

Take Apart Pike

Assembly and Maintenance

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Contents

1	Scope of Delivery	3
2	Assembly	4
2.1	Mounting the bajonett conector tubes	4
2.1.1	Heatsetting	4
2.1.2	Glueing	6
2.2	Mounting the inner conector tubes	6
2.3	Installing the thrust washer	7
2.4	Rubber Blunt	8
2.5	How to fix mistakes	8
2.5.1	The bajonett connector tube is not seated all the way	8
2.5.2	The bajonett connector tube has slipped on to far	8
2.5.3	The inner connector tube is mounted the wrong way	9
2.5.4	How to repair damaged joints	9
3	How to use your pike	10
3.1	Before Use	10
3.2	How to assemble	10
3.3	How to disassemble	10
	Appendix	11
A.1	Drawings	11

1 Scope of Delivery

Your Pike Connector Set should include the following items:

Name	Qty.
Bajonett Connector Tube ID 35 mm	1
Bajonett Connector Tube ID 32 mm	1
Inner Connector Tube OD 35 mm	1
Inner Connector Tube OD 32 mm	1
Brass Locking Pin 6 mm	2
Philips head screw 3x25 mm	2
D30 Thrust Washer	2
Antisieze Grease	1



Even though I take utmost care in comissioning every kit it is still possible something is missing. Therefore please check your order for completeness before starting the assembly process.

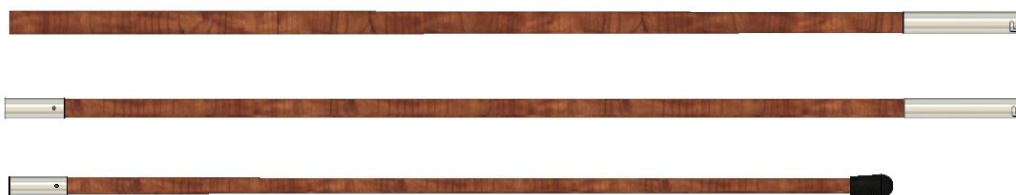
Apart from the included items you will also need the staffs. For dimensions thereof please refer to appendix A.1 where drawings are provided. Furthermore you will need some tools and glue wherefore please refer to chapter 2.

2 Assembly

Read the following instructions with care and in full before starting the assembly process!

Assembling the pike involves using dangerous tools and heat. If you assemble the pike, you are doing so at your own responsibility. **Jester of Blades can not be held accountable for your actions.** If you have never used hand tools before - **this is not the time to start.** Get help from someone experienced! There are ways to fuck this up badly rendering your connectors useless! That beeing said: Let's get into it!

The following steps need to be conducted twice - once for the bigger conector set and once for the smaller. The process is the same for both however. Here is a picture of what the pieces should look like after assembly:



2.1 Mounting the bajonett conector tubes

Using a set of calipers measure the diameter of your prefabricated pole - you can find the drawings on page 11:

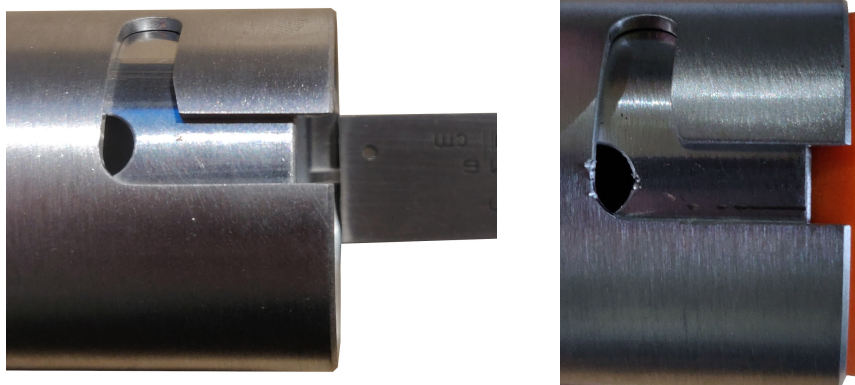
- If the diameter is way above the nominal diameter you will need to reduce it accordingly using coarse sandpaper.
- If the diameter is slightly over the nominal diameter (around 0,2-0,4 mm) you can use heat shrinking to mount the conectors.
- If the diameter is on the nominal diameter or under you are forced to glue them.
- If the diameter is way below nominal diameter (way below in this case means approx. 1 mm smaller) the pole is waste and can not be used.

2.1.1 Heatsetting

This method is not easy! There is plenty of ways to mess it up! Having a partner to help you is expedient! Only do this in a well ventilated area! Keep a fire extinguisher at hand!

The diameter of your pole should be 0,2-0,4 mm above nominal diameter. Clean the inner surface of the bajonett tube thouroughly with brake cleaner or acetone. Clean the outer surface of the inner conector tube as well then lube it using the provided grease. Insert the inner tube into the

outer so it sits 3,5 mm deep from the edge as shown in the pictures below. This is to leave space for the D30 thrust washer. Use a set of calipers to check.



Using a set of soft jaws clamp the two tubes in a vise as shown in the picture below. Make sure there is enough space around to insert the pole later. Pushing with your hand check if the inner tube can still shift. If it shifts, reposition it as before then tighten the vise by max. 1/8 of a turn and check again. The inner tube will serve as a stop for the pole and must not be able to move.

Get a bucket - preferably a non melting one - fill it with 15 to 20 cm of water to cool the joint once it's seated. On your pole make a mark at 96,5 mm. This line will be your control for if the pole is correctly positioned. After all is set, start heating the tube with a torch as shown below. Spread the heat evenly - you could melt the aluminum keeping the flame in one spot for too long. At a temperature of around 400°C the diameter has increased enough to insert.



Have your partner insert the pole while keeping the flame on the aluminium tube. Excess wood will now burn off so be careful of the fumes. Check if the line you drew earlier has reached the edge of the tube. If so unclamp the tube and chill immediately. If not pull out the pole if possible heat and try again. If your pole can not be removed anymore - congratulations you just messed up. We will fix that later - for now just chill it down by dipping it in the bucket. Let it dry.

2.1.2 Glueing

While easier than heat setting this method has it's own challenges!

The outer diameter of your pole should be 0,3-1 mm undersized. I recomend using a 2k-epoxy glue that retains some flexibility when dry. **Do not use brittle glue as shock loads will deteriorate it over time leading to your pike falling apart!**

Apply 3 layers of painters tape at 96.5mm from the edge of the pole. This line will be your stop to control for if the connector is correctly positioned. Chamfer the edge of the pole to around 2 mm. Clean the inner surface of the bajonett tube and the outside of the pole using brake cleaner or acetone.

Apply the glue to the front edge on the inside of the tube. Push and pull the tube on the pole and twist left and right to spread the glue evenly. Check if all spots on the pole are wetted by the glue. If not apply more and repeat. Once the glue is spread to your satisfaction push the tube on all the way to the painters tape. Remove excess glue and let it cure.

2.2 Mounting the inner conector tubes

The inner conector tubes must not be heat shrunk as this might lead to them not fitting the bajonett tubes anymore. Instead they need to be glued! The outer diameter of your pole should be 0,1-1 mm undersized. I recomend using a 2k-epoxy glue that retains some flexibility when dry. **Do not use brittle glue as shock loads will deteriorate it over time leading to your pike falling apart!**

Apply 3 layers of painters tape at 100 mm from the edge of the pole. This line will be your stop to control for if the connector is correctly positioned. Chamfer the edge of the pole to around 2 mm. Also apply painters tape to the outside of the tube covering it completely. This is to protect the tube from scrates or glue. Pay special attention sticking down the tape around the hole so no glue may creep underneath the tape. Clean the inner surface of the tube and the outside of the pole using brake cleaner or acetone.

Apply the glue to the front edge on the inside of the tube. **Be mindful of the orientation of the hole! It needs to be located towards the long end as shown in the picture below!** Push and pull the tube on the pole and twist left and right to spread the glue evenly. Check if all spots on the pole are wetted by the glue. If not reapply and repeat. Once the glue is spread to your satisfaction push the tube on all the way. **Make sure the end of the connector sits flush with the end of the pole.** Remove excess glue and let it cure.

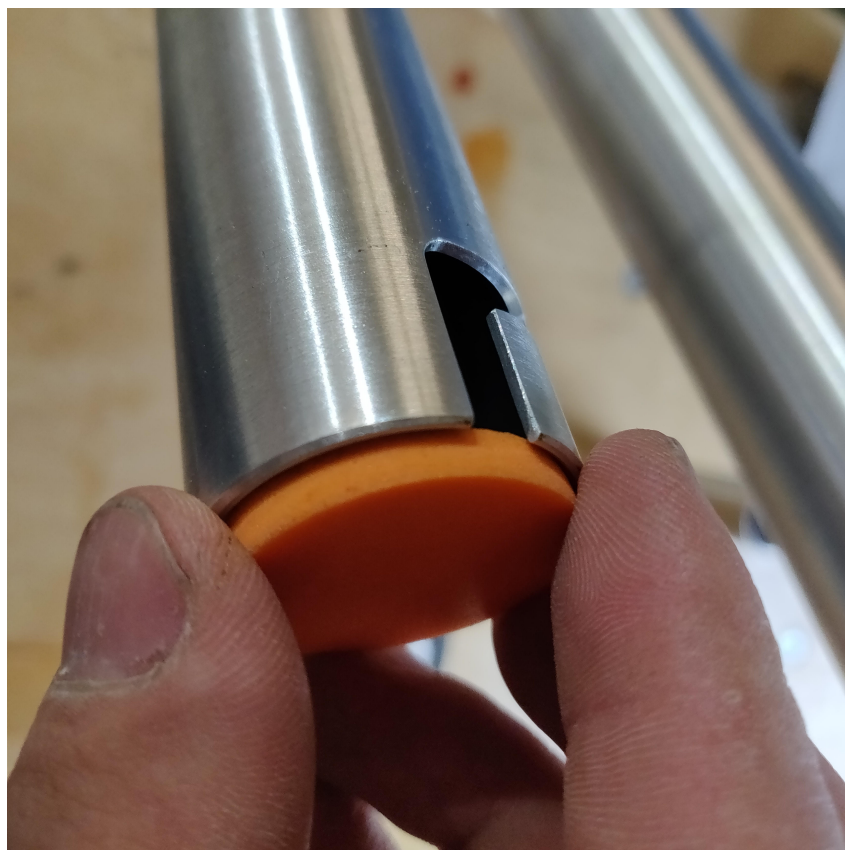


Once cured a 6 mm hole needs to be drilled in order to mount the locking pin. I recommend using a drill press. If you don't have one however carefully drilling with an electric hand drill is also viable. **Take utmost care to drill perpendicularly!** Drill 5-6 mm deep. Seat the brass locking pin by tapping it **lightly** in place with a wooden hammer. It should seat easily. If it doesn't widen the hole. Lock the pin in place using the provided philips head screw.



2.3 Installing the thrust washer

The two thrust washers provided come with two different diameters equally matching the inner diameter of the bajonett connector tubes. To install them just insert one each into the bajonett connector tubes - they will be held in place by friction. Make sure they sit flush on the bottom of the connector.



2.4 Rubber Blunt

Last you will need to mount the rubber blunt on the tip of your pike.

If the diameter at the tip of your pike is undersized or exactly 25 mm: it is necessary to use adhesive to keep the tip in place. The 2-part epoxy you used for the connectors is very well suited. Line the inside of the rubber blunt with the adhesive, then by twisting the blunt left and right on the pole spread the adhesive to get a good bond.

If your tip end is oversized by 0,5-1,5 mm the tip will be held in place well enough by friction alone. Chamfer the tip to around 1-2 mm and start the press fit by hand. Drive the blunt all the way by stomping it on a firm solid surface (i.e. concrete floor/anvil) until it is seated all the way.

If your tip end is oversized by more than 1,5 mm: you need to reduce the diameter until the blunt fits using coarse sandpaper, a knife or a planer. Be careful to get a smooth transition to the remaining material. A step will leave the tip prone to snapping, leaving the tip unprotected leading to injuries.

2.5 How to fix mistakes

Remember how I stated earlier that if you messed up we would fix that later? Well now is the time here we go. Most of what I share here I have done and fixed - so no shame. Shit happens, it's just really unfortunate.

2.5.1 The bajonett connector tube is not seated all the way

This is really common when heat setting the tube as it's easy to underestimate how quickly the tube needs to be seated before temperatures equalize. First why is it so important that the tube be seated properly? The forces between the individual pike pieces will be transmitted through the contact between the ends inside. The washer can only compensate for some minor tolerances. If the gap exceeds the designed dimensions the forces will be transmitted by the brass pin consequently destroying the connector rendering your pike unusable.

Measure the distance from the front of the tube to the front of the pole. We will distinguish between two cases here:

- **The distance lies between 104 to 125 mm:** You are lucky it's an easy fix!
 - Fabricate a round spacer from wood or any other material stiff enough. Choose the thickness of the spacer to bring the distance to 103,5 mm
 - Insert the spacer into the tube and measure again. If you are measuring 103,5 mm you are golden. Insert the trust washer to keep the spacer in place - nobody will ever know.
- **The distance exceeds 125 mm:** You are not so lucky and need to start over
 - Saw off the pole shortly behind the tube.
 - Drill out the remains

2.5.2 The bajonett connector tube has slipped on to far

This has never happened to me, so I can only speculate on what I'd do. And the only fix that comes to my mind is to start over:

- Saw off the pole shortly behind the tube.
- Drill out the remains

2.5.3 The inner connector tube is mounted the wrong way

This is bad and depending on the type of glue you used there is little hope I'm afraid. I tried to thermally decompose the glue using a torch which kind of worked but left me with a lot of residue inside the tube. If you ever have to try this be warned of the toxic fumes this exposes you to. It really is no fun!

2.5.4 How to repair damaged joints

If you happen to find your joints to be scratched or burred resist the urge to force them together anyways (don't ask how I found out). Instead degrease your joints thoroughly using brake cleaner. Use fine sandpaper (around 600 to 800 grit) and polish out the scratches or burrs. Check if the burr is gone using your fingernail. If so, carefully clean away all grinding dust. Leaving any small residue can make your life hell (again don't ask how I found out). Relubricate and assemble - it should slide smooth again. If they feel gritty - Stop; Repeat!

3 How to use your pike

3.1 Before Use

As every sword of yours, your Pike will last a lot longer if you properly and regularly maintain it. Please take the following advice. Before assembling the individual pieces check the joint surfaces visually. Make sure the joint surfaces are **clean and well lubricated** with the grease provided. If you ever run out of grease refills can be found in the "Mixed-Bag" Section of the Jester shop.

3.2 How to assemble

To assemble your pike first follow the steps described in section 3.1. Take the grip section and the middle piece and insert the joint - it should slide in smoothly. In case you witness grinding - Stop! Repeat section 3.1. If it keeps grinding look for scratches or burrs and follow instructions given in section 2.5.4.

After the joint is slid in all the way, push the joint together to compress the D3O thrust washer and turn to lock the joint. Repeat with the tip piece.

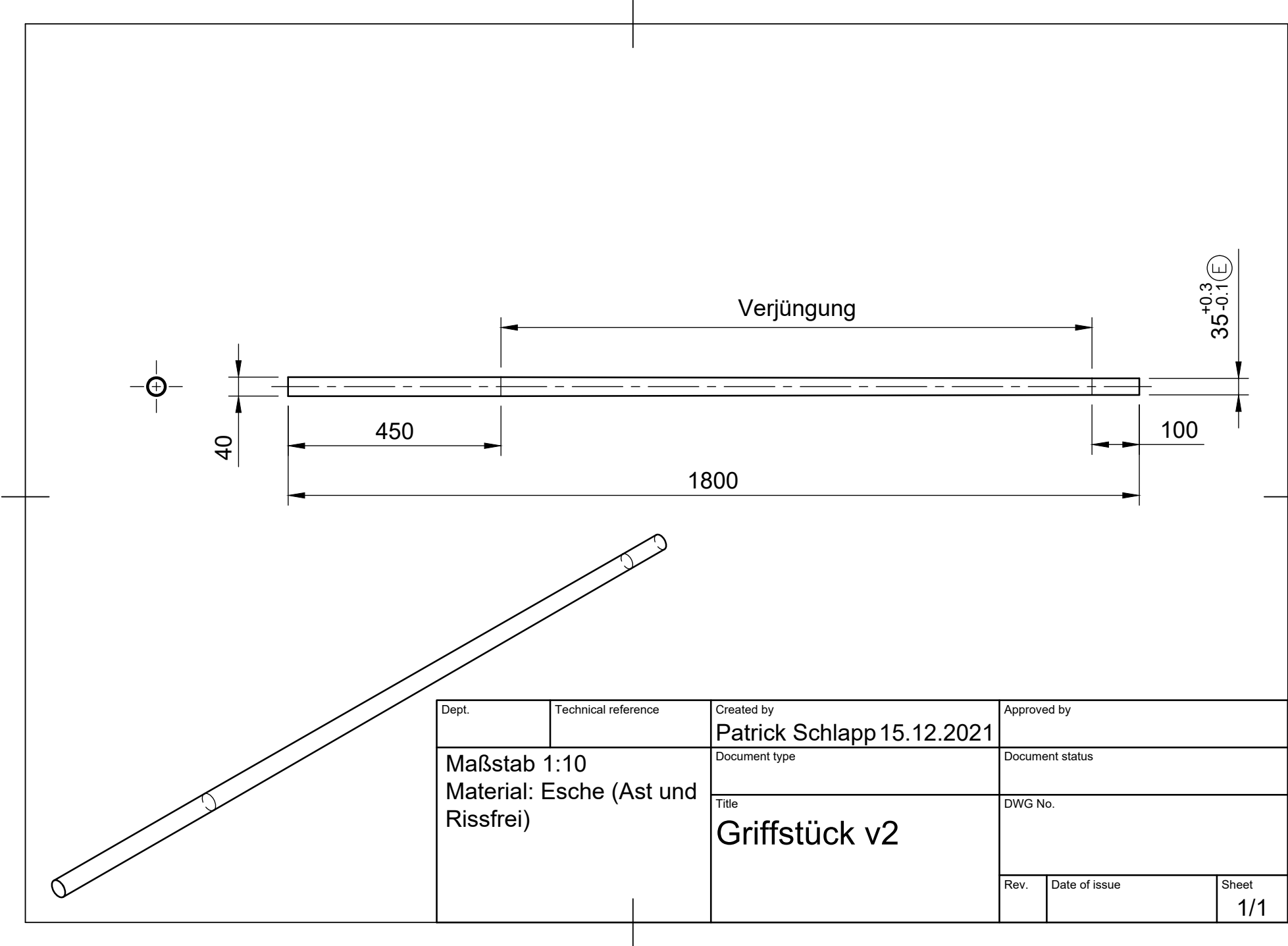
3.3 How to disassemble

To disassemble start with the tip joint. Push the joint together to unload the pin, then untwist. Pull the tip piece out all the way. Repeat with the mid section.

Appendix

A.1 Drawings

Find attached drawings for the individual poles. These are tapered ones which makes the pike more maneuverable - similar to distal taper in swords. Not everyone can do this however, so you can also order the poles with constant diameters 35 mm 32 mm and 29 mm. You may also experiment with different lengths though you may only go shorter than specified in the drawings! Recommended material is ash. If you use denser woods you should use shorter poles in order not to overload the joints. All poles need to be free of knots and cracks.



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