

# TL-ULTRALIGHT STINGSPORT & STING S3

## How To Remove/Replace The Wings

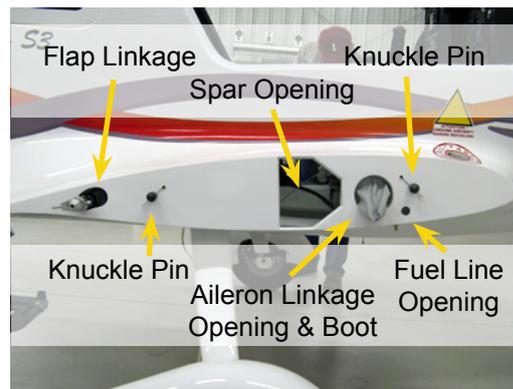
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The main spar of each wing extends through the fuselage beneath the seats and engages the wing root on the opposite side. The spars are locked in place by a centrally located pin. Each wing is light enough for two people to handle. Removal and replacement of wings is simple and straightforward, but it must be performed or overseen by an A&P mechanic to assure that the connection of control linkages, pitot-static tubes, wiring and fuel lines is properly done and that the airplane is airworthy. Please check the maintenance manual for clarification of this requirement.

This article illustrates installation of the wings; removal is accomplished by reversing the steps. Begin by locating and removing five screws attaching the upholstered seat bottoms to the airframe.



When both seat bottoms are removed you will have access to all of the connections required for installation and removal of both wings (above right).



The wing spar will be inserted through the angular “D” shaped opening. Knuckle pins fore and aft of this opening engage the wing root to resist twisting of the wing. Lubricate these knuckle pins with Evinrude-Johnson Triple Guard Marine Grease, P/N 508298, or equivalent, before installation.

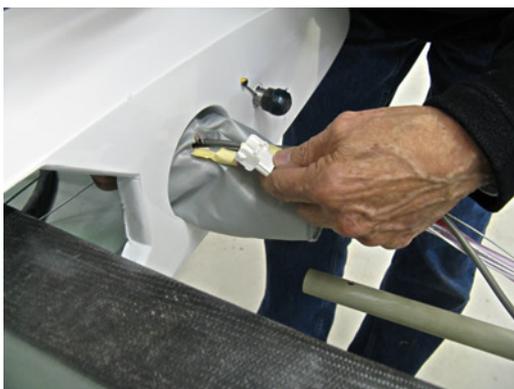
The photo below shows two people carrying the wing. The person carrying the wingtip should be careful not to place strain on the clear wingtip light cover. The knob at the tip of the spar should be lubricated and then



guided into the “D” shaped opening. The spar extends under the seat bottoms and the center console. At this point, the wing should be braced with a padded support, as shown below, right, to steady it while the appropriate connections are made.



Wiring and pitot-static tubing are inserted through a slit in the aileron linkage boot, as shown below.

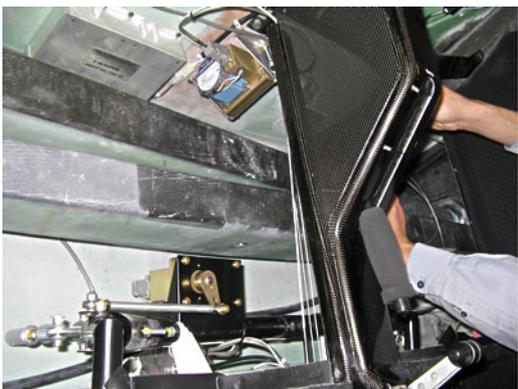


In the lower right photo, the aileron control rod, wiring and pitot-static tubing are shown entering the cockpit through the aileron linkage boot.

Slide the wing home, taking care to align the fore and aft knuckle pins, the flap and aileron linkage and the fuel nipple (if wing tanks are present), and to avoid trapping or crimping wiring or pitot-static tubing.



Insert the spar of the second wing into the fuselage in the same way. When both wings are in place, the two spars will overlap, each extending through the fuselage to engage the wing root on the opposite side. Holes in each spar for the camlock pin will line up below the center console. The camlock pin is shown below, right.



Push the camlock pin through the spars from back to front, then rotate it firmly to lock in place. The camlock pin is then fixed in position with a bolt inserted from the front, as shown below right.



With both wings mounted and fixed in position, the control linkages, pitot-static system, wiring and fuel lines (if present) may be connected.

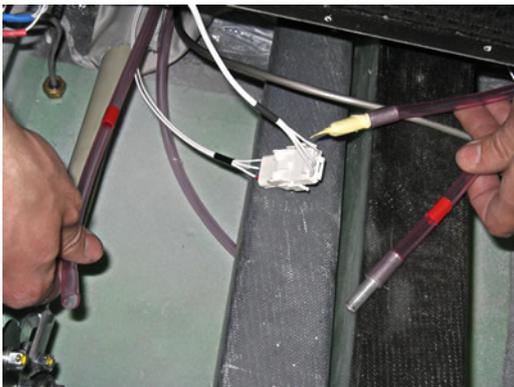
Connect the left and right wiring for the Triple Magnum strobes to the centrally located control box aft of the spars. These wires are identified by blue plastic collars in the photo, below left. There are connectors at left and right sides of the fuselage for the navigation, landing and taxi lights in each wing (white connectors, below right).



Slip the aileron control tube over the link and align the holes (below left). Then fasten the aileron control linkage with the provided Allen bolt. This step must be repeated for each wing.

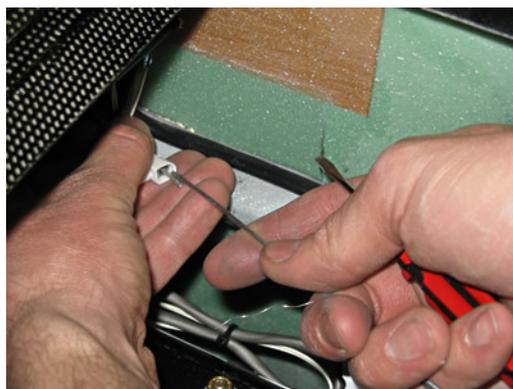
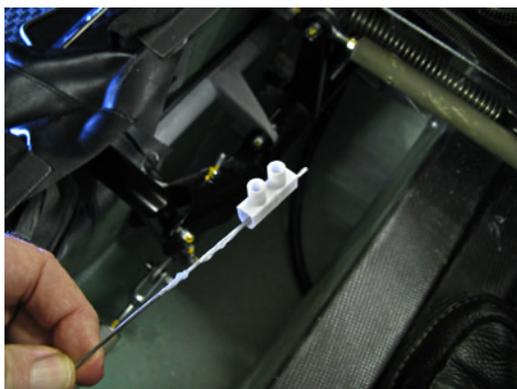


Pitot and static tubing enter from the right wing only. The tubing is color coded to keep the systems separate. Take care to connect tubing of like colors only. In the instance shown below, red goes with red, and clear goes with clear.

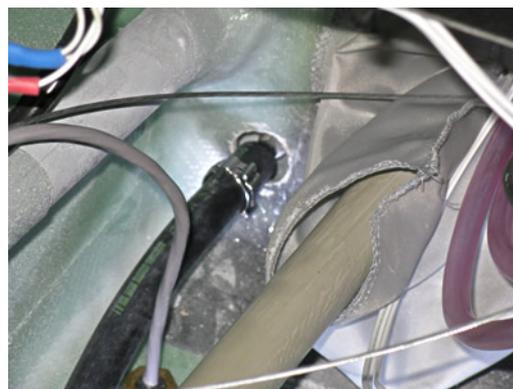


The tubing is secured with clips. Those shown (right, above) are easily released with the aid of a small screwdriver.

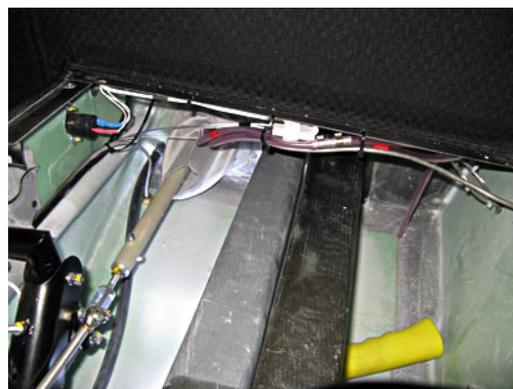
Next connect the ground wires from each wing to the common ground wire, as shown below. Tighten both screws in the plastic clamp.



If wing fuel tanks are present, the fuel nipple will extend from the wing into the cockpit just forward of the aileron control rod (below left). Slip the rubber fuel line all the way down over the nipple and clamp it. This step must be repeated for each wing fuel tank.



The installation is now complete, but untidy (below left). To tidy up, thereby reducing not only sources of noise but wear and tear on the parts, gather the wiring and tubing and affix it with plastic ties to convenient parts of the airframe, as shown below right.



The final step is to reinstall each seat bottom with the four screws removed earlier.