

Vanguard 15 Floor Stringer and Mast Knee Reinforcement

Many Vanguard 15 owners have expressed an interest in reinforcing the floor stringer and mast knee in their boats. Here's how to do it.

You will need:

Epoxy

Small paint brushes

Acetone

Vacuum cleaner with hose

Masking tape

Something to cut inspection port hole (router, hole saw, jigsaw, Dremel tool, etc)

5" inspection port

60 grit sandpaper

1 square yard of fiberglass cloth

Cut the inspection port hole into front of cockpit wall as shown on the diagram. This hole gives you access to all the areas of the repair. Clean the area around the hole and mask off the area to prevent epoxy from spilling or dripping onto your cockpit. Leaving the installation of the port to the end, after all repairs are done, will give you more room and prevent you from damaging your port.

Mast knee repair/reinforcement

Inspect the mast knee located under the mast step. If it is intact but poorly bonded to the hull, leave it where it is. If it is delaminated or in any way structurally unsound, remove it. You will need to get a piece of marine plywood and make a new knee of the same dimensions.

If you are replacing the knee, sand the old bonding area with 60 grit sandpaper and clean the area with acetone and a rag. To install the replacement knee, mix some epoxy with a thickening agent (microballoons, filletting blend, etc) to the consistency of peanut butter. Bond the new knee into place with this thickened epoxy. Let the epoxy cure for 5 to 6 hours.

To reinforce the tabbing of the knee, first lightly sand the bonding area with some 60 grit paper and clean the surfaces with acetone. Cut 4 strips of fiberglass, 3" x 6" each. These are your tabs.

Mix some epoxy and paint it onto the knee and the fiberglass areas around the knee. Wet out one of the fiberglass tabs and install it in one of the corners between the knee and the hull. The corner should bisect the width of the cloth – 1.5" on either side of the corner. Be sure to roll the cloth out to get rid of air bubbles. Repeat this process at each hull/knee corner. Allow this area to cure for 5 or 6 hours.

Floor stringer repair

Prepare the floor stringer area by lightly sanding it with 60 grit paper, then vacuum the area and clean it with acetone.

Cut three pieces of fiberglass cloth. One is 20" wide by 6" long, one is 22" wide by 7" long, one is 24" wide by 8" long.

Mix some epoxy, about 1 cup. Wet out the area on the hull stringers where you are going to install the fiberglass support. This area is wider than it is long.

Wet out each piece of fiberglass and install them one on top of the other. The smallest piece goes on the bottom, the largest on top. Make sure to roll out any air bubbles after installing each piece.

Allow 5 to 6 hours of cure time, install the inspection port and go sailing.