

COMPOSITE ENGINEERING, INC., HOME REPAIR INSTRUCTIONS

AFT KNEE INSTALLATION

Please read all directions before you begin your repair. If you have any questions, please call or fax us at CEI.

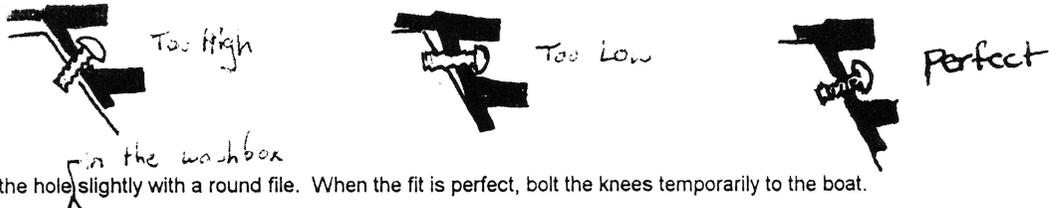
MATERIALS:

- Aft knee assembly:
 - Aftknee (2)
 - Yellow arrow shaft (1 length for 1x, 2 for 2x)
 - Black arrow shaft (1 length for 1x, 2 for 2x)
- Rivets:
 - CCPQ 4-3 (2)
 - CCPQ 4-4 (2)
- Washers:
 - 343 X 30 X .031 FW SS (4)
 - Big one to go on outside of washbox*
- Bolt- cap-head to go into rigger*
- Nylon wing nut*
- Epoxy glue (try to get a long-curing epoxy; do not use the 5 or 7 minute variety)
- Alcohol (household rubbing alcohol is fine)
- Packing tape

TOOLS:

- Handsaw
- round file
- 5/32" ball driver
- Drill with 1/8" bit
- Sandpaper, 80 or 40 grit

1. Check the fit of the aftknees in the washbox. It may be necessary to trim the bottom tab slightly. There should be clearance between the aftknee and the seat deck.
2. Bolt in the aftknees to check the alignment of the holes through the knee and the washbox. If they are slightly high or low (see diagram below)



3. Mark the yellow shaft to run to the ends of the aftknee tubes and cut. The fit must be precise, so that the shafts do not push out the gunwales, and the shafts have no port-starboard slip.
4. Cut the black shaft to length; they need a precise fit as well, with no yellow shaft showing.
5. When the shafts are perfectly fitted and bolted in, make sure aft knees are straight (i.e., perpendicular to the gunwales). Drill rivet holes in the center of the top tabs and place a rivet in the hole. This will hold the knee in place for the next step:
6. Drill the bottom tab from the outside through the washbox.
7. Disassemble all the parts, and sand the yellow shaft. Also, sand the knees where they will bond to the washbox. Put masking tape around the sockets of the aft knees, and around the ends of the black shafts.
8. Glue the yellow shafts into the black shafts, put epoxy into aft knees and re-assemble. Put glue on the threads of the bolt just under the button cap, then put it through the knee and washbox (in that order). Put epoxy on the gunwale side of the aftknees and place in to the boat. Glue up the backs of the large washers and place on the washbox. Grease the end of the bolt sticking out from the end of the boat and loosely screw on the wing nuts. Rivet the top tabs with the longer rivets, using the backup washers on the bottom (i.e., against the gunwale). Rivet bottom tabs with shorter rivets and tighten wing nuts.
9. Clean up with paper towels and alcohol. Stretch packing tape around the hull and the washbox on both sides to tighten up the aftknee assembly and to keep it from moving.
10. Allow the epoxy to cure at least 8 hours at room temperature. In cold weather, it may take up to three days for the epoxy to cure.