

8 Steps For The Making Of A Repair Joint

1. Preparation in order to join the shaft pieces

- Saw off the damaged part of the shafts
- Both shaft pieces should be cleanly cut/sawn
- Verify both shaft pieces have no splitting and cracks
- The shaft diameters should not deviate from one another. Even 0.1mm difference can impede the making of a perfectly fit joint. If needed before making the taper, the diameter should be adjusted



2. Prepare the tool

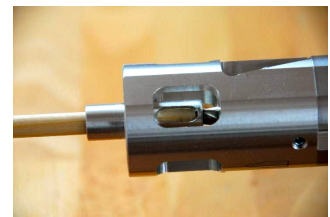
- Verify, the appropriate centering socket is mounted for the diameter to be worked on and the adapter cylinder for pointing is in the appropriate place
- Insert the power drill into the holder
- Securely clamp Arrow-Fix's drill shaft into the drill chuck of the power drill
- Verify the power drill is rotating in a clockwise/right direction
- Put on protective eyeglasses!
- Set the power drill to run continuous.
- Set the power drill speed for a 10mm wood drill bit
- DO NOT grip the turning Arrow-Fix!



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3. Drilling of the inner cone

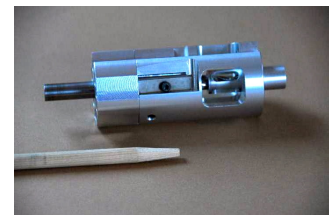
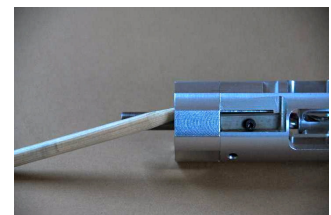
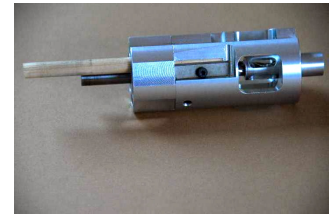
- Hold on to the shaft piece intended for the inner cone with both hands and insert it in the centering socket of the turning Arrow-Fix.
- Press with moderate pressure against the drill bit so that drilling begins
- Arrow-Fix differs to conventional drilling procedures in that the workpiece is fed into the stationary drill and not the drill into the workpiece
- As with conventional drilling procedures of a power drill, the chip removal would be encouraged with drilling in and out
- Proceed with the drilling procedure until the shaft has reached the end point. The end point is at the end of the centering socket where the drill meets the socket's wall. Be careful that the drill does not tear out the wood of the shaft because the wall of the shaft is already very thin
- While drilling, should the performance of the drill noticeable diminish, you need to stop. Remove the centering socket and drill bit and clean out the wood chips. This can, depending on the type of wood, happen more often



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4. Making the outside cone

- For the outside cone of the repair joint or for the outside cone to set an arrow tip point, you should use the sharpener with the flatter angle. (as identified by a point symbol)
- Hold Arrow-Fix in the hand and push the shaft part into the adapter cylinder
- The cutting function is like a pencil sharpener
- The cutting process is finished when the end of the cylinder is reached and there are no more shavings. Bamboo shafts are an exception. Bamboo shafts are typically hollow and cannot be cut up to the end. Here you must estimate when the desired length of cut is achieved
- For the outside cone of the nock, you need to use the sharpener with the steep angle. (as identified by a nock symbol)
- The cutting process of the nock functions like the outside cone with the flatter angle, also it is especially important here to be careful with Bamboo



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5. Inspect the repaired cones

- Fix the outside cone in the inner cone, it should easily turn and match exactly
- Depending on the situation, either the inner and/or the outside cone can be reworked with the cone drill or sharpener. Pay attention that allowances in the shaft diameter make it more difficult to make an exact joint. From our work experiences, the used wood type is decisively relevant



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6. Gluing of the shaft sections

- After the successful fabrication of the inner and outside cones, they should be glued for a long lasting connection.
- For the connection, we recommend absolutely and exclusively Epoxy
- To avoid skin irritation, it is recommendable to wear protective eyeglasses and latex gloves while working with Epoxy
- Per the manufacturer's recommendations, Epoxy is made through the mixing of a hardener and resin.
- With a spatula, the Epoxy is applied in the inner cone
- Rotate in the shaft with the outside cone into the inner cone and pay attention that the air of the inner cone can escape
- Remove from the shaft parts' excessive Epoxy
- Pay attention that the shaft parts are aligned

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7. Curing of the shaft parts

- Place the joined shafts into the v shaped prism in Arrow-Fix, in order to insure the shaft parts are aligned during the curing time
- With the O-rings, fix the shaft parts in the prism and pay attention that the glue joint is in the middle and the epoxied parts do not touch the Arrow-Fix, as it will become stuck together
- While the shaft parts cure, leave it in the prism
- The time to cure is dependent on the surrounding temperature and the type of Epoxy. Further information can be learned from the manufactures' data



8. Finishing touches

- An overflow of Epoxy can be sanded
- An indentation, perhaps caused by an inexact fitting, can be patched afterwards with a mixture of Epoxy and sawdust and eventually sanded

