

AMBIENT CARBON FIBRE BOOMS

Maintenance and repair instructions.

Introduction

Although a carbon fibre boom seems to be a simple mechanical device it will pay to get to know all the details and ways of cleaning, repairing and maintaining the boom. Your knowledge of the boom's working will help to give it years of good service, and easy maintenance will return it to an "as new" feel.

Construction

The booms are constructed of telescoping carbon fibre tubes with a 1mm air gap between tubes.

The segments have anodised aluminium screwlock fittings and the largest segment has also an aluminium threaded end to which accessories and a rubber bung can be screwed or fitted respectively. The 3/8" tip is glued to the thinnest segment.

Tip

The tip is made of stainless steel with a slot for internal cables and is glued to the inside of the thin segment. An anodised and coloured collar ring, glued to the outside of the tube serves as an identification mark (red QP; blue QL & QX) and gives added strength at the end of the tube.

Screwlocks

Screwlocks are always the same construction whether on a QP, QX or QL boom. Sizes vary but the principle and parts are the same.

There are 5 parts to the screwlock, all are important.

- Starting from the bottom there is the threaded base which is glued to the carbon fibre tube
- It has a groove at the back for a silicone O ring which seals the mechanism from dirt
- A fine machine threaded area for the hand nut
- At the top is an concentric taper with a steel pin
- Then the POM slotted dual tapered compression ring
- Finally the hand nut with knurling, QP, or dimples, QX, for tightening the segment

Due to the generously dimensioned threads, handnut and compression ring, the Ambient screwlock closes down very tight compared with other manufacturers, and will give years of service with negligible wear.

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Very important note

When screwing the mechanism together the pin must be located in the slot in the compression ring. It prevents the compression ring turning and stops intersegmental twisting of the boom segments when locked.

Note:

To loosen the screwlock a maximum of 1 turn is necessary.
The pin will stay in the slot.



If a user opens the hand nut more than 5 turns then the pin can come out of its location in the ring. Then when the screwlock is retightened the pin may move away from its slot and will be bent or broken by the compression ring, which will be also be scored.

The boom will then not close well. The only remedy after this is to remove the pin and insert a new one if possible. If the pin cannot be removed one can work without it but intersegmental twisting may occur.

If the screwlock does not lock tight in half a turn open the mechanism and see if the pin is in its slot. If not it may be bent. Straighten and reinsert in slot. Transfer a little grease from the screw threads to the top taper of the compression ring to reduce friction (helps tightening), and retighten holding the boom vertically so that the pin remains in the slot until the hand nut is closed.

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Segment Bushings

The internal spacer bushings in the Ambient booms are made of Velcro felt, and are fixed to the boom with a pressure sensitive adhesive. The advantage is that the felt is not hard so the boom has a self cleaning action and will never get stiff or tight in a very cold or hot environment.

Maintenance

There are 3 points of maintenance which can improve the action of the boom.

Note:

Booms should be able to sustain hard work for at least 1 year before needing maintenance.

Outer surface of the boom

A good surface polish is Johnsons furniture polish spray. Extend the boom, spray on and rub off until the boom is dry.

Greasing the screwlocks

Generally the screwlocks will not need greasing for at least 2 years. We use a special silicone grease, and can send a sachet free of charge in the post on request. Open the screwlock, apply grease evenly, also to the top surface of the compression ring and screw up again. Make certain the 'O' ring is also greased otherwise it may pop out.

On earlier models without the silicone 'O' ring a total clean may be necessary after, for example working on a beach in high winds. In this case the boom must be completely disassembled and the grease and sand washed out of the threads in a thinners bath using a tooth brush etc. After the threads have been completely freed of sand then grease can be reapplied. Use this opportunity to renew the felt bushings!

First insert all segments, then apply grease to the threaded bases and screw up taking care the pin is in the slot!

Note:

When sand gets into the mechanism a complete clean is necessary. Applying new grease to a dirty mechanism will not improve the action.

Renewing the compression rings

After years of service the compression rings may need to be renewed and are available as spare parts from Ambient

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Renewing the felt bushings

The felt is easily replaced by disassembling the boom, peeling off the felt strips, noting their position, cleaning the tube surface with spirits, to remove grease, applying new felt and then reassembling.

Note:

When applying the felt ring, a small expansion gap (2mm) should be left.

Never overlap the felt.

Velcro felt strips with adhesive can be supplied by us free of charge by post on request.

Repairing or renewing segments

Generally with breakages, Ambient will supply a spare segment ready for fitting. In rare cases customers may want to do repairs themselves. For example, if a tip becomes bent then it needs to be removed and a new one fitted.

A fitting such as a tip can be removed by heating with a blower slowly and evenly and extracting the tip when the glue gets soft. The tip should be firmly held in a vice and the joint heated until the tube pulls free.

Note: It is easy to overheat the tube!

Alternatively cut off the tip and tube 4 cm down the tube and reglue the coloured collar ring and tip supplied after cleaning with spirits to remove grease. The segment will be shorter!

We do not advise trying to remove the aluminium base of the screwlock. The glued area is large and the tube will overheat and the metal part will deform before the glue gets soft. Order a spare segment!

Note:

Ambient supplies this special 2 component glue free of charge in syringes. Do not use any old 2 component glue. It will go soft when you are shooting in Florida in the midday Sun and the Mike will drop of the boom!! We had this problem in the beginning with a normal 2 component glue from the "Do It Yourself" store. Then we changed to high temperature glue.

The 2 component glue that we use is hard up to 150 deg C. Mixing proportions are 1:1 by volume. Squeeze out required equal lengths of base and hardener next to each other on a piece of stiff paper. Mix well till homogenous. Wait 2 minutes then apply to **both** surfaces of the parts being glued and push parts together. Excess glue can be removed with a spatula and removing last traces of glue at the joint can be done with a rag generously wetted with alcohol or household spirits. Do not use acetone or thinners! Working time is 1 hour max. Hardening time 24Hrs.