



TARA Handloom Technology

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TARA Loom is an ingenious machine that incorporates many advanced features to improve the efficiency of the weaver and the quality of the woven fabric with existing levels of operational skills. The manually operated TARA Loom combines versatility with ease of operation. It is ergonomically designed so that it conforms to the traditional workmanship to produce more and better quality fabrics. It demonstrates that it is possible to combine high productivity, superior quality of fabric and ease of operation in one machine that can also use different yarns – cotton, wool, silk and synthetic.



Advantages

TARA Loom is an all-in-one machine which

- Operates without any vibrations at high speed (average 90 picks per minute)
- Weaves superior quality cloth of all yarns (cotton, wool, silk and synthetics).
- Uses both mill and hand spun yarn

These are available as standard equipment supplied by TARA with different sizes of looms, which can weave fabric ranging from a width of 40" to 120" (100 cms and 300 cms respectively). TARA Loom has found widespread acceptance among the weavers. Its productivity has been validated and is found to be at least 35% higher than any other loom. A traditional weaver can learn to operate this machine in less than two hours making the transition to the improved loom at no extra cost in terms of time and money.



That's the reason that TARA Loom is in operation in almost all the states on India.

Features

The extraordinary performance of the TARA Loom is made possible by the following innovative features:-

1. New take-up mechanisms

- Can weave fine fabrics of 90 picks per inch to coarse fabrics of 14 picks per inch without changing any gear. Pick spacing can be adjusted by simply shifting the position of the shield plate covering the ratchet by loosening a bolt.
- It is an integral unit requiring no special fixture



- It requires less effort because of low friction. All this was possible by redesigning the dimensions of the gears and ratchets to achieve a reduction of sufficient magnitude that could thus cover such a wide range of pick spacing. Connecting it to the shuttle box through appropriate linkages enhanced the throw of the driving pawl.

2. Fly-wheel

- Enables jerk free weaving
- Sustains high speed weaving
- Fixes the throw of the beater

This was possible by redesigning the flywheel to have just the right moment of inertia and eccentricity ratio. The same flywheel can be used for looms of reed space 40" to 78" simply by readjusting the position of the crank. Moreover, the flywheel shaft is also mounted on ball bearing.



3. Negative let-Off mechanism

- To ensure uniform let-off
- Even warp tension

To achieve a special ruffle was designed to provide uniformly distributed friction on the warp beam which made it possible to release the yarn by the same amount in every cycle instead of a jerky let off as in other looms.



4. Improved frame

- To ensure adequate support and rigidity to reduce vibration
- Ease of assembly and transportation
- Low cost
- Longer durability
- Compact and modular

For this, rolled MS angles are used in the structure of the frame such that there is no vibration. This makes it possible to weave better quality fabric.

The frame has been designed to take up less floor area and height. It can thus be fitted easily inside huts, especially in the hills, which have very low ceilings. The length of the loom is also less, so that the weavers can fix the broken



ends of yarns from the seat itself. With just two sets of spanners a complete loom can be assembled. This makes it possible to set up around 10 to 13 machines in 8 hours.



5. Emery and cloth roller

- These rollers are carefully positioned in the loom so that :
- It does not hit the weaver's knee during weaving

It can accommodate longer length of cloth on the roller (around 100 mts.) of fabric from 2/40s warp and 20s weft with pick spacing of 44 per inch.)

6. Smooth surface backrest and lease rods

- Ensures smooth friction-free movement of the yarn to improve the quality of the fabric
- Ensures proper working of the let-off mechanism
- Chrome plated pipe is used for the backrest and smooth metal sheet is fitted on wooden rods for the lease rod.

7. Beater

Since traditional technologies are time-tested, they have certain levels of perfection. The beater is a very good example of this, and the TARA loom uses the traditional beater design and material.

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