



BLACK OPS

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**Installation, Operation and Maintenance Instructions
For
Acme Suspensions Black Ops Suspension System**

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Content Diagram



Aircraft Specific Data

Serial Numbers: _____

Gross Weight: _____

Nitrogen Pressure: _____

N Number: _____

Build Date: _____

Special Notes: _____

Installation Instructions

Step 1

Inspect Black Ops Suspension System for all parts.

Prior to shipping, your Black Ops Suspension System was assembled to your specific application and reducer and eccentric bushings were inserted into the attachment points. The shocks were also carefully inspected and tested for proper fitment and operation.

Please inspect the two shocks to ensure you have the following:

1. Two (2) Black Ops Shocks
2. Four (4) eccentric bushings inserted into the upper housing of the shocks. Two (2) in each shock
3. Four (4) reducer bushings inserted into the lower heim of the shocks. Two (2) in each shock
4. Small bag of shims for proper fitment

If for some reason you don't have any of these parts please contact us immediately to ensure we get those parts to you.

Step 2

Prior to installation ensure proper thread engagement on the lower heim.

The lower heim allows for some adjustability. There must be a minimum 3/4" thread engagement of the heim on the threaded rod end. Once desired length is determined tighten the jam nut against the lower heim.

Step 3

Raise the aircraft off of the ground 2-4"

Some aircraft come fitted with lifting hooks which is the preferred method if you have means to suspend your aircraft. If that is not an option, lift one side at a time by appropriate means at the lift strut attach bracket.

Step 4

Remove one side of the suspension you are replacing

First, remove the bolt on the suspension closest to the wheel.

Next, remove the bolt that attaches the suspension at the cabane-v.

Step 5

Install one side of the Black Ops Suspension System

First, place the top housing with eccentric bushings into the cabane-v with the valve stem facing down. The fit with the bushings should be free but close. You can use the small shims at this point to take up excessive play.

Next, place the lower heim with reducer bushings into the lower attachment point at the wheel. The fit should be close and shims can be installed at this point to take up excessive play.

Tighten AN bolts to 37ft lbs non-lubricated and 47ft lbs if lubricated.

Step 6

Use torque paint or a sharpie to draw a straight line on the lower heim and jam nut

After ensuring the jam nut is tight against the lower heim, draw a straight line on the lower heim that carries over to the jam nut. This is used to quickly see if there is any loosening of the jam nut against the lower heim.

Step 7

Repeat Steps 2-5 for the other side of the aircraft

Step 8

Recheck that all hardware is secured properly and all cotter pins are installed properly

Pay specific attention to the 1/2" jam nut (3/4" wrench) that butts up to the heim joint.

Step 9

Lower the aircraft back down

Rock one wing to ensure the suspension is moving properly. You won't see a lot of movement here but there should be a little travel.

Step 10

Go show off your shiny new Black Ops to all of your friends and show them how awesome of a pilot you are when you stick every landing.

Safety cables are recommended.

For a video on how to install Acme Aero Black Ops Suspension System please visit our website at www.acmeaerofab.com and click on the VIDEO tab. Under the VIDEO tab click GOPRO599 for complete step-by-step video installation instructions.

If you have any questions whatsoever or anything is unclear during the installation of your Black Ops Suspension System, please call us at either 704-806-3582 or 704-906-8473.

Operation and Maintenance

The Acme Aero Black Ops Suspension System was designed to eliminate the need to constantly adjust pressures in your shocks or carry around a nitrogen bottle. They are meant to be as close to maintenance free as possible.

Preflight

- Visually inspect both the top and the lower attachment points, attachment hardware, body cap of the shocks, and the shock shafts
- Inspect the torque mark to ensure there is no loosening of the jam nut and lower heim
- Check for any foreign object damage to the shock shaft
- Ensure there are no damaged or bent components
- If any damage or broken components exist please replace prior to operation

Annually

- Remove shocks and inspect bushing inner diameters for wear
- Closely inspect the upper and lower attachment points. Look for any cracks or abnormal wear and tear
- Check for seepage around the upper and lower caps
- Closely inspect attachment hardware and cotter pins. Ensure the cotter pins are not corroded and are in proper working condition
- Closely inspect the shock bodies and shock shaft to ensure there is no foreign object damage
- Closely inspect the torque mark to ensure no loosening of the jam nut and heim. Also ensure the mark is visible and reapply if necessary
- Check the nitrogen pressure to ensure proper operating pressure based on specific application noted in the front of this manual
- If you desire, shocks can be sent to Acme Aero for complete inspection. Shipping costs are the responsibility of the owner
- Acme Aero recommends TBO every 1,500hrs

Warranty

Acme Aero Suspensions warrants Black Ops Suspension System against defects and wear when used under normal operating conditions, for as long as such original purchaser owns the aircraft on which they were designed and constructed for.

Acme Aero's obligation under this warranty is limited to replacement of the worn-out or defective product in accordance with this warranty. Cost of removal and installation are not included, and any incidental and consequential damages are excluded under this warranty, regardless of when the failure occurs. This warranty has no cash value. This warranty does not apply to products that have been modified, improperly applied or installed on aircraft in which they were not designed for.

Basically, Acme Aero stands behind the craftsmanship and operation of all of our products. Obviously, you can't go wrapping your shocks around a tree or trying to plow over a 4' boulder.

To make a claim under this warranty, provide your name and the N number of your aircraft. Return the worn-out or defective product to:

Acme Aero Suspension
Attn: Warranty
1907 Scott Futrell Drive
Charlotte NC 28208

Technical Data

- 7075 aircraft grade aluminum shock body
- Hybrid stainless steel shaft construction
- Stainless steel internal components
- Anodized aluminum parts for added corrosion resistance
- Teflon lined self-lubricating mono-ball attachment points
- 4" travel at the shock
- Pressure range 200-300psi
- Total weight: 12.2 Standard, 14.2 Extended
- Triple internal fail-safes
- Tested to withstand 5,500lbs in compression
- Tested to withstand 22,000lbs straight line pull
- .5" lower heim attachment with 19,000lbs tensile strength
- Made entirely in the USA by Veteran owned company

