



Power4Flight Product Advisory

B100i Throttle Linkage - Inspection and Update Procedures

Date: 7/15/2021

I. BACKGROUND

There are two types of throttle linkages currently installed on the various flavors of B100i engines deployed to customers. Recently one of our customers experienced a servo linkage failure related to the original (old-style) version of that linkage. This was the second documented failure of a B100i servo linkage arm. Prior to the second failure Power4Flight and Cobra-Aero made a change to the linkage to address what we believed was non-optimal retaining clip engagement and retention. The clip in question holds the servo arm on the linkage ball. It should be noted that the original linkage configuration passed our 150-hour endurance test without failure.

About a year ago a customer had a linkage failure and we put out an inspection directive and began tracking the issue. Ongoing inspections were showing some wear on the arms from the clips due to high vibration which we now believe was the cause of the first failure. Subsequently, Power4Flight and Cobra decided to change the retaining clip configuration (see photos below) to minimize wear and improve overall retention and linkage robustness. This change was made and deployed on all new engine deliveries, prior to the second documented failure. The second failure that occurred was on an engine that should have been inspected and potentially updated if the inspection showed wear. The second failure is being attributed to wear from vibration between the hard steel retaining clip and the soft aluminum arm that we believe allowed the retaining clip to rotate and fall out – consistent with the first incident. The second failure happened even though we had implemented an inspection protocol and had a new replacement linkage available. Given we have experienced a second failure with the added inspections measures in place dictates that we need to remove all old-style linkages from service.

The new linkages, that were deployed after the first incident, hold the clip from the inside of the arm which limits the potential clip movement and to date seem to show less wear. We have had no failures with the new-style (current) arm. There is always room for improvement, so we are looking at further mitigation measures on the current arms that we plan to roll out once properly tested and validated. Until then we recommend that:

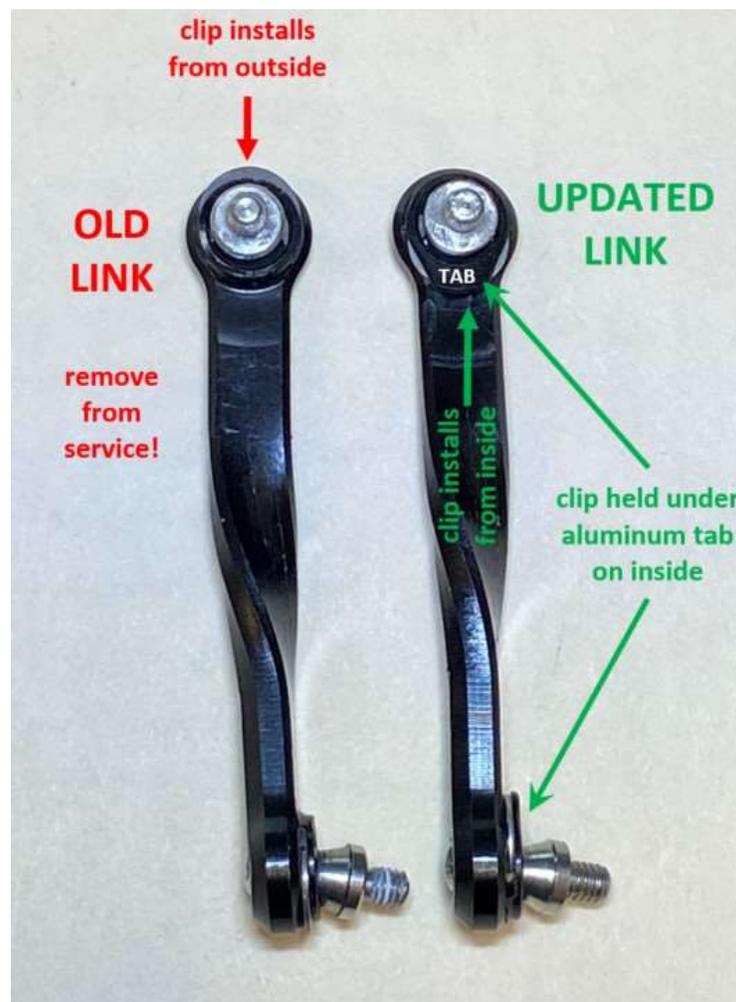
1. Any engine with the old-style linkage be identified, inspected and grounded.
2. All old-style arms be removed and replaced with the current version before being returned to flight.
3. All engines with the current version of the linkage be inspected before returning to flight.



II. INSPECTIONS

The first step for all B100i engine customers is to identify which linkage configuration you have installed on each engine. The diagram below shows the two versions side by side – the old-style is shown on the left and the current version is on the right. If you have an old-style linkage installed, we recommend that you contact Power4Flight so we can get you a replacement linkage assembly. **We do not recommend flying the old-style linkages given we have seen a second failure.**

If you have the current or second-generation arm on your throttle linkage assembly, we would like you to visually inspect prior to flying to make sure that there is no unusual wear or other potential issues. If anything looks unusual or different than expected, contact Power4Flight to discuss.



Feel free to call us for guidance if you are not clear on the identification/inspection procedure or have other concerns.



III. POWER4FLIGHT/COBRA-AERO FOLLOW ON ACTIONS

The plan going forward is to mitigate the potential for any further failures by removing the original or old-style linkages from service and replacing them with the current version, which we believe is an improvement, has been qualified, and not had any failures. We also plan to add further clip retention modifications and will roll out a third generation of the linkage once it is tested and fully qualified.

Once the suspect arms have been identified we will supply a kit and procedure for replacing them. The removal/replacement is simple and requires no adjustments, just the removal of the two ball link screws and old arm and the insertion of the replacement arm with ball links attached.

IV. CUSTOMER ACTIONS

Customers are advised to make the inspections outlined above on their entire fleet of B100i engines - installed on vehicles as well as any spares. Once completed you can send Power4Flight a SN list of engines that require the update, we will then send you the replacement servo arm assembly and the procedure to remove and reinstall them.