

World's first knotless yarn splicing technology for spun yarns

Registration No.	Number 00390		
Registration Date	18 September 2025	Registration Category	Category 1

Name (Model, etc.)	Mach Corner No. 7- II with Mach Splicer G2Z-FB0-N1
Location	Fushimi-ku, Kyoto, Japan Head office, MURATA MACHINERY, LTD.
Owner (Custodian)	MURATA MACHINERY, LTD.
Manufacturer (Company)	MURATA MACHINERY, LTD.
Year Manufactured	1998 (Commemorating the achievement of one million units)
Year first appeared	1979
Reason For Selection	This item is related to the world's first knotless splicing for spun yarns. In conventional methods, yarns are mechanically tied, resulting in large knots with two protruding ends. Consequently, ring-spun yarns with frequent knots often caused fabric defects and led to increased machine stops, and the increase in the number of stops accompanying the acceleration of the fabric manufacturing process made it impractical. The invention of the splicer not only improved piecing quality, it also made an immeasurable contribution to ring spinning by enabling higher traveler rotation, reducing energy consumption, and enhancing the performance of yarn clearers (devices that detect yarn defects). Even today, it is extremely important as a global standard technology.
Registration Criteria	1-B (Shows a uniquely Japanese scientific or technological development from an international perspective.) 2-B (Made a notable contribution by facilitating an epoch-making advance in Japan's economy and place in the world.)

Open/Closed to the Public	Open to the Public
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Photos

Mach Splicer

Mach Corner (1 unit)

Package Winding cradle
Drum traverse

Lower yarn suction pipe (from bobbin)

Yarn clearer (yarn defect detection sensor)

Upper yarn suction mouth (from package)

Yarn tension regulator

Bobbin supply and empty bobbin ejection device

Illustrations of the Mach Splicer's Effectiveness

Without Mach Splicer (e.g., Fisherman's Knot)

With Mach Splicer