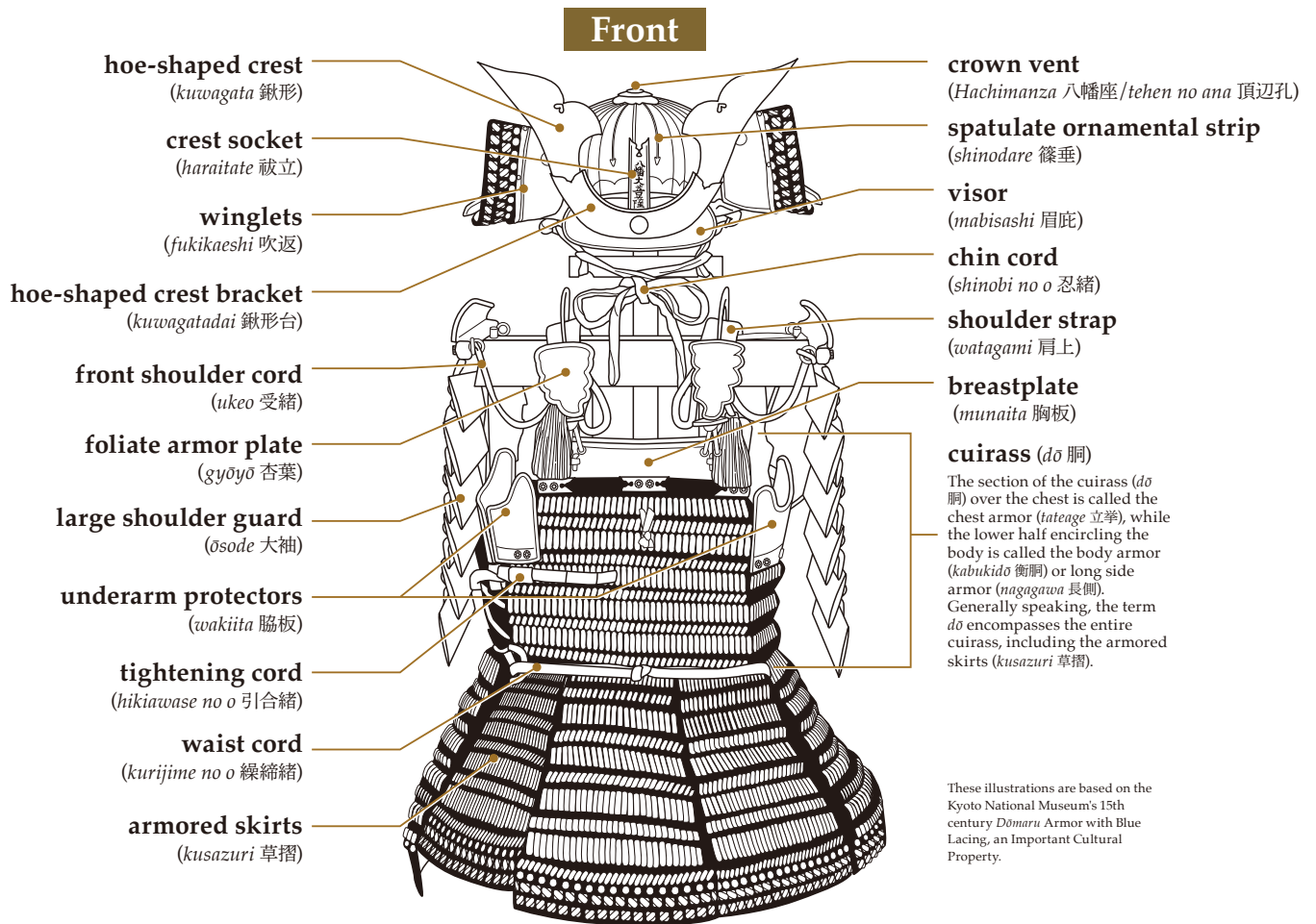
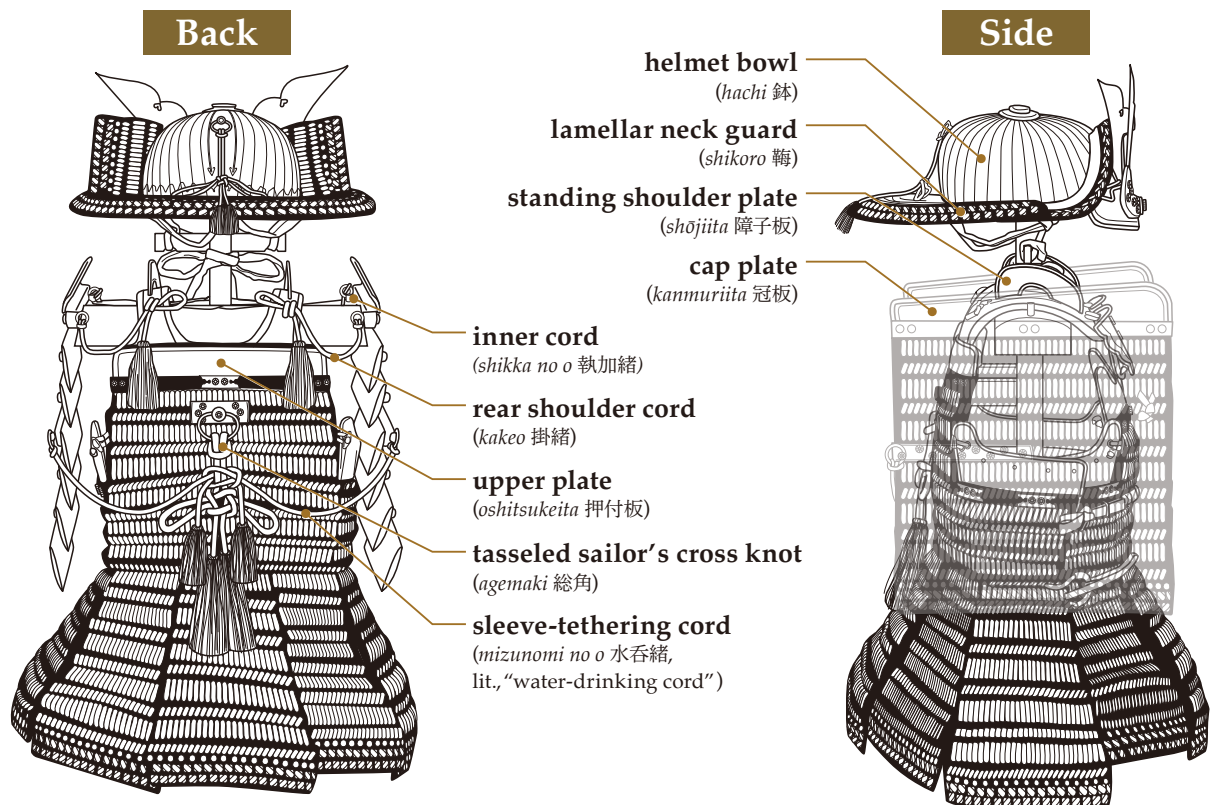


KYOTO NATIONAL MUSEUM RESOURCE GUIDE

Japanese *Dōmaru* Armor



These illustrations are based on the Kyoto National Museum's 15th century *Dōmaru* Armor with Blue Lacing, an Important Cultural Property.



The large shoulder guards (*ōsode*) are secured in back with the rear shoulder cords (*kakeo*), which pass through rings on the back of the shoulder straps (*watagami*)

The standing shoulder plates (*shōjiita*) on the *Dōmaru* Armor with Blue Lacing are reversed front to back from their original positions. Such alterations were common in Edo period (1615–1868) armor restoration.

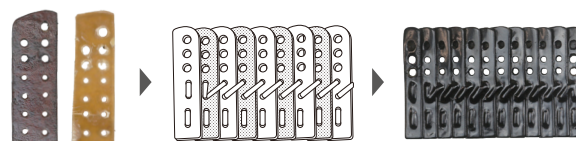
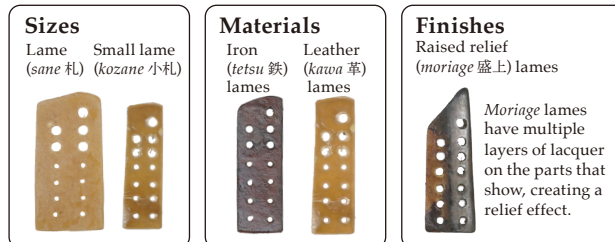
Armor Materials and Techniques

Lames (*Sane* 札)

Lames are the most fundamental components of Japanese armor. These are small plates measuring 5–8 cm high, 2–4 cm wide, and with a thickness of 1–2 mm, with regularly spaced holes for threading cords. Lames can be further divided into subcategories by their shapes. The basic lame types are introduced here. Lames are usually made of iron or cowhide. Generally, older lames tend to be larger, growing smaller over time, and are sometimes termed “small lames” (*kozane* 小札).

A lamellar plate (*saneita* 札板) is a horizontal unit formed by stacking several lames, slightly staggering each horizontally, and lacing them together with leather thongs through the holes of the lower four rows. Lamellar plates may be made from either iron or leather lames. They also may be made be of composite materials, with iron and leather lames alternating in a regular pattern to achieve a balance between lightness and strength. The outer surfaces of lamellar plates are coated with lacquer for reinforcement and for aesthetic reasons such as color choices. A single suit of armor may incorporate several hundred to several thousand lamellar plates.

In the later part of the Muromachi period (1392–1573), solid plates (*itazane* 板札) were introduced as an alternative to labor-intensive *saneita* lamellar plates. *Itazane* varieties include grooved solid plates (*kiritsukezane* 切付札), fashioned to resemble lamellar plates, and straight-edged solid plates (*ichimonji gashira no itazane* 一文字頭の板札).



To create lamellar plates, lames are stacked horizontally, with each lame offset by half its width, and laced together with leather thongs. Black lacquer is applied to the surface as a reinforcing surface coat.



(Left) grooved solid plate (*kiritsukezane* 切付札)

(Right) straight-edged solid plate (*ichimonji gashira no itazane* 一文字頭の板札)

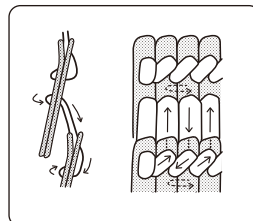
Lacing (*Odoshi* 威)

Odoshi 威, the Japanese character for armor lacing, is derived from the homophonous characters *odoshi* 緒通し, meaning “cord threading.” One distinctive feature of Japanese armor is how the lamellar plates (*saneita* 札板) are laced together vertically, with cords threaded through the upper three rows of holes in the lames. The lacing cords (*odoshige* 威毛) are usually braided silk cords (*kumihimo* 組紐) or tanned deer hide (*kawa* 革) strips.

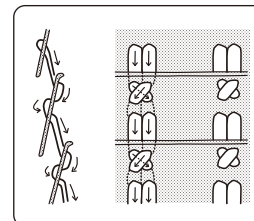
There are two main lacing methods: full lacing (*kebiki odoshi* 毛引威), in which the cords are densely threaded so as to cover the lames, and sparse-point lacing (*sugake odoshi* 素懸威), where the lacing is threaded with spaced intervals.

Additionally, when lames and other components were reused, the entire armor, including the lames and lacing, might be wrapped in leather for visual concealment and reinforcement.

full lacing
(*kebiki odoshi* 毛引威)



sparse-point lacing
(*sugake odoshi* 素懸威)



Full Lacing
(*Kebiki Odoshi* 毛引威)



Important Cultural Property
Dōmaru Armor with Blue Lacing
Kyoto National Museum

Leather Lacing
(*Kawa Odoshi* 革威)



Important Cultural Property
Dōmaru Armor with Black Leather and Purple, Red, and White Lacing
Kyoto National Museum

Sparse-Point Lacing
(*Sugake Odoshi* 素懸威)



Dōmaru gusoku
Armor with Black Lacquered Plates and Dark Blue Sparse-Point Lacing

Leather Wrapping
(*Kawa Tsutsumi* 革包)



Important Cultural Property
Haramaki Armor with Smoked Leather Wrapping
Amanosan Kongō-ji Temple, Osaka

Metal Fittings (*Kanagu* 金具)

Various metal fittings (*kanagu* or *kanamono*) are used in the production of armor. Many are made of copper that is forged to shape and then colored gold using mercury gilding.



Examples of replicated metal fittings