

SECTION 1: THE WORK OF THE CABINET MAKER (*kijishi*)

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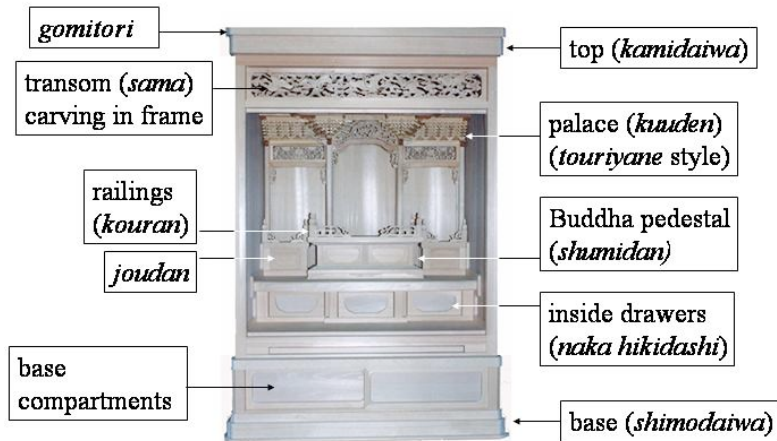
REFERENCES AND ACKNOWLEDGEMENTS

INTRODUCTION:

This section on cabinet making is the first in which we will be documenting and illustrating traditional Japanese craftsmanship using the making of a Hikone *butsudan*. Perhaps more than anywhere else in the world, Japanese artisans are known for the meticulous attention to detail throughout their work. The high technical level of cabinet making, for instance, is hidden from view by layers of lacquer and then gold and yet the *kijishi* trains for upwards of 10 years, taking pride in his developing skills and his success in the end. Sadly however, the high cost of Japanese craft and the lack of interest of young people in this high-tech computer age means these skills are slowly dying out. It is our aim, in this website to record as much as we can before it is too late. *Butsudan*, which require wood, lacquer and metal working skills, are an integral part of Japanese peoples' lives, so we think it is a suitable example of a traditional Japanese art.

1.1 STRUCTURE AND STYLE:

As can be seen from the flow chart in the general introduction, the *kiji* comes first in the *butsudan* production process. It the *kijishi* is job to make the cabinet of the *butsudan*, including the three back pieces (*mukouita*), the sides (*gawaita*), the inner lattice doors (*shouji*) and outer solid doors (*amado*), as well as the base (*shimodaiwa*) and the top sections (*kamidaiwa* and *gomitori*). He also makes the inner shelves, drawers, sliding doors, Buddha pedestal (*shumidan*), and side boxes (*joudan*). Finally the *kijishi* makes the frames for the carvings and all the pillars except those related to the *kuuden* (see *kuuden* section). For the *kijishi* the designs fall into two basic shapes. Again, as outlined in the main introduction Joudoshinshuu style has drawers that are not visible when the outer *amado* are closed. On the other hand, Joudoshuu style has a deeper section on top of the *shimodaiwa*, with drawers or compartments, which are visible when the *amado* are closed, incorporated into it.



Kiji photo 01: Joudoshuu style kiji [basic frame without doors] (cf *kiji* photo 24 for Joudoshinshuu style) (courtesy Tsuji Ryoza)

There is also a tray that can be pulled out for the presentation of offerings, especially at the times of Bon and Shogatsu. In Joudoshuu style this tray is above the *shimodaiwa* and thus 'inside' the *butsudan*. For Joudoshinshuu style it is in the *shimodaiwa*, below the base drawers (see *kiji* photos 17 and 20). In the following description, the stages of *kiji* making are outlined. However it is easiest for an overall understanding of the *kijishi*'s work to look at the assembly process, which is discussed last.

1.2 TOOLS:

Tools are such an important part of the woodworking crafts. Their use is described throughout the Technical Processes section, but for more detail please refer to the details information given in section 2 on *kuuden* especially, and also section 3 on carvings (*choukoku*). For tools see *kiji* photos 05, 06 and 10.

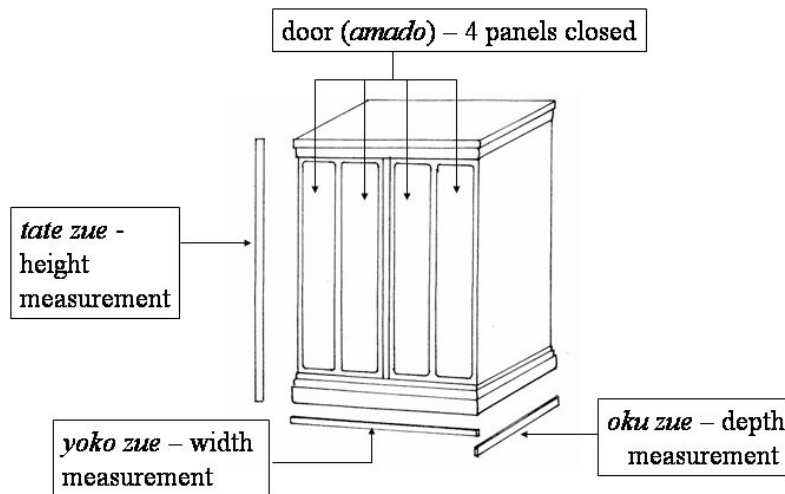
1.3 MATERIALS:

For the three wood working skills, selection of materials is considered as one of the technical stages. This is because not only are there choices to be made as to the type of wood to use, but also recognition and treatment of flaws which may actually be hidden deep in the material. Understanding the original state of the wood, its type and length of time required for seasoning only comes with experience. Also the choice of tools is directly related to the choice of materials and the particular maneuvers required to complete the project. Please see all three sections for full details.

1.4 TECHNICAL PROCESSES:

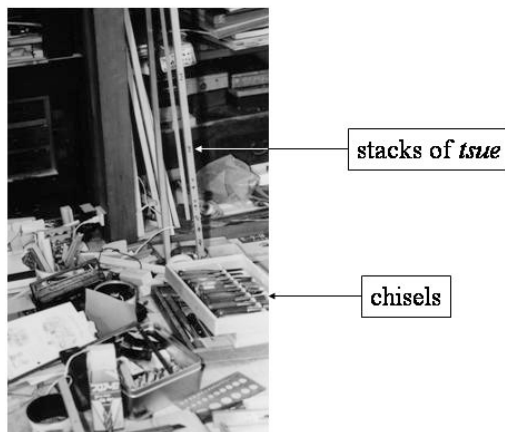
1. Ruler (*tsue*) Making

In the first stage, immediately after getting the order from the dealer (*toiya*) for more rarely, directly from the buyer, the *kijishi* goes to the customer's house, measures up, and designs the *butsudan* to fit the existing alcove (*butsuma*) where the *butsudan* will be situated. Then he makes three rulers or *tsue*, marking every measurement on a plain wooden stick measuring 2cm sq with Chinese ink, using a commercial ruler.



Kiji figure 01: *tsue* showing the three dimensions

(Nomura 1977: 50) After that he can work from the inside or the outside. This is a crucial operation because if there is a mistake in the *tsue*, there will be a mistake throughout the whole *butsudan*. In a way the *tsue* is like a ‘blueprint’.



Kiji photo 02: Tsuji Ryozo’s workshop with *tsue*

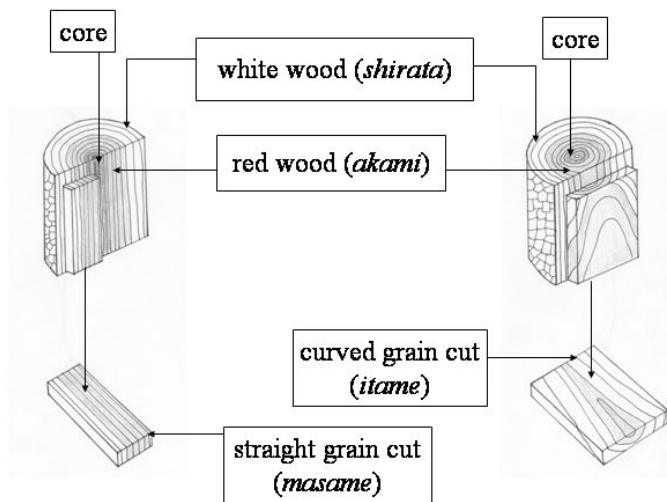
“The size of the *butsuma*,” says *kijishi* Tsuji Ryozo, “was fixed in the old days (ie prewar). It used to be determined by the number of *tatami* mats and their particular style and size, either Edo or Kansai size. Therefore the size of the *butsudan* to fit into that space was also fixed. But it is more flexible now that they use the metric system.” Thus each house has a different shaped *butsuma* so necessarily each *butsudan* will reflect that difference. Ryozo has hundreds of *tsue* because all three dimensions, height, width and depth can vary.

Ryozo's son, Toshimasa says, "Some merchants have recommended to us to draw paper patterns, but *tsue* are more useful once you get used to them. The marks on the *tsue* are the real size so the marking is more accurate. We mark on *tsue*, making allowances for all three layers of lacquering: base, middle and final coatings. I feel tense when I'm making the *tsue* because it is the basis of the *butsudan* design. And I have to think about the allover balance."

2. Selection of Materials

Once the rulers are made the wood must be purchased, cut into boards and sorted out according its use. The strength and weakness, grains and cracks of the wood must be considered. Mistakes can be costly and according to one *kijishi*, "it would have been better to go home and sleep rather than buy lumber. A tree trunk sometimes has a crack inside because of lightning, which cannot easily be seen from outside; but if you look carefully from the outside you can see it." Also, if the wood is not dry enough, it must be dried in the sun. (Nomura 1977:50)

The *kijishi* often visits the lumberyard after buying the wood and directs the way in which it should be cut depending on colour, quality and grain. Red wood (*akami*), near the core, is hard and not easily attacked by insects. Thus it is better than the softer, more vulnerable white wood (*shirata*), on the outside near the bark.



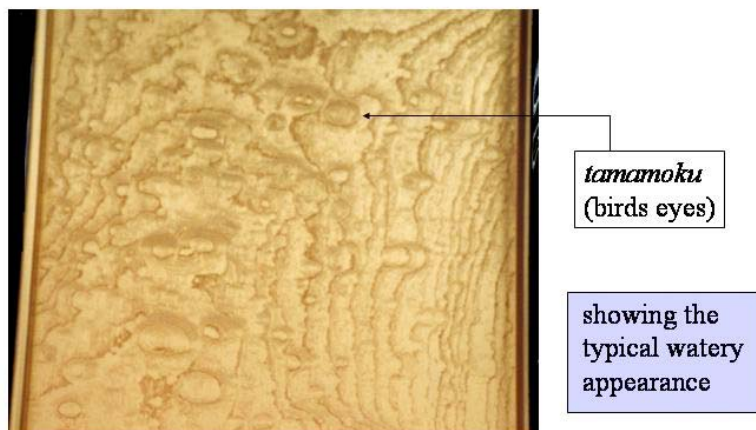
Kiji figure 02: woods and types of cutting

The core and the part just around it are discarded because there are many knots. If possible the *kijishi* will remove the white wood and use only the red. With regard to the grain, of the several ways a log can be cut into boards, two are typically used for *butsudan*. Those with a curved grain (*itame*) have a tendency to warp, while those with a straight grain (*masame*) do not warp so much. (see *kiji* fig. 02) *Masame* boards are narrower and are used mainly for high quality *butsudan*. After cutting, the boards are stacked up allowing them to dry naturally for from 6 months to 3 years. It is said that every 1 *sun* (3 cm) thickness takes 1 year to dry. Trees that have been cut in the period between the spring rainy season in March and the longer one in June and July, are avoided because wood cut in that period is more susceptible to insects. (also see *kuuden* and *choukoku* sections)

The *kijishi* generally uses the wood from conifers such as Japanese cypress (*hinoki*). However, zelkova (*keyaki*) and *sen*, which is similar to zelkova and sometimes called Hokkaido *keyaki*, are most highly valued. The wood will be selected according to the price of the *butsudan*. Tsuji Toshimasa says, “One of the difficulties in my work concerns purchasing the materials. I try to buy the best quality wood at the lowest price.” He has to keep the total *kiji* fee in mind and must know the approximate cost of each stage (see intro fig. 01: flow chart of production processes) so that the price agreed on at the time of ordering is not exceeded. When a very high quality *butsudan* has been ordered, sometimes the customer is taken to the lumber shop to see the wood, especially the door boards (*amado ita*). Occasionally the cost of a set of four *amado ita* is higher than the cost of the rest of the *kiji*. Top quality wood may be prepared by the merchant or in the *kijishi* workshop.

Cypress (*hinoki*) is the wood of choice for a *butsudan kiji*. Both Bishu *hinoki* from Aichi prefecture and Kiso *hinoki* from northern Gifu and Nagano prefectures are the same high quality. Although only Japanese *hinoki* is used for high quality products, for medium or lesser quality items *hinoki* produced in America is used once in a while. The benefits of cypress can be seen from such ancient monuments as Shousouin and Houryuuji that have survived for centuries. *Hinoki* is not particularly hard but it is decay and insect resistant. Additionally, as an inexpensive way of getting a good grain, prominent parts of the *hinoki kiji* may be veneered with *sen*, which is harder or zelkova, which is even harder.

Zelkova (*keyaki*) is esteemed for its beautiful grain. A large, ancient zelkova tree may be hollow inside so the small amount of wood remaining near the bark is especially valued. It is a little reddish in colour, hard and is usually more expensive than *sen*. The presence of a burl can twist the grain into intricate patterns, which if they take on the appearance of bird’s eyes (*tamamoku*), are highly sought after and expensive.



Kiji photo 03: *tamamoku* on a door panel
made of *keyaki*

The best *keyaki* grain is found near the bark, at the borderline between the white (*shirata*) wood and red (*akami*) wood, where only a small amount of *shirata* needs to be removed. (see *kiji* fig. 02)

However, although the red wood of *sen* might be preferable to the white wood of *keyaki* this is not often understood by the customer who has an image that *keyaki* is always more desirable. In this case the cost of *akami sen* might be 10% of the cost of *akami keyaki*. The grain of *sen* is more complicated at the surface and gets simpler as you move inwards.

As mentioned before, sometimes the very visible surfaces, such as those facing front, are veneered to give them an outstanding grain as economically as possible. Generally in this process, called *hagitsuke*, zelkova is used for high quality *butsudan* and *sen* is used for lower quality ones. The thickness of *hagitsuke* veneer is from 1 to 2 *bu* (3 to 6 mm) before planing. The thickness isn't as important as the quality of grain. The more complicated the grain of any wood, the more expensive it will be. The surface wood with its complex grain is generally used for veneering.

3. Rough Cutting (*arakidori*)

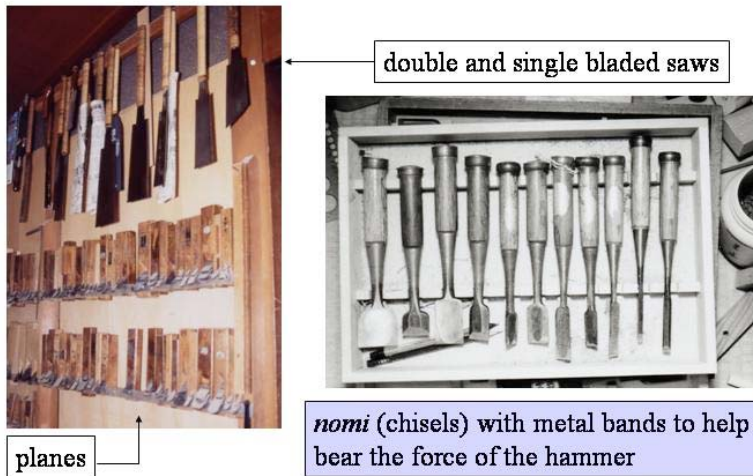
Tsuji Ryoza works with his son, Toshimasa and a former apprentice, Matsumiya Saburo, both now fully qualified. Theirs is a typical workshop cluttered with wood of all sizes and shapes.



Ryoza surrounded by stacks of lumber, tools and wood shavings

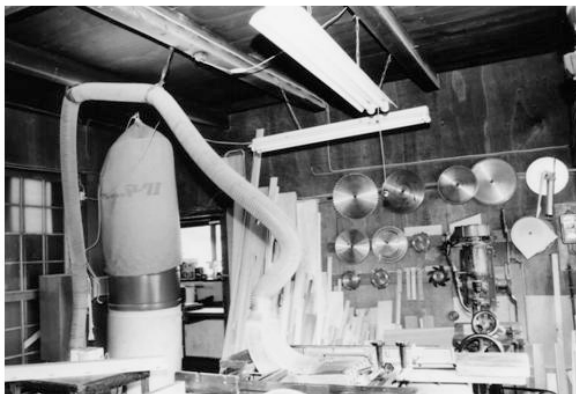
Kiji photo 04: Tsuji Ryoza in his workshop

Over 200 different planes as well as saws hang from the walls, boxes of chisels litter the work surfaces.



Kiji photo 05: tools in Ryozo's workshop

In a separate room, there are machine saws, with circular blades suspended all around and suction equipment to draw away the sawdust to keep the atmosphere as healthy as possible.



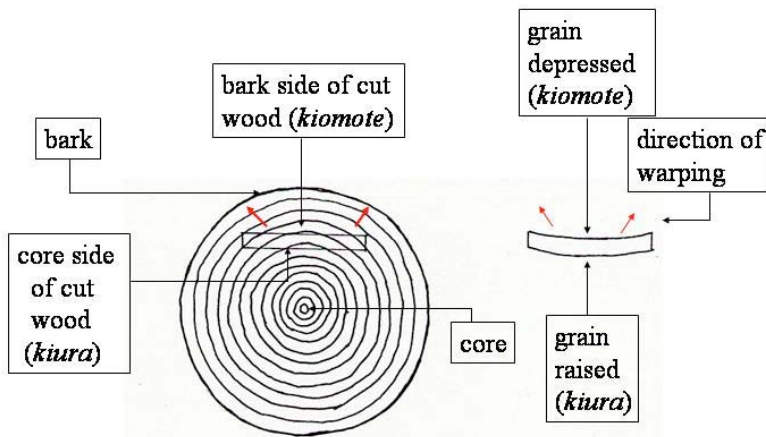
this kind of extraction equipment is now required by law.

Kiji photo 06: mechanization in the Tsuji workshop

Once the wood has been selected and the *kijishi* starts cutting it roughly into the required shapes (*arakidori*), the real job of making a *butsudan* has begun. Electric saws are used for the general shaping. Then, after initial machine planing the final shaving and smoothing are done using hand tools. (Nomura 1977: 50)

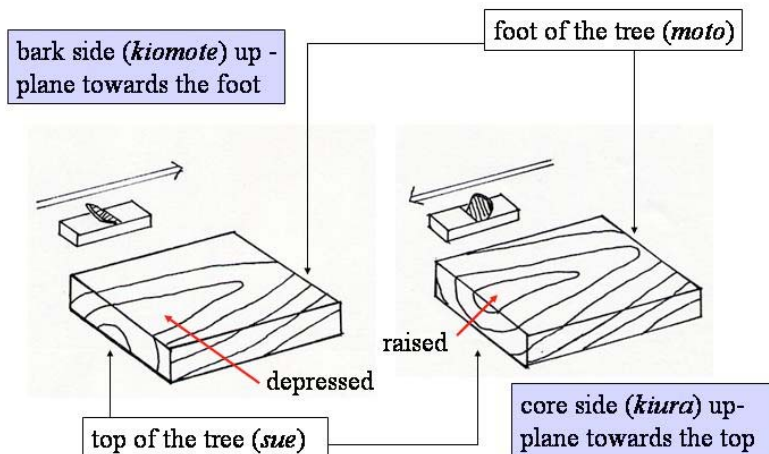
4. Removal of Twists (*yoritori*) and Marking

After the rough cutting process is finished the wood is examined for warping or twisting. (Nomura 1977: 50) The board will naturally bend against the grain. It bends away from the core and on that surface the grain will be raised. On the other surface, originally towards the bark, the grain will be depressed.



Kiji figure 03: cross-section of wood showing: direction of warping

First Ryoza removes twists and warps (*yoritori*) with electric planes and then he shaves them smoothly with hand finishing planes so that the work is extra smooth for the lacquering process. Special consideration must be given to the grain of the wood when planing. Ideally this process should move from top to bottom (into the grain) on the bark side of the board and the opposite (out of the grain) on the core side.



Kiji figure 04: direction of planing – into the raised grain

However when the grain changes due to swirls, this becomes difficult and keeping the blades in peak condition can help solve the problem. Thus they must be sharpened frequently during use as they easily become dull.

Matsumiya Saburo working
in the Tsuji workshop



Kiji photo 07: sharpening plane blades

The wooden block is made from Japanese Oak or Quercus (*kashi*) which is affected by temperature and humidity so that the slant and depth of the blade must be reset by tapping it with a hammer.



adjustment is done by eye
and feel – this comes with
practice

cutting surface of blade

hammer to adjust angle
and depth

Kiji photo 08: Tsuji Toshimasa adjusting the plane
blade

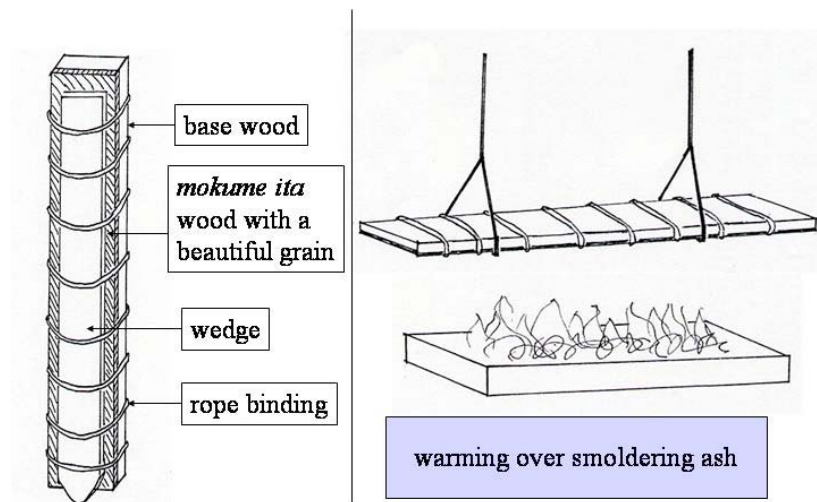
By pulling the plane towards the body, supporting and guiding it with both hands, a layer of wood, thin enough to be virtually translucent is removed. (also see *kuuden* section)

Finally the wood is sorted according to where it will be used in the *butsudan*. Large pieces such as the back boards (*mukouita*), side pieces (*gawaita*), outer doors (*amado*), the top sections (*kamidaiwa* and *gomitori*) and the base (*shimodaiwa*), all destined for the main outer body, are set aside. Some may be veneered before being sent for lacquering and gilding. Smaller inner pieces such as platforms (eg *sandan*, *gedan*), shelves, drawers (*hikidashi*), inner door lattices (*shouji kumiko*), small sliding doors (*nekodo*), large and small pillars (*hashira*), layered inner ceiling sections (*tenjou* and *tenjouita*), the Buddha pedestal (*shumidan*) and the two side pedestals (*joudan*) (see *kiji* photo 21) will be marked according to the *tsue*, then holes are drilled and tenons cut. Further planing, carving and perhaps veneering will be carried out

5. Veneering (*hagitsuke*)

The aim of the veneering or *hagitsuke* process is to get a beautiful grain on the prominent pieces while using more durable and utilitarian wood such as *hinoki* or cedar (*sugi*) as the foundation. As with cutting, *hagitsuke* is always done using seasoned wood and after three days of fine weather.

Traditionally the *hagitsuke* process involved the application of adhesive, made from dog's bone gelatine, to the surface of warmed base wood. Then the 'grain sheets' of zelkova or *sen* were layed on top and bound tightly using wet ropes with the coils close together. (Nomura 1977: 50) They were further warmed over a fire of burning sawdust and when the glue had become evenly flat, wooden wedges were driven between the rope and the wood to ensure adhesion. The glue melted and sunk into the wood and when it oozed out of the joint it was ready. It took five or six minutes. The ropes were taken off the next morning.



Kiji figure 05: process of *hagitsuke* done in the traditional method

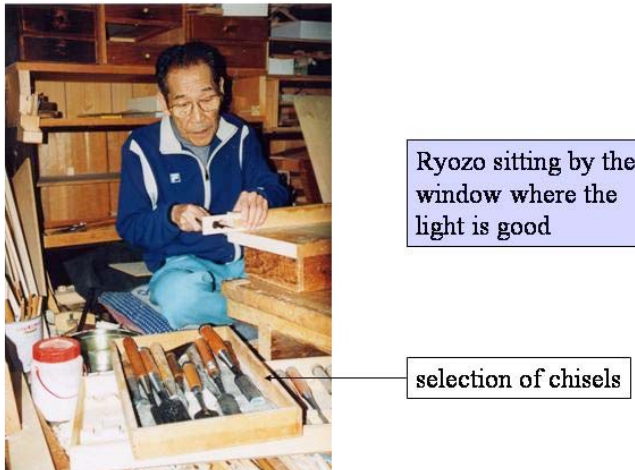
“This was so up until 20 years ago,” muses Ryozo. While another artisan, Ohashi Kazuo remembers, “In those days we used kneaded cooked rice glue. When I began to work as *kijishi*, more than 30 years ago, my first job was mixing cooked rice to make glue.” These days the process is the same except that commercial glue (*bondo*) is used and no warming is necessary “but in our workshop,” says Ryozo, “we still use the

rope technique instead of using pressing machines as some shops do”. *Hagitsuke* is only done on the outward facing surfaces of such parts as *kamidaiwa*, *shimodaiwa* and especially *sandan*. This latter consists of three layers, the upper (*nageshi*) and lower (*chuuji*) being visible even when the inner doors (*shouji*) are closed. The middle layer (*chuudan*) comes at eye-level when one is kneeling in front of the *butsudan*.

Ryozo says, “This process is unusual. Only one or two Production Areas other than Hikone do it. If we see a *butsudan* for sale in Kyoto, and it has *hagitsuke*, we know it was made in Hikone but is being marketed in Kyoto as ‘Kyoto *butsudan*’”.

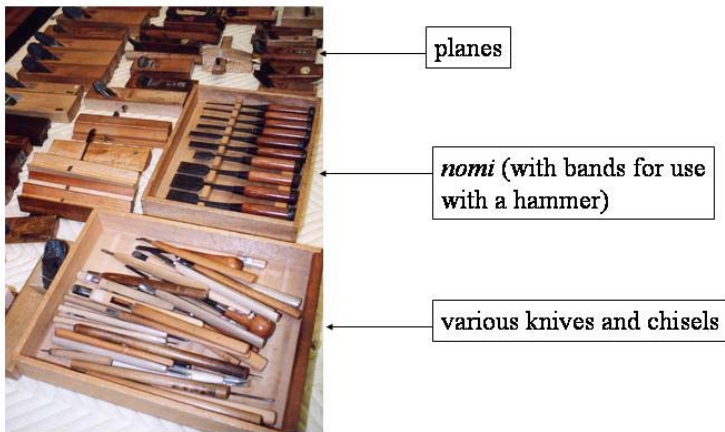
6. Making the Inside Parts

When all the veneering work is finished the inner, more delicate parts must be tackled. Good light is necessary and amongst the ordered muddle in the workshop Ryozo can be found, sitting on a cushion near a window, doing the detailed work on these inner pieces (see *kiji* photo 4).



Kiji photo 09: Tsuji Ryozo at work

They are cut and shaped using hand or machine saws. If any of them are to be veneered, they will be cut after that process is completed. Round pillars are machined and then planed by hand (see *kuuden* fig.14). Corners, grooves, and door mouldings can be fashioned with Ryozo’s vast variety of planes while various sizes of knives (*kurikogatana*), which have very sharp pointed blades, are used for the final shaping (see gilding section).



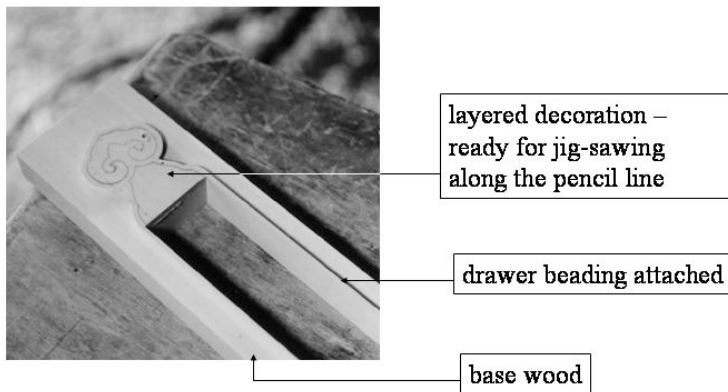
Kiji photo 10: tools

(Nomura 1977: 50)

Tsuji Ryoza says, “Genuine artisans work just as much on the hidden parts of the *butsudan*, as the visible ones”. And nowhere is this truer than on the ceiling (*tenjou*), which is all but invisible after the palace (*kuuden*) is in place. (see *kiji* photos 22 and 24) Corners are mitred even though they will be viewed only from the front. As he cuts the pieces to their final dimensions he is careful to leave an allowance for the increasing thickness after lacquering. It is easier to apply lacquer (*urushi*) to a curved surface because if a piece is flat the *urushi* sticks on the upper surface. Finishing by *kurikogatana*, after jigsawing gives polish to the wood and facilitates lacquering. The undersides of the small parts near the base of the *shumidan* (see *kiji* photo 21) are also shaved into a concave shape by *kurikogatana*. He is painstaking about this curve on the reverse side because *urushi* is not applied there, but rather the excess from the upper surface goes through the gaps and coats the underneath. Even in this intricate work he goes only partially by appearance, “I can tell how much I have shaved by the feel of the surface,” says Ryoza.

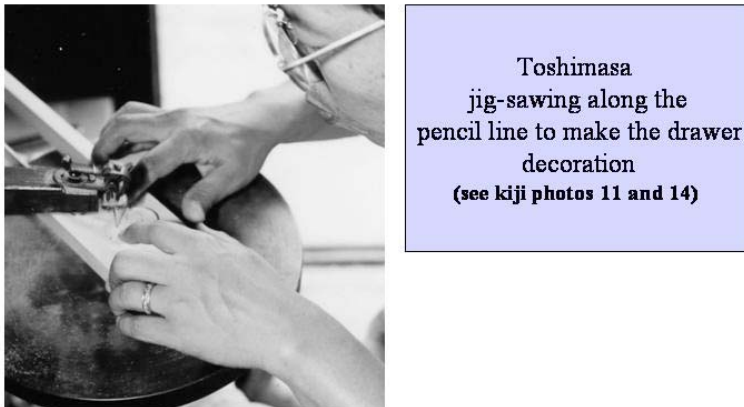
For making the *shouji* or inner lattice door, the same processes as are described for making joints in the *kuuden* section (*kuuden* fig. 18) is used.

When he is making something such as the upper transom (*sama*) frame or a drawer front (*daiwa* or *naka hikidashi*) where two pieces are layered, first he cuts the outer piece to shape. Then he glues it to the base wood.



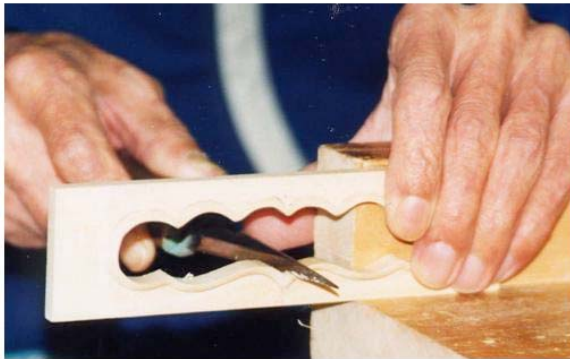
Kiji photo 11: a drawer front ready for jigsawing

Next he cuts the inner shape using a jigsaw of the kind that is commonly used by women in factories where mass production is practised.



Kiji photo 12: jigsawing

Lastly, using a sharp bladed *kurikogatana* he puts the final shaping on the beading.



Kiji photo 13: Ryozo doing the shaping on a simple drawer front

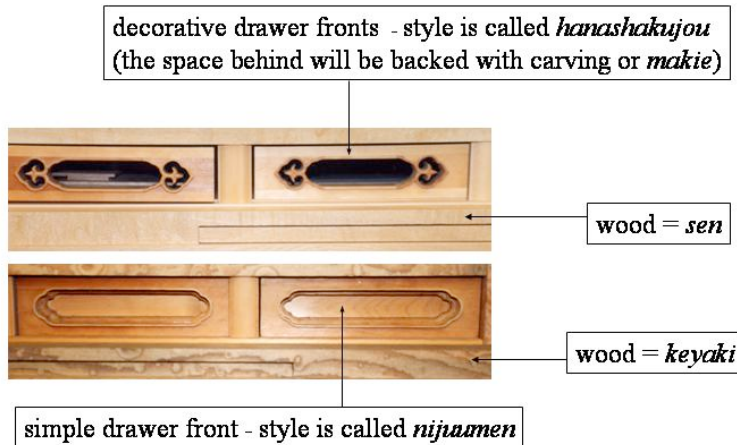
Generally speaking, the more expensive the *butsudan* the more detailed the carved molding on such places as the *daiwa hikidashi*.



Tsuji Ryozo using
kurikogatana to smooth
the inner edges
of the drawer beading

(see *kiji* photos 11 and 15)
(cf *kiji* photo 13 – simple pattern)

Kiji photo 14: final shaping of drawer decoration – complex pattern



Kiji photo 15: two types of drawer decoration
(see *kiji* photos 13 and 14)

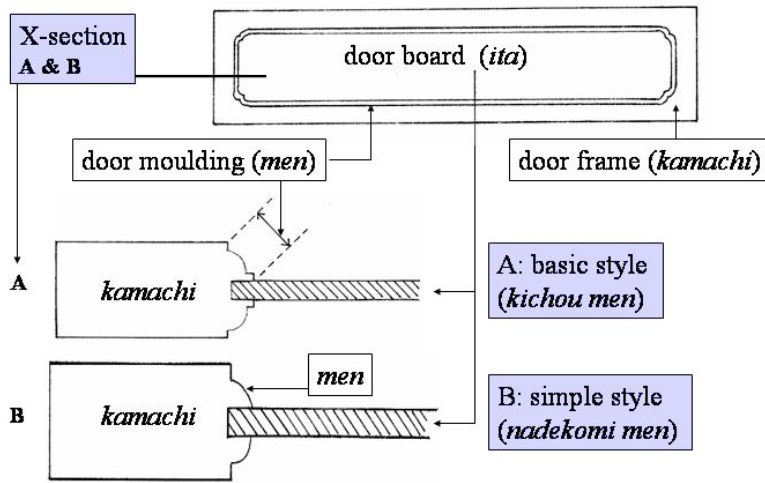
7. Making the Outside Parts

Then the *kijishi* must turn his talents to the outside parts of the *butsudan*. The major jobs concerning these are making the fittings and joints, shaping the mouldings and preparing the wood for the next stage of lacquering.

The back (*mukouita*) of the body is made of three pieces of *hinoki* placed vertically and held together by battens with tenon and mortise joints. Horizontal supports called *san* are nailed or occasionally jointed with tenon and mortise joint (*ari*), at 20cm intervals, to the back. The more expensive the *butsudan* the more *san* there will be (see *kiji* photos 22 and 23) and without these the upright boards would warp inwards (concave on the back surface) since the bark side of the wood is placed on the outside. In the case of the six-door style (*sanpoubiraki*), where two pairs close across the front and the other two close along each side, the resultant rather narrow side boards (*gawaita*) are each made with a single piece of *hinoki* or *sugi*. On the other hand, for the four-door style (*maebiraki*) where all both pairs close across the front, the wider side pieces may be made of plywood which has less tendency to warp. For details of the four and six door styles of *butsudan* please see *choukoku* figs. 01 and 02)

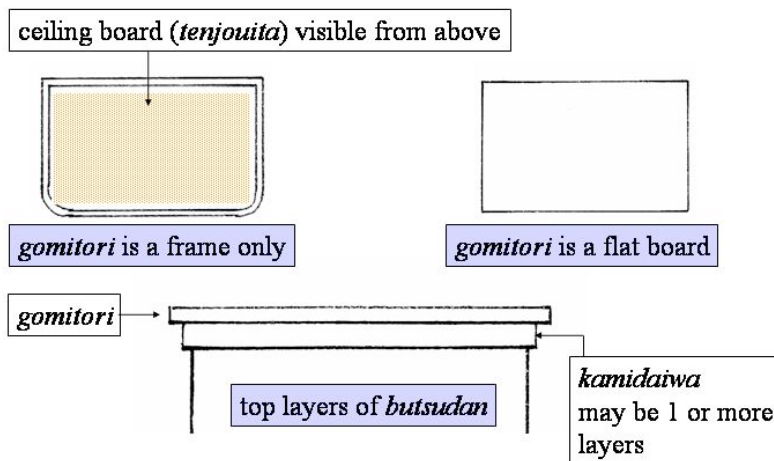
Planing the door boards is a crucial job since this will affect the general look of the finished product. The grain patterns of the four or six door boards should be almost the same, so they ought to have been cut from the same block of wood. If the *amado ita* has burls the finishing of the *tamamoku* or burl part is very difficult because each burl requires planing with the grain (*junte*) and planing against the grain (*sakate*). (see *kiji* fig. 04) Therefore they use very sharp blades making minor adjustments according to weather conditions. "When I plane, sharpening the blade and adjusting the angle or depth (see *kiji* photo 8) takes more time than the planing itself," says Toshimasa. "But when I work on the *amado* I can only do it when my health condition is good because I have to grit my teeth and stop breathing and plane from the top to the bottom without stopping, at the same speed and pressure so I have to finish planing one surface at one time, without stopping." The door consists of the frame (*kamachi*) that

surrounds the board (*ita*). There are different styles of frame and the molding (*men*) can vary in shape.

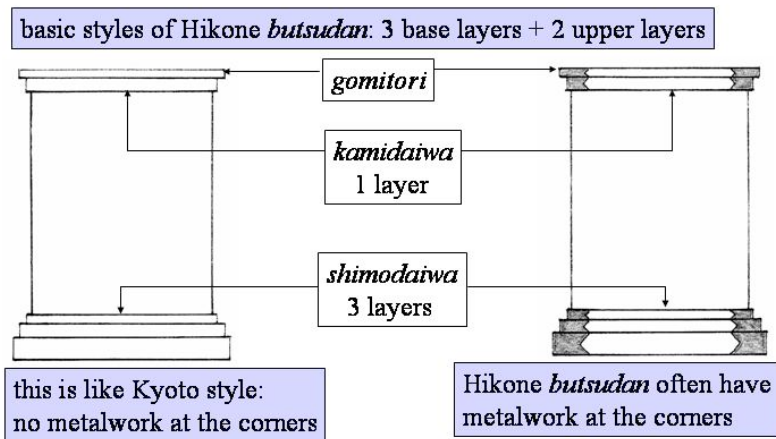


Kiji figure 06: shapes of door mouldings

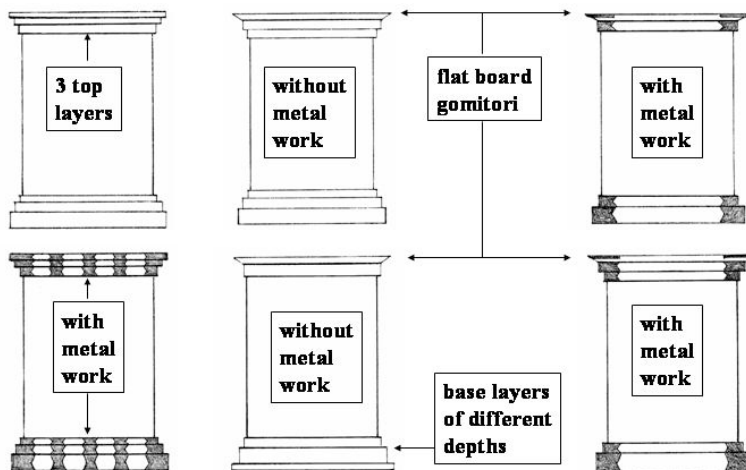
The two or three layers of the base (*shimodaiwa*) and the upper layers (*kamidaiwa* and *gomitori*) are shaped with planes to various depths with the corners either rounded or square.



Kiji figure 07: shapes of top layers (kamidaiwa and gomitori)



Kiji figure 08.a: basic styles of top (*kamidaiwa*) and base (*shimodaiwa*)



Kiji figure 08.b: variations on basic style of *kiji* top and base

Then the front surfaces may be given metal pieces treated with lacquer (see kanagu section) called *hagitsuke*. And lastly the wheels (*kuruma*) are prepared for the underneath.

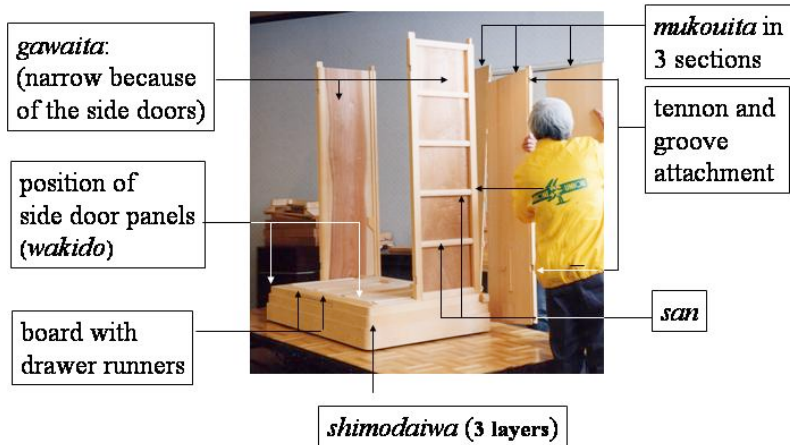
8. Assembly (*kumitate*)

When everything is completed the *kijishi* must check all parts and then assemble the whole *butsudan* from outside to inside, to make sure all the pieces fit securely while allowing enough space for the layers of lacquer. (Nomura 1977:50) This makes it possible to dismantle and replace damaged parts when cleaning (*sentaku*) is done in years to come. Most importantly, this will be the ultimate assessment as to whether the artisan's initial concept was a good one.

The pieces may be held together either by grooved joints consisting of the projecting *hozo*, the male part and *hozoana*, the groove or the female part or alternatively by

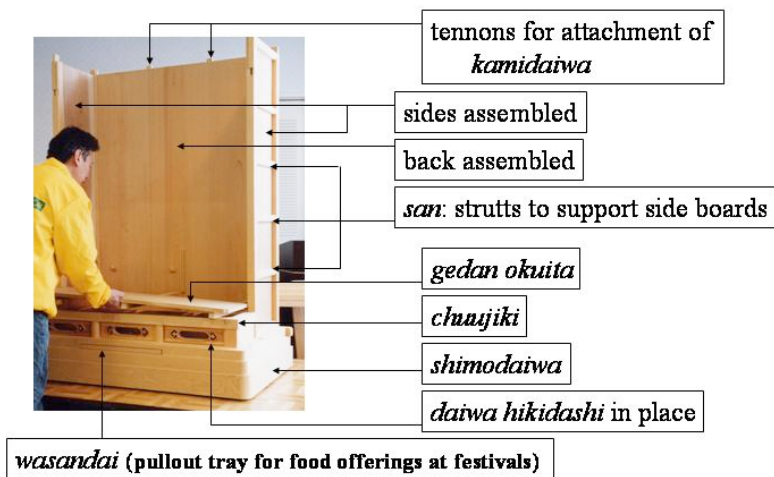
bamboo pegs called *take kugi*. If nails are being used, and this will only be for the attachment of the *san*, Ryoza flattens the heads allowing them to be hammered deeper into the wood. Small wedges (*seme ita*) are inserted between the *mukou ita* and other abutting parts such as *chuuji* so that when the *butsudan* is carried around before lacquering the relatively loose joints will not vibrate and cause damage. These *seme ita* are left in place even after lacquering thus keeping the *butsudan* rigid, and their removal before *sentaku* will facilitate the dismantling process.

In the subsequent pictures, assembly (*kumitate*), carried out by several *kijishi*, can be followed in some detail. Generally the outer body is constructed from the base upwards. First the three-layered *shimodaiwa*, with the pullout shelf (*wasandai*) in the upper part, are joined together. Then the two *gawaita*, in this case, made of cedar, with supporting *san*, are slotted into place on top. The tenons and grooves clearly visible on the vertical struts of the back boards show how the *mukou ita* will be assembled.



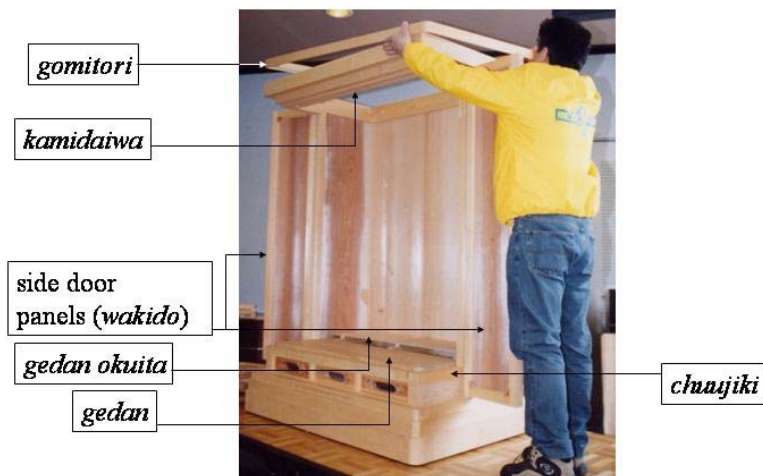
Kiji photo 16: assembling the back, sides and base of the *butsudan* (*sanpoubiraki* style with 6 doors)

Then, with the sides and back *in situ* and the base drawers (*daiwa hikidashi*) in position on the *shimodaiwa* and the *chuuji* on top of the drawers, the *gedan* and its flat board (*gedan okuita*) are assembled.



Kiji photo 17: kijishi, Hamo Masahiro, putting the gedan in position

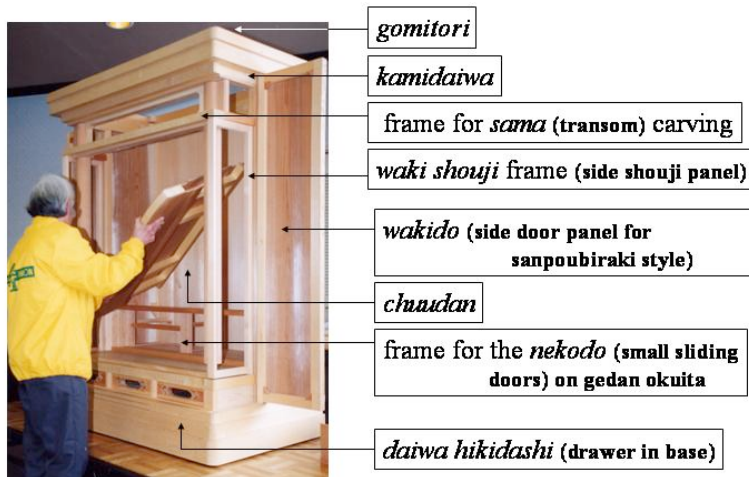
In this photo the *wasandai*, which can be pulled out to hold offerings for the ancestors at *bon* and *shougatsu*, can be seen clearly. Then the two side door panels (*wakido*) are inserted into their sockets and the layered *kamidaiwa* is put on top. The *gomitori* completes the outer body of the *butsudan*.



Kiji photo 18: placing the gomitori on top of the kamidaiwa

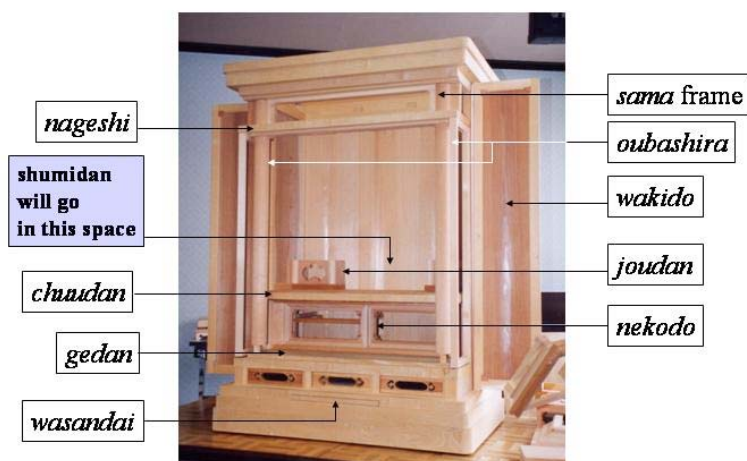
Usually, before this is added, the double-lattice ceiling (*tenjou*) (see *kiji photo 22* and *nuri fig.26*) is lowered onto brackets.

After putting the framework for the small inner sliding doors (*nekodo*) in place, the *kijishi* places the *chuudan* on top.



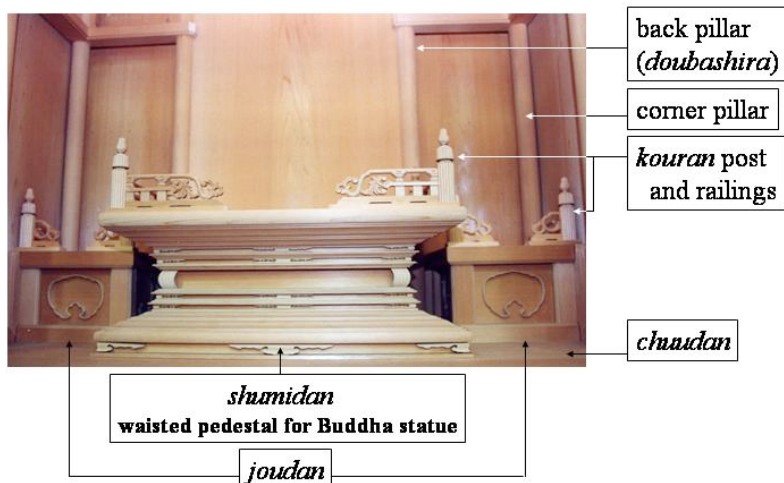
Kiji photo 19: Katsurada Teruo, placing the chuudan in place on top of the nekodo frame

Also in this photo the side *shouji* frame has been put in place and is closed against the large front pillar (*oubashira* or *hanmaru*) and the side door panel (*wakido*) can be seen inserted into its sockets about halfway along the side. Since this is a six-door (*sanpoubiraki*) style of *butsudan* four more door panels will close across the front. Recently, *sanpoubiraki* style is becoming more popular, but it is not necessarily higher priced or of higher quality than ones with only four front door panels (*maebiraki*) (see intro photo 1: courtesy of Eirakuya Co Ltd.). The pillars and the side panels of the inner lattice doors (*waki shouji*) are installed along with the *nageshi*, which is situated below the front *sama* frame.



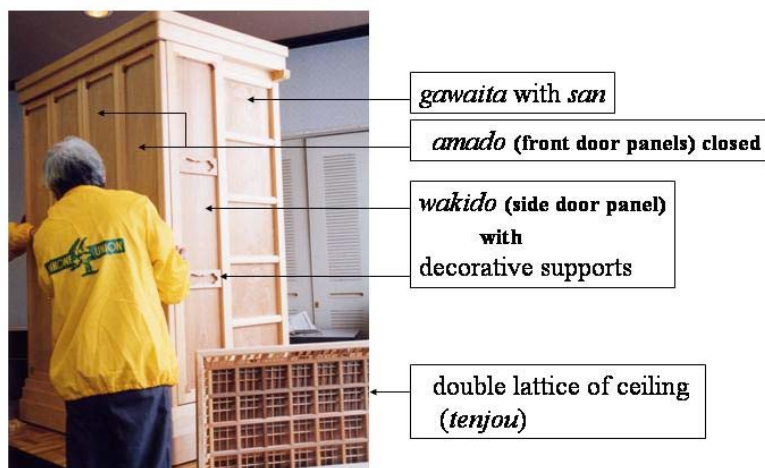
Kiji photo 20: butsudan kiji almost complete - only the front doors and shouji to be added

Then the inside parts are put in position. Two *joudan* sit on top of the *chuudan* to the left and right of the waisted *shumidan*.



Kiji photo 21: shumidan and joudan in place on chuidan

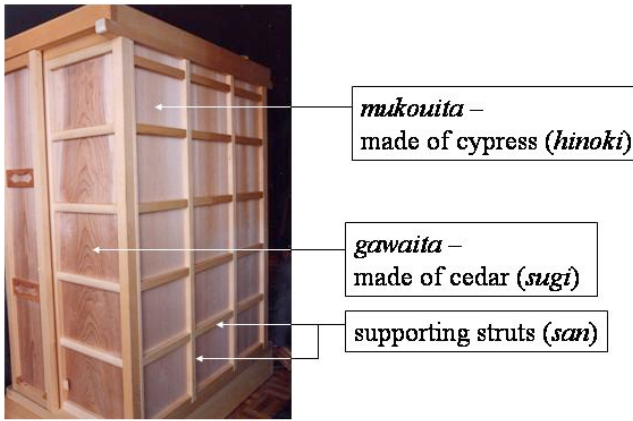
When the *butsudan* is complete the outer doors are closed and adjusted.



Kiji photo 22: completed closed sanpoubiraki (6-door style) butsudān

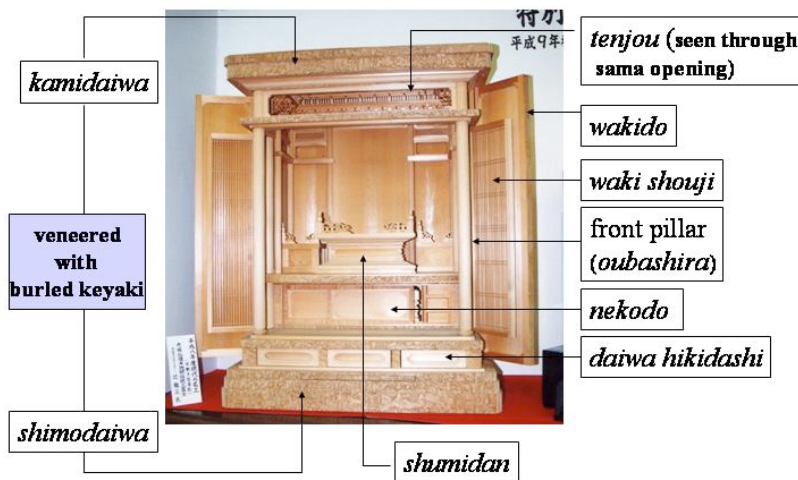
Also in this photo the *tenjou*, with two sizes of lattice and shrimp shaped framework, can be seen. Eventually the *butsudan* will be placed on the wooden floor of the *butsuma* and, to help move it, rollers (*kuruma*) will be inserted under the *shimodaiwa*. A gap of about 7 mm between the floor and *shimodaiwa* allows air to circulate thus reducing humidity and helping to prevent the deterioration of lacquer, *makie* and gilding.

“After finishing the woodworking,” says Toshimasa, “we install the *kuuden* (see *kuuden* section) and carved works and invite the customer to look at the plain wooden structures in the unlacquered state, because we want them to see for themselves that the wood is high quality and all parts are handmade using different types of wood.”



*Kiji photo 23: back and sides of completed butsudan showing supporting struts (*san*) and different types of wood*

However it is interesting how often the customer doesn't bother to take a look. "Then, we send the wooden frame and other parts to the lacquerer," continues Toshimasa. "Occasionally, if the plain wood *butsudan*, before lacquering, is especially eye-catching, it may be put on display at an exhibition or in a company display window."

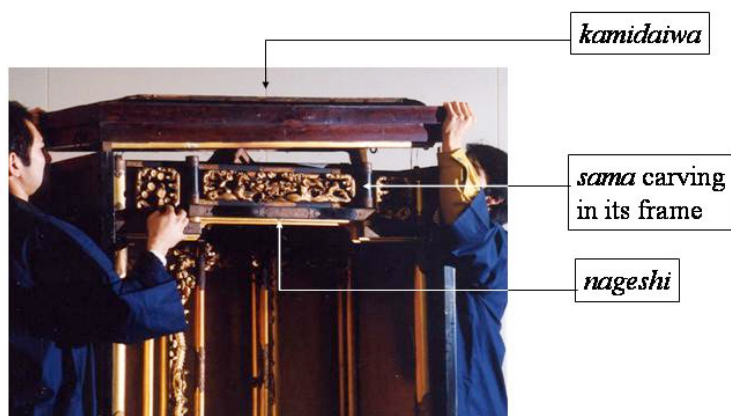


Kiji photo 24: display kiji, made by Tsuji Ryoza

This photo shows a very high quality Tsuji-crafted *butsudan*, which is made of cypress (*hinoki*) and veneered with burled *keyaki*. For clarity, only the side doors, *wakido* and *waki shouji*, have been installed however the *shumidan* and *joudan* are in place.

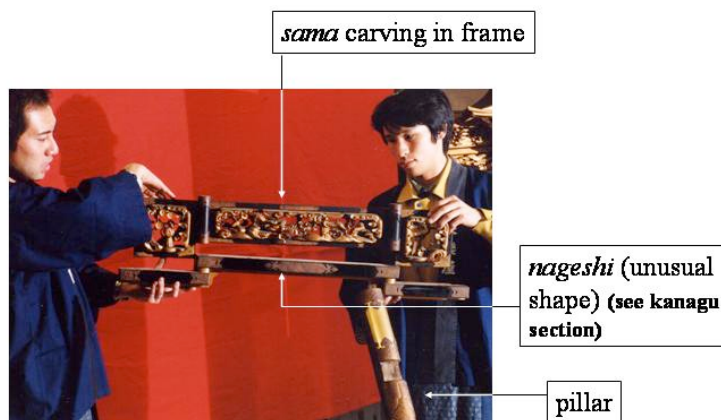
Cleaning (*Sentaku*)

About every 30 to 50 years, cleaning (*sentaku*) is carried out either by a lacquerer, a *kijishi* or perhaps by the merchant who sold the *butsudan* in the first place. The whole *butsudan* is taken apart, and each of the thousands of pieces is extracted.



for cleaning, the top (*kamidaiwa*) is separated from the *sama* carving below

Kiji photo 25: removing *kamidaiwa* for *sentaku*



Kiji photo 26: separating *sama* from *nageshi* and removing pillar

Any loose and damaged *urushi* and gilding are removed, almost to the bare wood and broken parts are replaced. Then it is re-lacquered and re-gilded where necessary. Finally it is put back together. This process can cost up to 20% of the original cost, so it is not done lightly. Please see the other sections for more details about *sentaku*.

SOURCES:

Personal interviews: Thanks to Tsuji Ryoza, Tsuji Toshimasa, Matsumiya Saburo, Ohashi Kazuo, Hamo Masahiro and Katsurada Teruo.

WEB.kiji.PDF (2005)

“Hikone *butsudan* no rekishi to enkaku” (History and Changes of Hikone *Butsudan*.)
In Tanaka Hisao (ed) *Nihon no dentou butsudan shu* (Collection of Japanese
Traditional *Butsudan*), 1977; Edited by Nomura Hiroaki. Shouei Shuppan
Corporation: Tokyo, p50.

Diagrams are by Yuriko Nishiyama and photos by Carla Eades.