

***Tatara* Furnace**

The *tatara* furnace reproduced here shows how smelting was performed around the turn of the twentieth century. A rectangular clay furnace stands in the center of the model, connected to bellows on each side by a set of bamboo tubes.

This replica depicts a late stage in the multi-day smelting process. A porous lump of iron and steel (*kerā*) has formed, as represented by the shiny gray mass at the bottom of the furnace. The initially thick clay walls of the furnace have mostly melted away, reacting with impurities in the molten iron to form a waste product called “slag.” Over the course of the smelting process, the slag slowly oozes out through holes at the base of the furnace, which can be seen on the opposite side of the model.

In contrast to the more recognizable man-powered bellows, the bellows in this replica are similar to those currently used at Nittōho Tatara. The moving parts are housed in a separate building, and air is sent to the *takadono* workshop through pipes.

The success of the smelting depends on creating specific chemical reactions inside the furnace, and these require a certain type of clay and a steady flow of oxygen to feed the flames. The importance of these elements is communicated in a common saying among ironworkers: “First, good clay. Second, good air. Third, a good foreman.”

(The furnace’s underground structure is described on the sign at the bottom of the stairs.)