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F 420 - F 470 - F 530

**Section V**

***UPGRADES, MODIFICATIONS  
& MAINTENANCE***



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## UPGRADE - GLUED KEEL BY VELCRO KEEL

## UPGRADE - REMOVABLE BOW POUCH

## UPGRADE - PADDLE POUCH

## MAINTENANCE & REPLACEMENT OF LBTR (Lower Buoyancy Tube, Removable)

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### Upgrade - Glued Keel by Velcro Keel

1. To modify a glued keel by a Velcro-held keel, simply unglue the existing keel with a hot-air gun, as in F470 USMC-TM 09665A-13&P/1-1, F470 Army-TM 5-1940-279-13&P-1 or F530 IAB TM 5-1940-321-13P.
2. Inflate keel moderately to 180 mbrs and proceed to glue the Velcro to it as per ordinary Neoprene gluing instructions. Also glue the Velcro strips on the inside bottom of the boat, starting 2 inches forward of the transom...same for the keel; Velcro starts 2 inches forward from its end.

**IMPORTANT: HOOK Velcro on inside boat bottom.  
PILE Velcro on keel (P/N 3722)**

**This is most important, as it is how the factory manufactures the boat...!**

3. Keel gets one strip of 2" PILE Velcro.
4. Boat inside bottom gets two 2" HOOK Velcro strips, so as to present a wider "gripping" area for the keel.
5. Velcro Maintenance

Brush both Velcro strips regularly with a bristle brush to extract sand and various debris, after separating the Velcro keel from the hull. This should be done every 90 days and/or as required.

1. One can upgrade a boat by gluing D25 rings (P/N 6167 for PVC) to various areas of the MBT (Main Buoyancy Tube) using 7096 polyurethane (PU) glue, following procedures in this TM manual (see section on gluing techniques on pages 47 through 52.

One will also use P/Ns 7252 and 7253 buckles and retaining straps, gluing them in the appropriate place on the MBT to prevent the pouch from flapping and to secure it correctly.

### **Upgrade - Removable Paddle Pouch**

1. Same as above, using P/N 7252, 400 mm quick-release buckles and their retaining straps, P/N 7253, to secure a detachable paddle bag to any F470 boat.

### **Maintenance for Removable LBTR (Lower Buoyancy Tube)**

1. Turn boat upside down (inflated).
  2. Thread a 550 cord at the bow of the LBT sheath through the 1/2 inch hole so as to thread the 550 cord through the keel's grommet and secure it with a knot.
  3. Seventeen feet (17 ft.) of 550 cord will suffice.
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### **Maintenance for Removable LBTR (Lower Buoyancy Tube) (cont.)**

4. Disconnect the aft LBT retaining pin, P/N 6553.
  5. Close elbow isolator clamp, P/N 3187.
  6. Disconnect Neoprene elbow from LBT.
  7. LBT will go flat, and you'll be able to extract it. Make sure your 550 cord is facing the bow of the boat and does not back toward the transom. As the cord will be payed into the sheath, it may cause a rip in your sheath fabric.
  8. Disconnect 550 cord from grommet, leaving the cord in place.
  9. Make small loop with straight knot around LBT grommet. This will speed up future disassembly operations.
  10. Screw valve insert, P/N 2107, in the LBT valve, inflate and cap off with valve cap, P/N 2108.
  11. Wash LBT with soap and water, clean, dry, inspect, repair, etc., and let glue vulcanize 24 hours before inflating LBT to test repair (if applicable).
  12. Stand boat on its cones and flush LBT sheath with garden hose, from the transom, so as to let the pebbles and grit fall out.
  13. Deflate LBT.
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**Maintenance for Removable LBTR (Lower Buoyancy Tube) (cont.)**

14. Hook up 550 cord to it.
  15. Position LBT in such a way as to have the LBT valve facing the MBT elbow.
  16. Spray LBT generously with soap and water so that when it inflates in its sheath, the LBT will want to slide into its natural position.
  17. Feed the LBT into its sheath by pulling it from the bow with the 550 cord.
  18. Pull the cord while standing at the bow, not while standing at the transom, so as not to rip the sheath fabric. Pulling the LBT back into its sheath is a two-man operation.
  19. Hook up the aft retaining pin, P/N 6553, through the retaining buttonhole.
  20. Slide the barbed Delrin fitting through the sheath hole and connect it to the neoprene elbow.
  21. Install cable ties around elbow and barbed fitting and secure firmly.
  22. Unscrew clamp and let air transfer to LBT.
  23. V & V the LBT and make sure there are no abnormal kinks in it. If there are, you must disassemble the LBT and re-stuff it in its sheath, eliminating the fabric kink. This may happen when you do not soap down the skeg sufficiently before inserting it into its sheath.
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**The replacement of a removable LBT should only take about 10 minutes,  
while the replacement of a glued LBT takes about 10 hours.**

#### DISASSEMBLY FREQUENCY FOR CLEANING

By cleaning the sheath and LBT every 90 days, you will get rid of grit and pebbles that could wedge themselves between the LBT and the sheath, possibly making a hole in the LBT.