

Carbon Fibre Fishing Pole Repair Kit

Despite the strength and durability of carbon fibre fishing poles and fishing rods, fractures or complete breaks in the pole do happen from time to time.

This Easy Composites Carbon Fibre Fishing Pole Repair Kit includes all of the necessary materials and equipment to complete the repair and requires only competent practical skills and a couple of hours of your time to repair your broken or fractured fishing pole or rod so that it is as strong as it was before the damage occurred. The kit includes enough material to allow for the repair of at least 3 broken fishing rods.

The numbers for the sections in this guide relate to our tutorial video which can be found on the Fishing Pole Repair Kit product page on the Easy Composites website or on our YouTube.

www.easycomposites.co.uk/instructions

1. Kit Contents

- 150mm x 1000mm ProFinish 90g Plain Weave Carbon Fibre Cloth.
- 154g EL2 Epoxy resin.
- 46g AT30 Fast Epoxy Hardener.
- 10 metres of composites heat shrink tape.
- 120, 240, 400 and 800 grit abrasive paper.
- 2x laminating brushes, mixing cups and sticks.
- Polishing Compound
- 3x Alcohol Wipes

Use this kit to:

- Add strength to a fractured or weakened section of pole or rod
- Re-join a pole or rod that has been completely broken in two
- Patch over a hole in a pole

Before you begin - Using a 'Jig' for poles that are broken in two

Where a pole has been completely broken in two it will probably be necessary to 'jig' the pole or rod to hold the two sections of pole together whilst the repair is made. Supporting the pole in this way, so as to allow access all around the pole whilst the repair is made, is best done using a simple 'Jig' which will need to be constructed following the plans at the end of this guide **before you start the repair**.

Step By Step Practical Guide

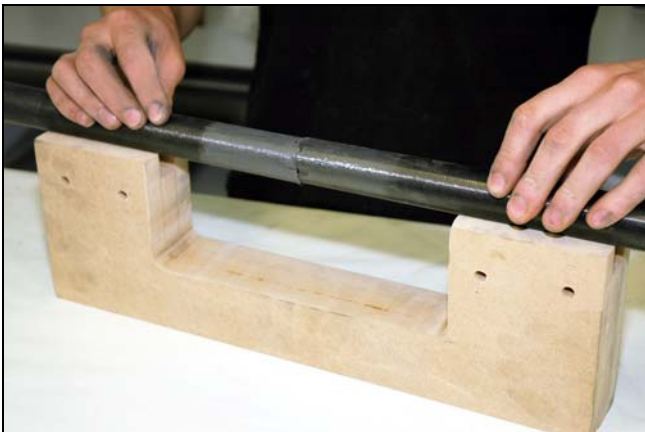


2. Use abrasive paper to 'key' up repair area

Use a small piece of the 120grit abrasive paper to roughen up the surface of the rod or pole around the area where the carbon fibre 'bandage' will be wrapped. This provides a good 'key' for the repair to bond to. Typically, you will be applying the bandage in an area of 60mm (2") beyond the edge of any damage. Make sure you do this to both halves of a pole that is broken in two.

3. De-grease repair area with alcohol wipe

Use one of the small alcohol wipes to wipe down the whole of the repair area. This ensures that you remove any grease from your fingers that will prevent the resin from bonding properly to the rod or pole.



4. Align pole (if necessary) using jig

If you are repairing a pole that has been broken in two you will need to align and support the two halves of the pole either side of where the repair will be made.

To do this we suggest constructing a 'jig' as shown in the plans at the end of this guide. Having made your simple jig, secure the two halves of the pole and ensure they are correctly aligned.



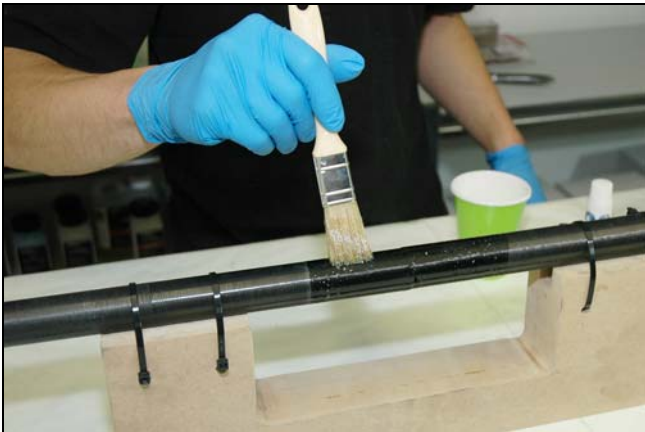
5. Mix resin for 'tack' layer

Next we will apply a thin layer of resin to the pole and allow it to cure to a tack. This will give us a sticky surface to apply the carbon too in a later stage.

Using one of the cups provided, accurately mix a very small amount of resin with hardener at a ratio of 100 parts resin to 30 part hardener. It is very important that this ratio is adhered to as closely as possible.

10g of resin and 3g of hardener should be about right for an average sized repair.

Take your time and mix the resin thoroughly. Any unmixed resin will not cure. It is a good practice to transfer the mixed resin to another container before using it. This avoids the risk of applying unmixed resin from the sides of the mixing cup to the repair.



6. Apply thin 'tack' layer of resin

Using one of the supplied brushes, paint a thin coat of the mixed resin all over the repair area. Try to apply the resin as thinly as possible ensuring it is worked well into any cracks or fractures.

After you have done this look carefully at the underside of the repair area. If any 'runs' of resin are forming remove them using your brush.

7. Set aside to cure for around 4hrs

You now need to wait for around 2-3hrs (slightly more or less in warm or cold environments) for the first coat of resin to almost cure. When the resin is firm but still tacky (i.e. you can get a fingernail into it but it's not wet on your finger) then you're ready to continue.



8. Cut carbon fibre for repair bandage

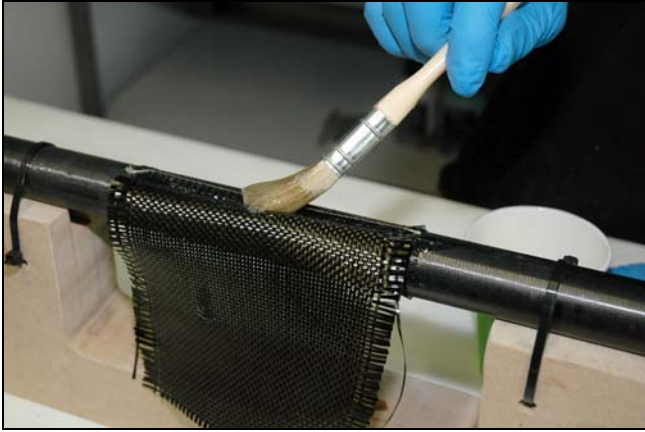
Use a pair of normal household scissors to cut a section of the carbon fibre fabric to a size that will allow you to extend it about 60mm past either side of the damaged area. You then need to allow sufficient fabric to run approximately 3 times around the tube or rod. This will result in a repair of around 0.75mm in thickness.



9. Wrap carbon fibre around the pole

Taking the piece of cut carbon fibre fabric, align the fabric along the pole and press the leading edge of it onto the tacking resin.

Press it down with your fingers so that it grips firmly. Wrap the carbon once around the pole and leave the excess hanging down.



10. Wet out fabric with a new mix of resin

Using a new cup accurately mix a slightly larger amount of resin and appropriate amount of hardener at a ratio of 100 parts resin to 30 parts hardener. Again, the ratio must be exactly right.

It is a good practice to transfer the mixed resin to another container before using it. This avoids the risk of applying unmixed resin from the sides of the mixing cup to the repair.

Brush a thin layer of resin onto the dry fabric, just enough to wet it out. Next, wrap the carbon fibre around the pole again and dab the fabric with your brush to wet it out again, applying a little more resin if necessary. Complete the process for the remaining number of wraps around the pole.



11. Wrap the repair with shrink-tape

Next you want to spiral wrap the whole repair with the special Hi Shrink heat-shrink tape supplied.

The shrink tape included in the kit is release coated on the inside only so it is important to ensure that you use the tape the right way around. As the tape is supplied, the inside of the roll is the release coated side so when you apply the tape, wind the tape around the pole the same way that it would wound as supplied.

To do this, stick one end of long length of the tape to the pole (using normal sticky tape) on part of the pole not wet from resin. Spiral wrap the shrink tape all the way around the repair until past the other end of the repair. Secure the tape using another bit of normal sticky tape.

12. Heat shrink-tape with a heat gun

Use a heat gun, or a hair dryer with a very high heat setting to heat the tape so that it starts to contract. This special composites shrink tape will contract by around to 10% at 80°C. This will compress the whole area of the repair, squeezing out any excess resin and resulting in a very strong repair but it will not appear to be a dramatic contraction; this is perfectly normal for a composites shrink tape, the contraction is not dramatic but the pressure is very high.

13. Leave to fully cure (around 6+hrs)

Leave the part to cure for a period of around 6hrs+ in an ambient temperature of 20°C.

14. Remove the composites shrink tape

Once the part has cured, remove the shrink tape tape. You now have a full strength repair.



15. Rub smooth with abrasive paper

At this stage, you could leave the repair as it is, or, you could choose to use the included abrasive papers to smooth and polish the repair. If you choose to do this, start with the 120 grit, then progress to 240 and so on. You can use the abrasive papers with water to stop them from clogging.

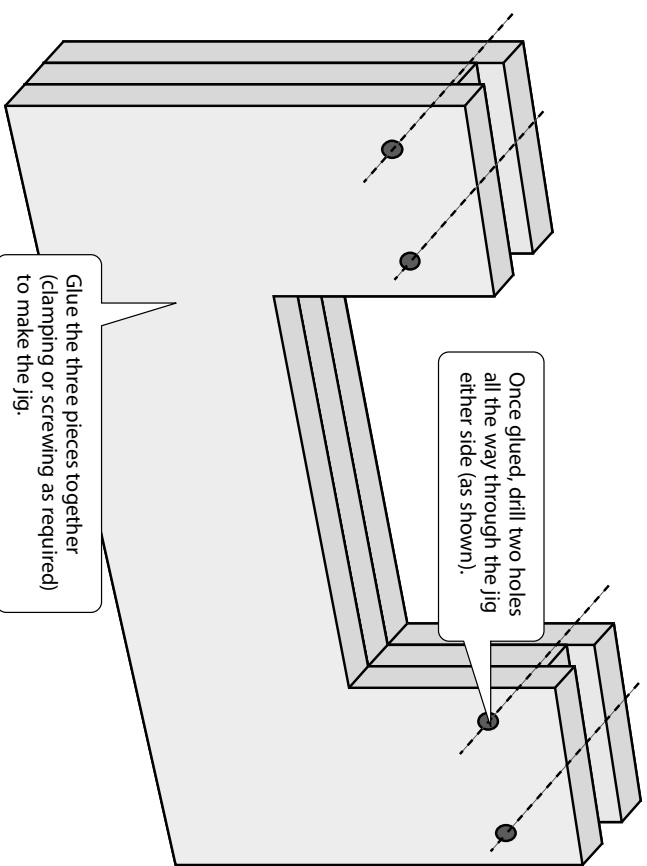
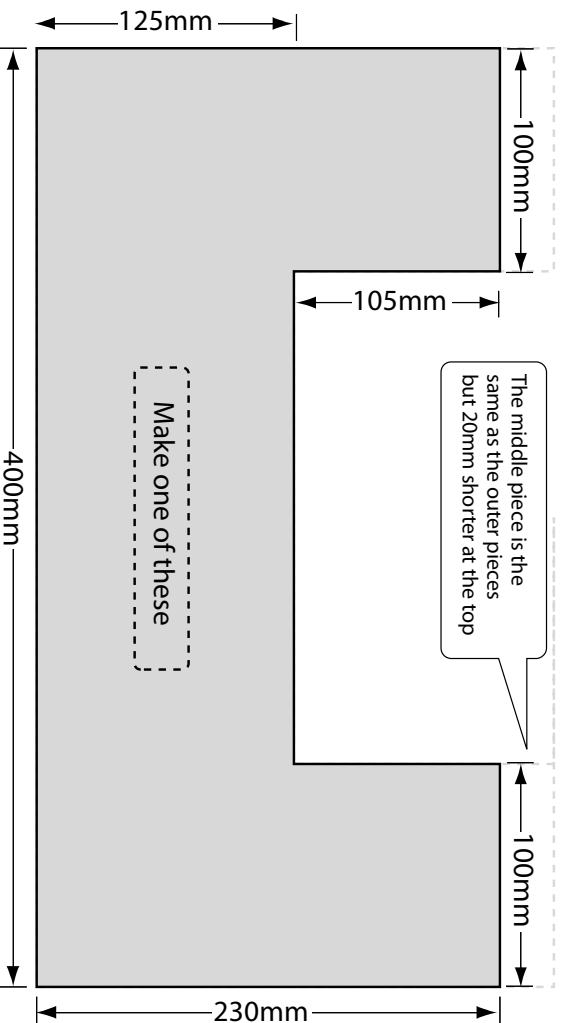
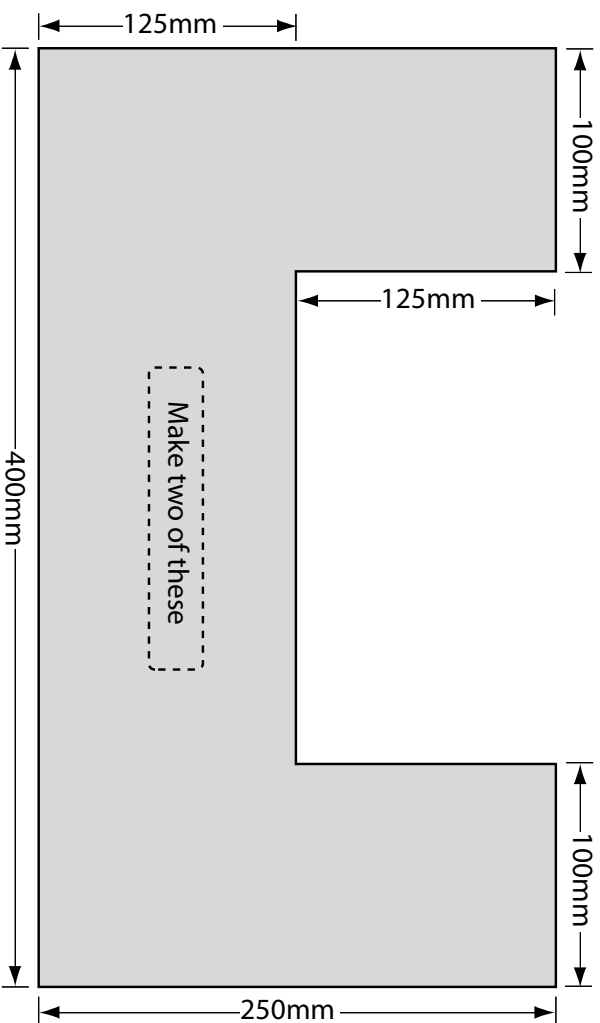
When sanding the repair, we very careful not to sand the original parts of the tube as this will reduce their wall thickness and make them weak.

Only sand the new repaired area and only remove as little material as you can to leave you with the finish you require.

Included in the kit there is even some polishing compound so that you can finish the repair to a smooth shiny gloss.

Notes

Fishing Pole Repair Jig Plans // Not to scale



Description

Where a fishing rod or pole has been completely broken in two or heavily damaged it is necessary to support both pieces of the pole in a jig. The jig keeps the two pieces of pole in contact with each other and correctly aligned whilst a repair is undertaken.

If your pole repair requires such a jig feel free to make it in any way you see fit but if you want a little guidance then these simple plans mean you can quickly make an adequate jig suitable for any number of pole repairs using only basic tools and a sheet of plywood or MDF.

Instructions:

1. Starting with a sheet of plywood, MDF or similar of a round 10-15mm mark out two copies of the shape shown in Figure (1) and one copy of the shape shown in Figure (2).
2. Using a hacksaw or jigsaw cut out all three shapes.
3. Glue the three sheets together, aligned at the bottom, as shown in Figure (3). Screw the sheets or clamp them whilst the glue dries.
4. Drill four 5mm holes through the jig.
5. Secure the jig by clamping it into a bench-top vice.
6. For each repair that you do pass plastic 'zip ties' through the holes in the jig and around the sections of pole. Tighten all four zip ties to hold the poles firmly in place.

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The Easy Composites Carbon Fibre Fishing Rod / Pole Repair Kit (also sold under our Carbon Mods brand) and these instructions were created by Easy Composites Ltd/Carbon Mods

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About Easy Composites Ltd

Easy Composites Ltd is dedicated to the supply of advanced composites materials and equipment, training and technical support. We make extensive use of our workshop facilities to continually refine the materials, equipment and techniques that we recommend and supply, leveraging the practical experience of a busy composites workshop to ensure that we understand the problems, and have the proven solutions to a huge range of advanced composites processes.