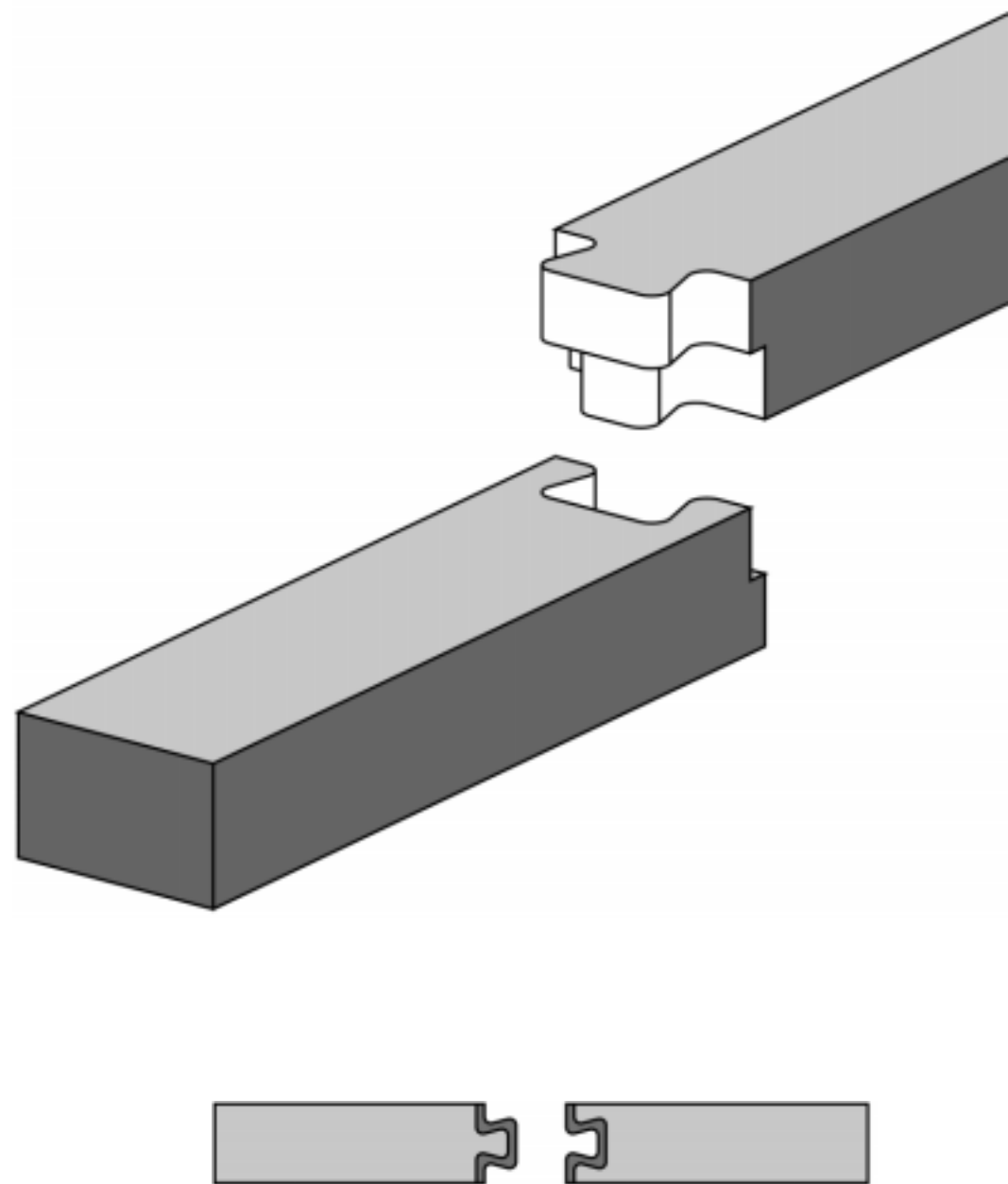




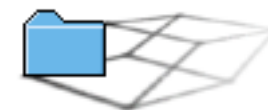
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Shouldered Dovetail

Traditionally, lengthenings with dovetail tenons were used wherever frame woods need to be secured against longitudinal extension. In contrast to the through dovetail tenon, which is a joint solely designed to resist tension, the Shouldered Dovetail Joint also keeps the frame wood onto which the dovetail tenons are worked on from slipping through. The shoulder is generated by a parallel shift of the contour of the tenon. The maximum distance between the two contours is defined by the ratio of the tenon to the width of the frame.



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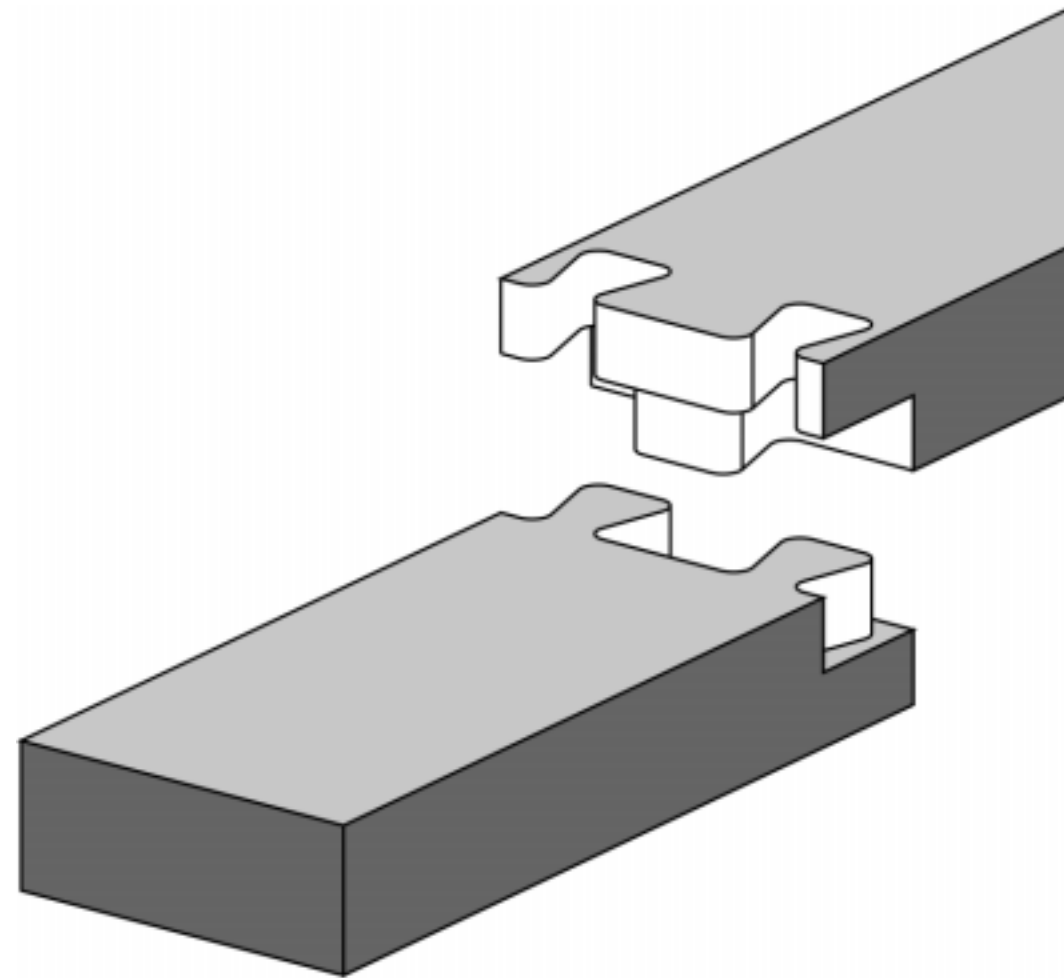




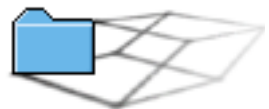
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Shouldered Triple Dovetail

While the Shouldered Dovetail is particularly suited for the lengthening of narrow framing timbers, the here presented Shouldered Triple Dovetail with the lateral dovetail tenons has been primarily developed for broader frames. The two lateral tenons and the opposing tenon prevent the framing timbers from twisting and improve at the same time the absorption of the lateral forces. The interplay between single and double tenons and top and under-sides also adds interest to the joint from a design viewpoint.



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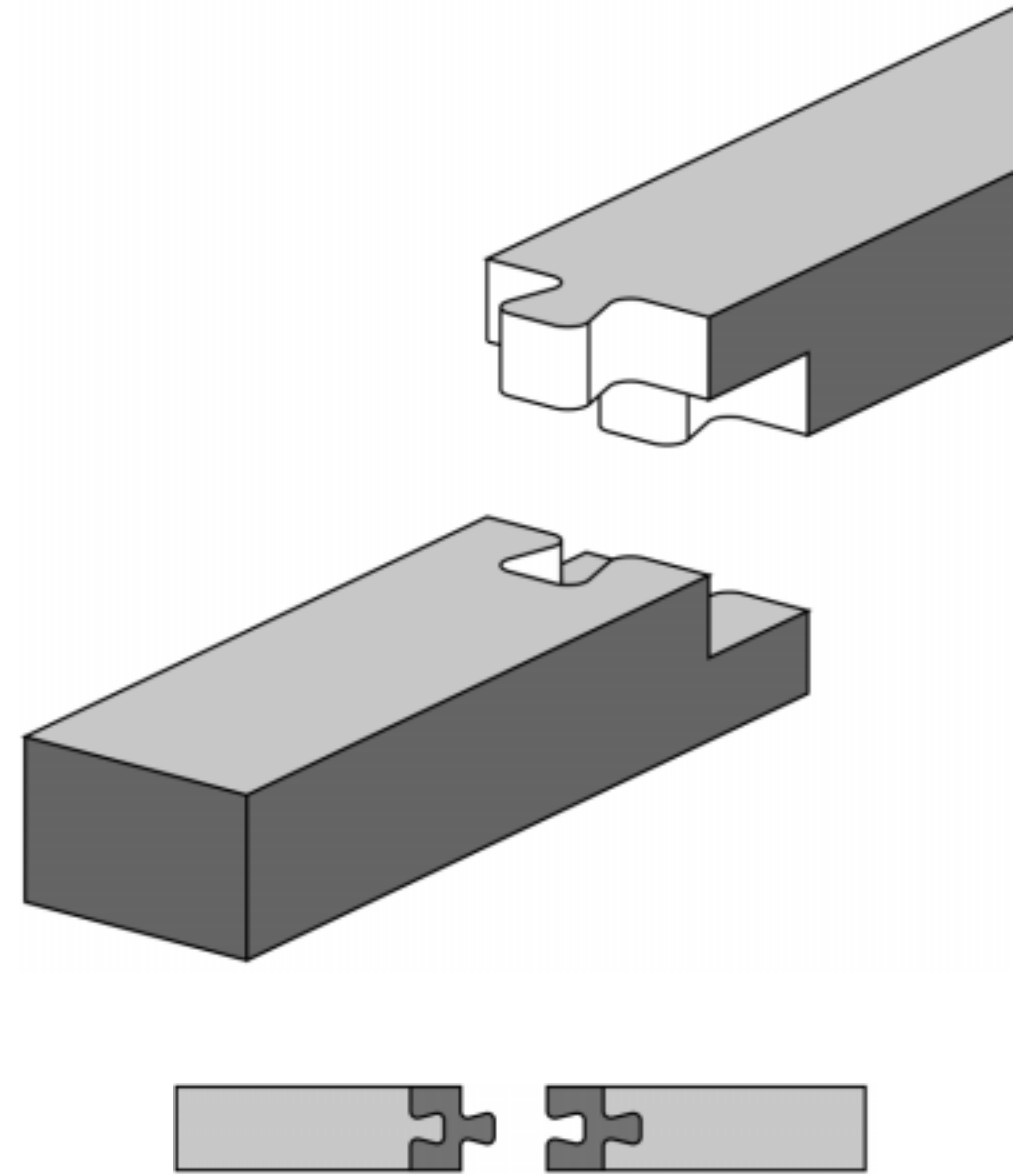




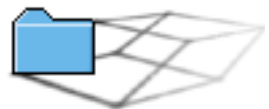
Double Dovetail

The Double Dovetail Joint combines the advantages of the dovetail tenon with those of scarf joints. They resist longitudinal tensile forces, resist shearing stress due to the size of the fitting lateral surfaces, and are secured against perpendicular shift by the scarf. There are various versions of the Double Dovetail Joint possible.

Unlike the Symmetrical Double Dovetail, the Double Dovetail with both dovetails pointing in the same direction is very little used in traditional furniture and wood construction. The reasons for this lie in the costly manual making and are thus no longer valid for the production on a CNC-router.



[→ to the data files](#)

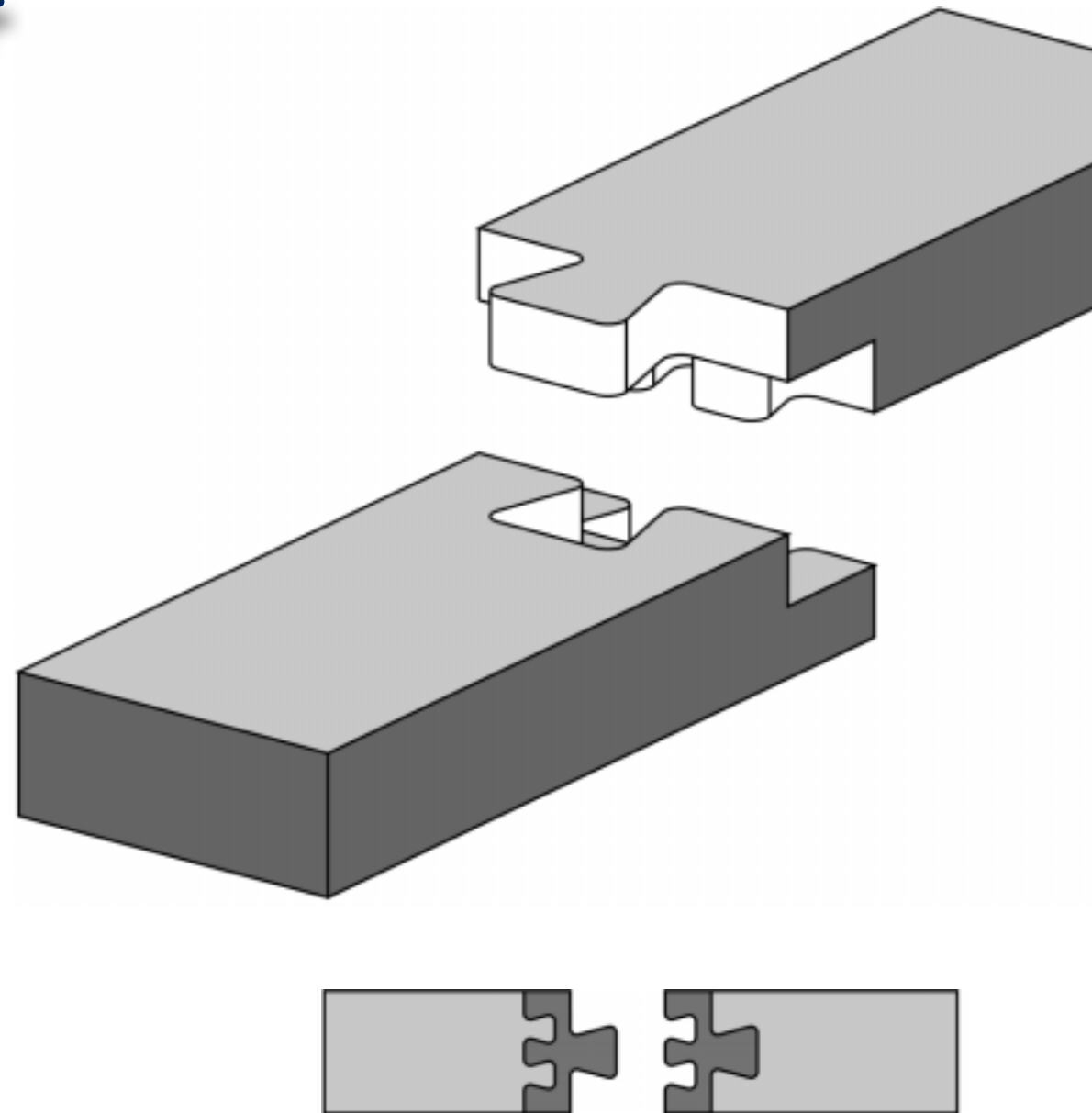




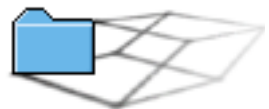
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Triple Dovetail

The Triple Dovetail is a variant of the Double Dovetail Joint and is particularly suited for the lengthening of wide framing timbers. On the top side of the closed joint only one big dovetail tenon is visible, on the underside there are two smaller ones. They prevent the framing timbers from twisting and strengthen the joint as they shorten the length of the flattened surface. Dovetail scarfs fit in with the group of the scarf joints as well as with the group of the table joints, which can occasionally lead to misunderstandings.



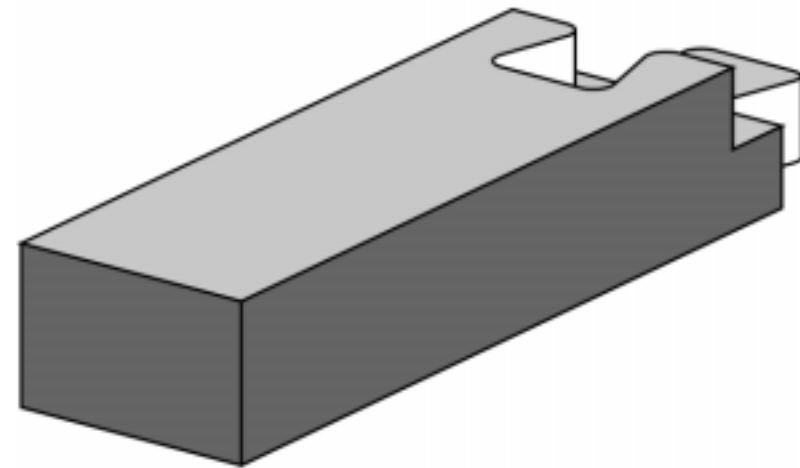
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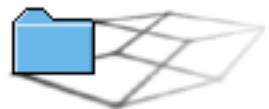


Symmetrical Double Dovetail

Model for the Symmetrical Double Dovetail is the Japanese “Ryo-men-ari-tsugi”. Its widespread use in Japanese wood construction is due to its simple and efficient making. For symmetrical joints, both parts are scribed and worked upon together. In the age of the CNC-router this advantage, which meant that a lot of time could be saved when joints were traditionally scribed, is not decisive any more. Joints that were formerly a lot more costly to make can now be manufactured just as efficiently as symmetrical joints.



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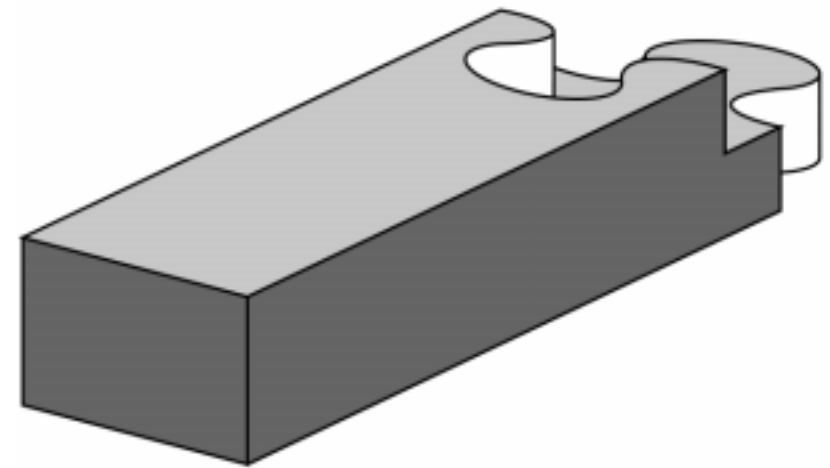


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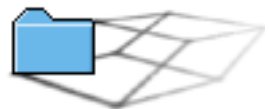
Double Jigsaw

The Double Jigsaw is a further development of the Symmetrical Double Dovetail Joint, taking into account the possibilities that come along with CNC-production. For example, the ability of the CNC-router to cut so-called free shape contours. The contours can be designed on a graphics tablet and revised in a CAD-system. The condition being, that the contour can be processed with the chosen tool.

The Double Jigsaw is a very decorative joint, which being employed as a constructive detail becomes a design characteristic of the furniture piece.



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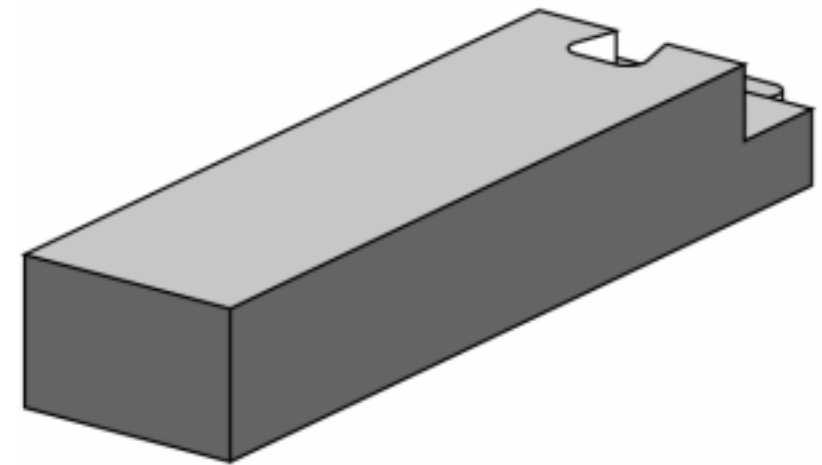




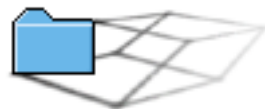
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Plain Scarf with Dovetail Keys

Loose connectors, like dovetail keys, are used wherever joints need to be opened occasionally, or where it is not possible to loose length due to just dimensions. The loose connectors can take a multitude of shapes and be made out of different materials. Depending on the choice of material for framing timbers and connectors, the joint will show more or less. If the connectors are made out of wood, they should be made out of well dired hardwood. As the loose connentor is only inlaid, the scarf needs to be supported in order to prevent it from slipping through.



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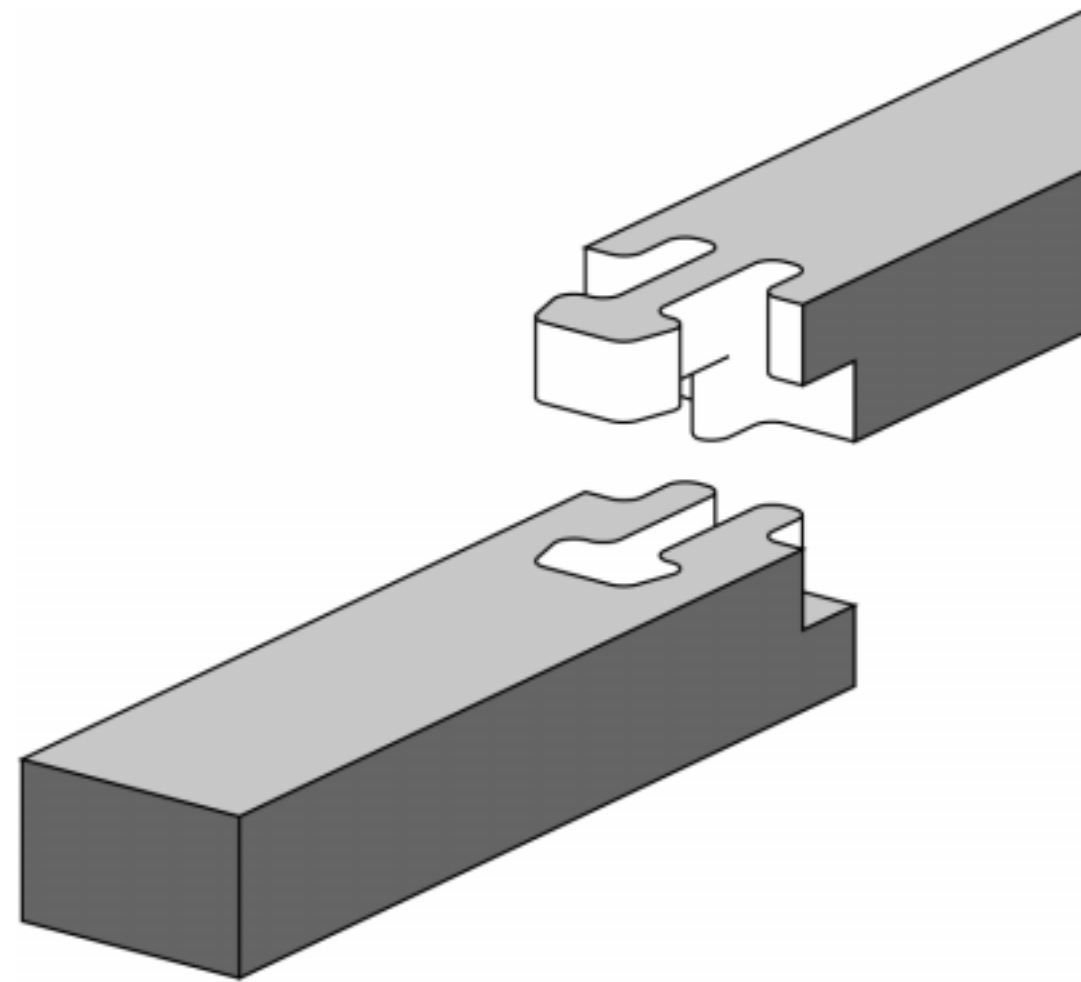


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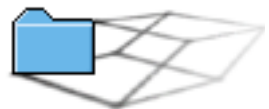
Gooseneck Mortise and Tenon Joint with Stub Tenons

The gooseneck or hammer-head tenon is widely used in Japan for the execution of lengthenings with tensile resistance. The joint is characterised by the long tenon with a head at the end that is shaped like a reversed dovetail.

The Japanese “Mechigai-koshikake-kama-tsugi” is the model for the Gooseneck Mortise and Tenon Joint with Stub Tenons. From a production point of view, it is a very costly and difficult joint. While the simple hammer-head tenon is very susceptible to torsion, the here presented gooseneck is very stable in this respect due to the two rabbets and the stub tenon.



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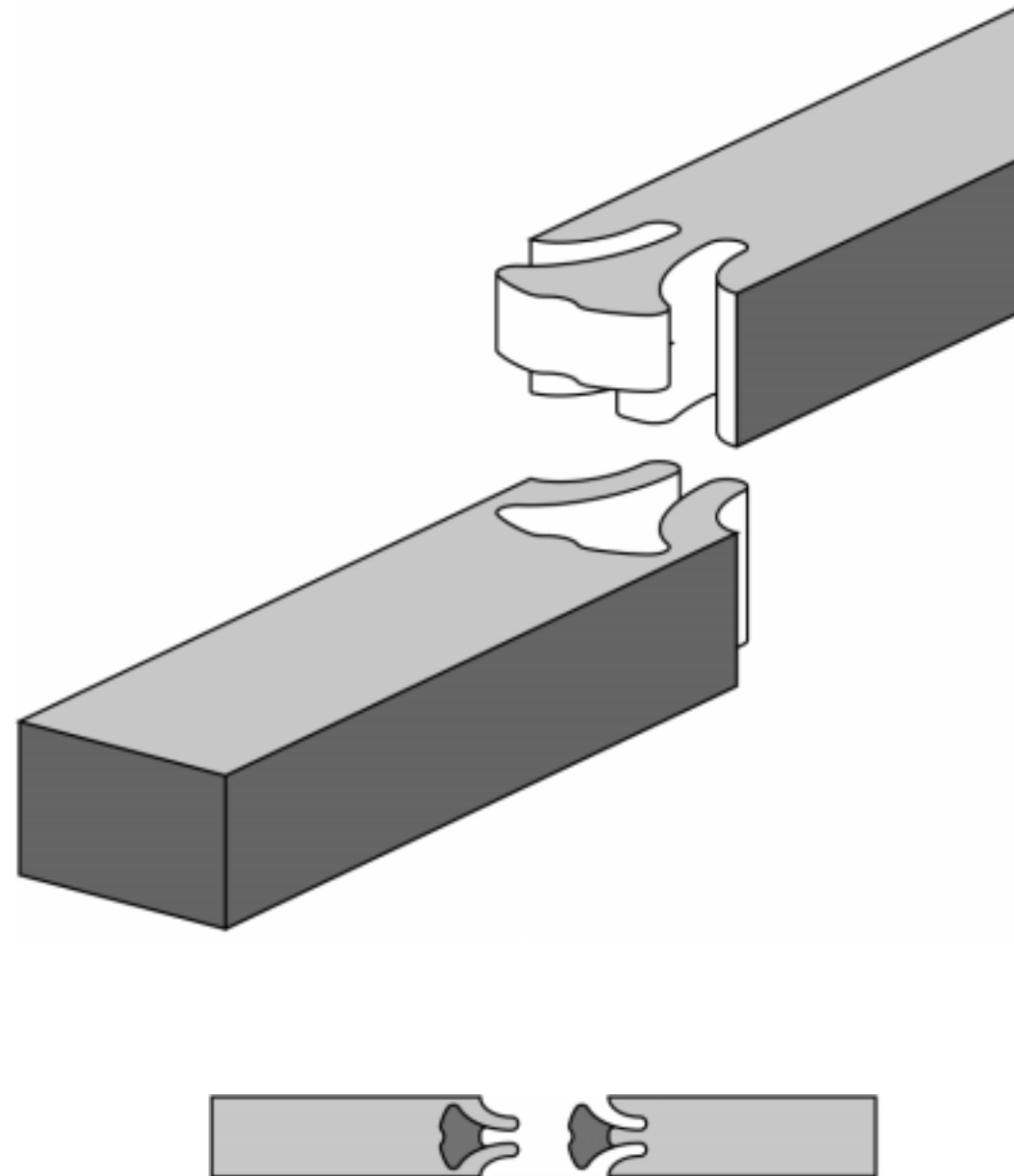


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Ginkgo Scarf with Stub Tenons

The Ginkgo Scarf with Stub Tenons is a consistent further development of the Gooseneck Mortis and Tenon Joint with Stub Tenons, taking into account the possibilities opened up through CNC-production. Without changing the technical qualities, a new and very decorative lengthening joint was created. The tenon in the shape of a Ginkgo leaf can not be produced with traditional tools.

The here presented joint exemplarily shows, that through the use of CNC-routers, it is possible to give wood joints a new, individual and so far unimagined shape while keeping their function.



→ to the data files

