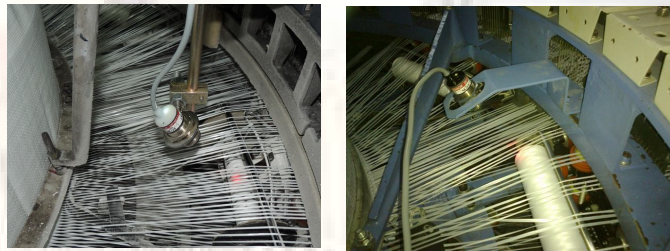
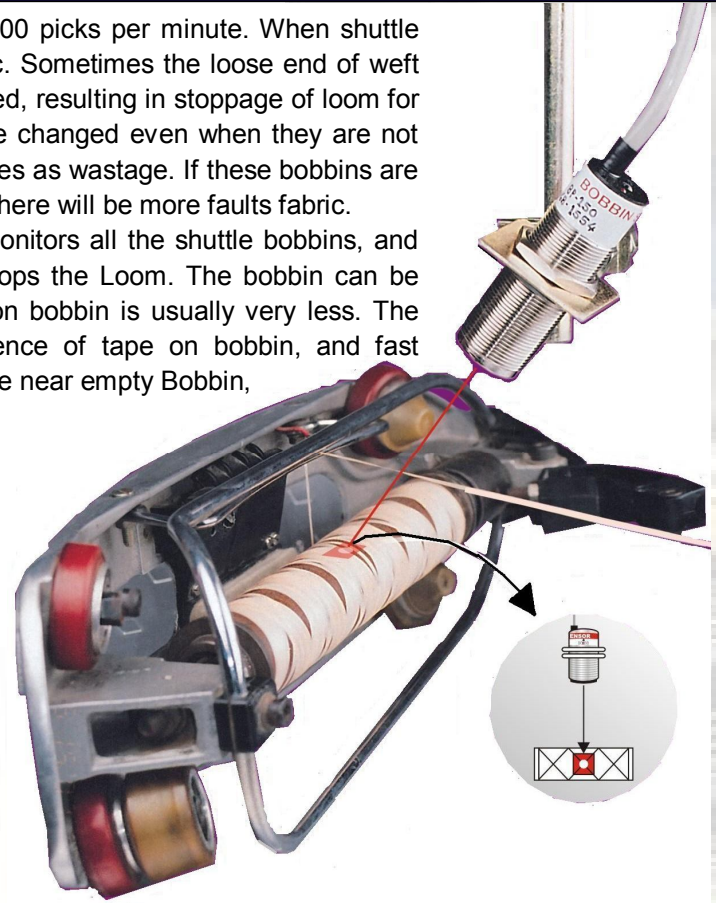
We have designed a bobbin sensor, which continuously monitors all the shuttle bobbins, and when any of the bobbins reaches near empty condition, it stops the Loom. The bobbin can be changed, thus avoiding fabric wastage. The tape remaining on bobbin is usually very less. The sensor is based on Infra Red principle to detect the presence of tape on bobbin, and fast microprocessor which calculates various timings and detects the near empty Bobbin, sends the trip signal to Relay PCB.

The Relay PCB stops the Loom by opening the NC / NO contact. The Relay PCB is similar for bobbin and weft sensor. For setting of sensor on Loom, a light beam of Red color is provided. The sensor should be set in such a manner, so that the light beam falls on center of bobbin. A white LED on sensor also helps in setting the sensor. When all the bobbins are detected by sensor, white LED stops flickering and lights up continuously. As the sensing mechanism is based on Infra Red principle, color of shuttle bobbin, tape and texture of empty bobbin may affect the performance of sensor. However, sensor will work faithfully on light colored tape and all black or dark mild steel bobbins. The sensor needs periodic cleaning of dust.

Bobbin sensor is also available in 24V DC for direct connectivity to loom Controller. Relay PCB is not required for this model. PNP and NPN output options are available.

Options

- **12V DC Regular sensor with Relay PCB suitable for any Loom**
- **24V DC PNP or NPN sensor for direct connection to Loom controller**



Mounting Arrangements



The Advantages of Bobbin Sensor for weft End

- As the bobbins are changed just before they are fully empty, there is no fault in fabric.
- The wastage of tape on shuttle bobbin is very low.
- The shuttle bobbins are never empty, hence there is no risk of loose weft end smashing warp tapes.
- Like other sensor, our bobbin sensor does not require additional proximity switch at the bottom of loom.
- The near empty shuttle bobbins need not be loaded on creel, hence creel bobbins can be of full size, reducing the number of loom stoppages.
- One operator can handle multiple looms, as he does not have to monitor the shuttle bobbins constantly.
- The efficiency of Loom increases and fabric of ZERO DEFECTS or minimum defects can be produced.
- The pay back of the bobbin sensor is fast due to more production, improved quality, less down time of the loom and reduced wastage.