# SOP for the Use of Non-Standard Materials in the Shima Seiki SWG091N2 Knitting Machine

Last revised 2025.04.10, by Alexander Lefort

## Purpose

Materials outside of standard machine knitting yarns (acrylics, PET, cotton, wools, etc), such as those with metal fibers, solid insulation, low elasticity, low malleability, high tensile strengths, etc, or any combination of these, may cause damage to machine needles. To mitigate the disruptions to other users, this SOP gives guidance on the trainings and procedures necessary to repair needles when broken or deformed.

## When to Use

This SOP must be used when non-standard materials are utilized within the knitting machine.

## Procedures

Please follow all procedures below when utilizing non-standard materials:

### Training

Users of this SOP must have all of the following trainings:

1. General Lockout Tagout (LOTO) procedures through Environmental Health & Safety (EH&S): [Lockout Tagout Hands-On | EHS](https://www.ehs.washington.edu/training/lockout-tagout-hands)
2. Specific LOTO procedures of the SWG091N2. Please contact the lab manager for training.
	1. Procedures may be found at the base of the Fablab site Safety Information page: [Fabrication Research Lab Safety Information](https://fablab.cs.washington.edu/safety-information/).
3. How to replace needles on the machine. Contact the lab manager for training.
	1. Specific procedures may be found starting on page 40, “How to replace parts, Needle Bed,” in the *SWG091N2 Instruction Manual for Operation and Maintenance.*

### Scheduling Time

In addition to the “Fablab Machine Use Calendar SOP” users will schedule two additional hours of time over their expected session to account for the event that a needle is damaged and needs to be replaced.

### Purchasing Back-Up Needles

The user’s lab must purchase back-up needles from Shima Seiki to replace those that were used from the Fablab stock. Contact the lab manager to connect you with a Shima Seiki tech or sales representative. Information on the needle parts is listed below:

* **Machine:** SWG091N2
* **MFG No.:** 327
* **Needle Gauge:** 7G
* **Type of Needle:** Compound needle (general needles, ~$15.00/needle), Cutter (~$15.00), or Anchor (~$15.00)

For questions, please contact the lab manager: Alexander Lefort, aalefort@cs.washington.edu.