

TEXTILE

ELECTRONIC JACQUARD HANDLOOM

APPLICATION :

A wooden frame handloom equipped with Mechanical or Electronic Jacquard enables weavers to create fine Kora Grass Mats with diverse designs comfortably. Automatic Take-up and Let-off mechanisms ensure uninterrupted weaving, boosting productivity.

ORGANISATION/INSTITUTION

: RUTAG IIT MADRAS

TECHNOLOGY READINESS LEVEL

: Eleven looms have been distributed and are currently operational in Kerala and Tamil Nadu. These machines are running smoothly, demonstrating successful performance without any interruptions.

PRINCIPAL INVESTIGATORS

: Dr. S. Ganesan, Project Advisor for RuTAG

PROBLEM ADDRESSED :

The Weaver using the primitive Floor Loom or Handloom has to weave the “Fine Korai Grass Mat” sitting in an awkward posture with her leg held up by the hanging rope. To weave a design/motif a Weaver has to manually lift individual thread one by one (according to design) or manually lift the group of thread using wooden shaft and twine while inserting the korai weft.

ABOUT THE TECHNOLOGY :

A wooden frame handloom equipped with either a mechanical jacquard or electronic jacquard enables weavers to produce fine korai grass mats with a wide variety of designs while sitting comfortably. The handloom's auto take-up and let-off mechanism allow weavers to seamlessly continue their weaving operations without any interruptions, leading to enhanced productivity. Additionally, suitable arrangements are made under the loom to provide space for compacting operations, which are essential for improving the packing density of the mats. Using software, required motifs or designs of various origins such as geometric, plant, bird, animal, and human themes can be electronically developed in bitmap format and loaded onto the electronic jacquard control unit via a pen drive. The electronic jacquard mechanism manages thread selection and lifting according to the design during shed making through the foot pedal operation of the weaver, eliminating the need for specialized attention or expertise and resulting in a threefold increase in productivity.

SOCIAL IMPACT

300% rise in productivity for design mats (Mats taking 9 to 11 days now take 2 to 3 days). Weavers with basic weaving skills can weave any level of intricate designs. Ergonomically designed looms as well as value added products in addition to mats make the profession more lucrative to younger generation.

PRODUCT IMAGE



USP

- 192 hook Electronic Jacquard has been developed and installed in place of 120 hook mechanical jacquard developed earlier to enhance the design capability
- Electronic Jacquard facilitates easy storage and retrieval of designs in digital mode.
- The ergonomics of the Handloom is improved to facilitate comfortable sitting posture for the weaver enabling them to extend the working time by at least 25%.
- Seven-wheel take up mechanism employed to provide for auto take-up of woven mat.

END USERS/CUSTOMERS

Nine looms are operational in Veeravanallur and Pathamadai Mat Weavers Society, Tamil Nadu, with two more in Thrissur and Kilimangalam, Kerala, all functioning successfully.