

Three Generations of Glove Knitting Machines Leading to the Development of WHOLEGARMENT® Technology

Registration No.	Number 00396		
Registration Date	September 29, 2026	Registration Category	Category 1

Name (Model, etc.)	Three Machines that Represent the Evolutionary Progress of Glove Knitting Technology in Japan (1) Continuous five-finger glove knitting machine with elastic yarn insertion device (2) Automated glove knitting machine (square fingertip type) (3) SFG® fully automatic seamless glove knitting machine
Location	Wakayama-shi, Wakayama SHIMA SEIKI Fusion Museum
Owner (Custodian)	SHIMA SEIKI MFG., LTD.
Manufacturer (Company)	(1) Continuous five-finger glove knitting machine: MORI SEIKI CO., LTD. (currently DMG MORI CO., LTD.) (1) Elastic yarn insertion device: Masahiro Shima (The founder of SHIMA SEIKI MFG., LTD.) (2), (3) SHIMA SEIKI MFG., LTD.
Year Manufactured	(1) 1955 [1948 (Continuous five-finger glove knitting machine), 1955 (Elastic yarn insertion device)] (2) 1964 (3) 1970
Reason For Selection	These items are three machines that represent important milestones in the history of knitting machines for a kind of work glove that is unique to Japan. The first machine (1) eliminated the sewing process for the glove body by enabling continuous knitting with the wrist portion as an integrated structure, while realizing quick and easy glove removal through the insertion of elastic yarn. The second machine (2) achieved full automation of key knitting operations, including control of needle selection, knitting width and position, sinker operation, and yarn changing. The third machine (3) featured individual needle selection that eliminated the need for sewing at the fingertips and between fingers, realizing seamless glove production. These three models are significant as the technological lineage of knitting machines that led not only to five-toe sock knitting machines but also to the development of the seam-free WHOLEGARMENT® flat knitting machine in 1995 thanks to advances in computers, servo motors, and production technology.
Registration Criteria	1-A (Shows an important aspect or stage of the development of science and technology.) 2-A (Played a notable role in improving people's way of life and creating new ways of living.)

Open/Closed to the Public	Open to the Public		
Photos	 (1) Continuous five-finger glove knitting machine with elastic yarn insertion device *Elastic yarn insertion device: Area indicated by red outline (2) Automated glove knitting machine (square fingertip type) (3) SFG® fully automatic seamless glove knitting machine		
Other useful information			