

HOW TO ...

Repair inflatable boat, RIB, RHIB, SIB and kayak collars, inflation tubes or sponsons

Losing air in your inflatable boat? RIBstore explains how to repair inflatable boats, RIBs, dinghy, life rafts and inflatable kayaks. All makes of inflatable boats, including the market leading Avon, Zodiac and Bombard will need to be repaired at some point in their life. Repairing punctures and tears in Hypalon or PVC fabric of RIB collars or inflatable boat tubes is simple and effective - when you know how!

First things first; you will need to identify the boat or dinghy tube or collar fabric that your RIB, Inflatable Boat or life raft is made from, i.e. is your boat made from Hypalon, PVC or polyurethane (PU)? It is very important that you identify the fabric before you start a patch repair. The type of fabric that your boat is made from determines the type of glue or adhesive, solvent and the patch fabric that is required to undertake the repair. If you are unsure as to which type of fabric your boat, dinghy or RIB collars is made from then go to <http://www.ribstore.co.uk/advice/advice-and-information> to help identify whether the fabric is Hypalon, PVC or PU and also to obtain the correct materials for the job.

Next; successful repair of inflatable boats, dinghy, RIB collars and inflation tubes are dependent upon the environment in which the boat fabric repair is carried out - ideal conditions are; relative humidity less than 60% (low cost humidity meters can be obtained from most good DIY stores), temperature between 18°C and 25°C and a dry, shaded but well-ventilated work area. The materials that you use are highly inflammable so there should be no naked flames in the vicinity.

Inflatable boat repairs of tube and collars can be divided into small tears/punctures and larger tears (over 50mm long). Small tears/punctures in Hypalon, PVC and PU can be repaired with a single patch to the outside of the tube using either 1-part adhesive for temporary repairs, or 2-part adhesive for permanent repairs. Larger tears must be repaired by fixing a patch both on the inside and the outside of the tube.

Make sure you have all the correct materials and tools ready before you start the job. Complete inflatable repair kits or individual materials for this job can be found at www.ribstore.co.uk

Materials & Tools required to complete this job:

- Adhesive. Single part for temporary repairs, 2-part for permanent/larger patches/tears greater than 50mm long
- Correct Hypalon, PVC or PU fabric patch (2 x patches if the tear is greater than 50mm long)
- Piece of polythene (if tear is greater than 50mm long. Cut to same size as inner patch)
- Correct solvent/primer (Hypalon Solvent Cleaner for Hypalon and MEK or Acetone for PVC & PU)
- Sandpaper for Hypalon and PU fabric
- Mixing stick if using 2-part adhesive e.g. clean lollipop stick or epoxy mix stick
- Clean, lint-free cloth
- Short/stiff paint or glue brush
- Removable marker pen or pencil
- Masking tape
- Seam roller or rounded object e.g. screwdriver handle to remove air bubbles
- Heavy weight to hold patch in-place whilst curing
- Hot air gun or hairdryer
- Tools and materials can be purchased www.ribstore.co.uk

Now you are ready to get to work on repairing the leaking tube:

1. Locate the tear or hole on the inflatable boat collar or tube. If unsure as to where the puncture is located, e.g. you have a 'slow puncture', then apply soapy water to the inflated tube and observe any bubbles forming at the puncture. Mark the location, dry the area and deflate the tube.
2. Cut a fabric patch (2 if tear is greater than 50mm) with rounded corners, allowing a minimum 5cm overlap around the hole/tear in the inflatable collar or tube. Place the patch over the hole and mark around the patch on the tube with a pencil/removable marker. If the tear is greater than 50mm then also cut one matching shaped piece of polythene.

3. For Hypalon and polyurethane (PU) patches - abrade the back of the patch together with the marked repair area, with abrasive paper to achieve a 'key' for the adhesive. Do not over-abrade as this could damage the fabric. There is no need to abrade PVC fabric.
4. Clean/prime the back of the patch and the repair area. Using a clean dry lint-free cloth, wipe with the correct solvent for the fabric of your inflatable tube i.e. Hypalon Solvent Cleaner for Hypalon or MEK solvent or acetone for PVC/PU fabrics. Wait until the solvent has evaporated. (N.B. with PVC fabrics, it is normal for the area to become 'tacky' when MEK/acetone solvent is applied).
5. Mask around the repair area on the inflated tube or inflatable collar with removable masking tape to prevent unsightly adhesive 'overspill' when applying the adhesive. Allow a 2-3mm gap around the pencil/removable marker line to allow for some stretch in the repair patch when applied.
6. Temporary repairs can be successfully achieved using single part adhesive (proceed to next step if using a single part adhesive). 2-part adhesive must be used for permanent repairs or for larger patches and tears greater than 50mm. For 2-part adhesive, mix it as per the tin instructions. Read the following steps before mixing the 2-part adhesive as they generally have short curing times.
7. If the tear is greater than 50mm using a brush applicator apply an even, thin coat of adhesive to the back of one of the patches and to the inner tube surface around the repair area. Leave to dry for at least 20 minutes. Apply a second and third coat, leaving each coat to dry for 2 minutes or until tacky. Place the piece of polythene over the applied adhesive on the patch so that the patch can be rolled-up into a cigar-shape without the adhesive sticking to itself. Unroll the patch inside the tube, position over the tear and then peel away the polythene to allow the two glued surfaces to meet. (N.B. Hypalon and PVC/PU marine glues are 'contact' adhesives). It is important to position the patch correctly, it will not be possible to re-position once in place. Smooth the patch firmly using a seam roller or rounded object (e.g. piece of shaped hardwood or screwdriver handle), working from the centre of the patch outwards to smooth out any air bubbles and ensure good contact.
8. Using a brush applicator apply an even, thin coat of adhesive to both the back of the external Hypalon, PVC or PU repair patch and the masked repair area on your inflatable boat collar or tube. Leave to dry for at least 20 minutes, apply a second and third coat, leaving each coat to dry for 2 minutes or until tacky. Apply the patch carefully to the repair area. Position the patch correctly as it will not be possible to re-position once in place. Smooth down the patch firmly using a seam roller or rounded object (e.g. piece of shaped hardwood or screwdriver handle), working from the centre of the patch outwards, to smooth out any air bubbles and ensure good contact.
9. If the repair patch is not sticking in places or air bubbles remain, then the area can be gently heated with a hot-air gun or hair drier and 're-worked'.
10. Remove the masking tape and clean off any excess adhesive from the repair area with the correct solvent (Hypalon Solvent Cleaner for Hypalon or MEK/acetone solvent for PVC/PU fabrics). It is important to remove any excess adhesive. If this remains on the surface of your inflatable collar or tubes it will turn an unsightly brown!
11. Place a smooth sided heavy weight on the patch and allow to 'cure' for at least 24 hours before re-inflating the boat collar or tubes to check that the repair has been successful and before re-launching the boat.