



“BLACK OPS”
“ProSeries”

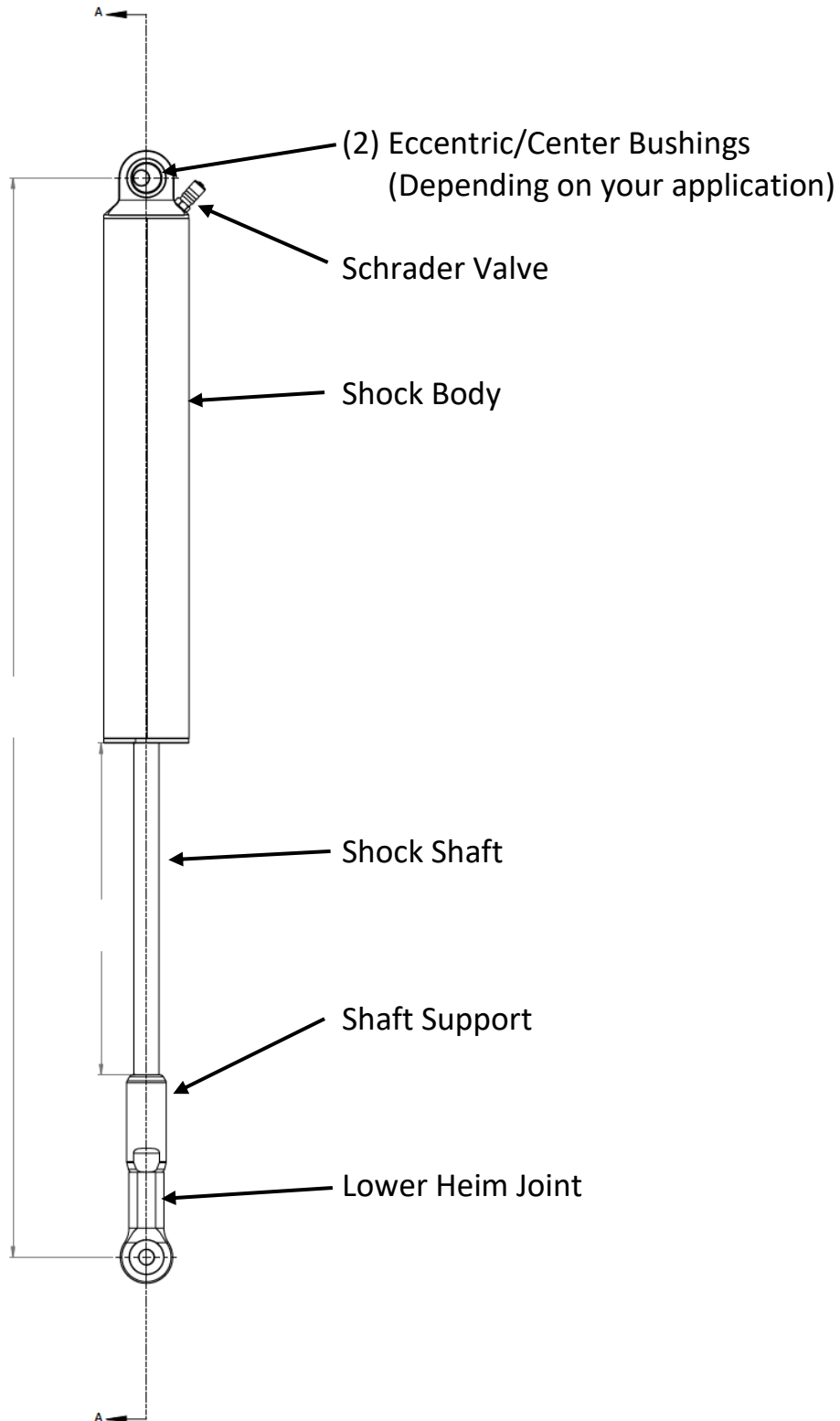
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**Installation, Operation and Maintenance Instructions For
Acme Suspensions Black Ops/ProSeries Suspension System**

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Content Diagram



Aircraft Specific Data

Serial Number: _____

Tail Weight: _____

Nitrogen Pressure: _____

N Number: _____

Build Date: _____

Special Notes: _____

Installation Instructions

A video of how to install Acme Aero Shocks is on our YouTube Channel [@AcmeAero](#). Click on the YouTube link via our website at www.acmeaerofab.com.

Step 1

Inspect Black Ops/ProSeries Suspension System for all parts.

Prior to shipping, your Black Ops/ProSeries Suspension System was assembled to your specific application. The upper reducer bushings either eccentric or centered were inserted into the attachment points, depending on your application. First, place the top housing with bushings into the cabane-v with the valve stem facing down. The purpose of the eccentric bushing, if included, is to maintain clearance between the body cap and the cabane-vee.

The lower reducer bushings were chosen from the info and width provided. The shocks were also carefully inspected and measured for proper fitment and operation.

Replace all nuts with locking nuts/nylocks.

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

- Two (2) Shocks
- Two (2) Bushings inserted into the upper housing of the shocks. Two (2) in each shock
- Four (4) reducer bushings inserted into the lower heim of the shocks. Two (2) in each shock
- Take this time to insure the lower heim spacers fit for your application.
- Pack of nylon washers (to shim any distance from bushings to upper or lower mounts)

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

We allow for some extension for supporting the weight of the airplane. Free length could be different than your existing suspension.

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

- Proper shock length was set based off the build sheet initially provided and returned.
- The lower heim allows for some adjustment in or out based on any minor changes that need to be made for proper fitment.
- There must be a minimum $\frac{3}{4}$ " thread engagement of the heim on the threaded rod end. This equates to at least 15 rounds of engagement.

Step 3

Raise the aircraft off the ground 2-4" so wheels are free of load

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.

Step 4

Remove one side of the suspension

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/ProSeries Suspension System

Use washers or shims, if needed, to take up any extra space.

If clearance is an issue, **DO NOT** grind on shocks – CONTACT US FIRST

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 24 ft*lbs.

- If using a castle nut with cotter pins DO NOT TORQUE less than 24 ft*lbs to line up the slot.

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.

*Lower heims require at least 15 complete rounds of engagement. All shocks are built to specs provided, if adjustments need to be made that require less than the 15 complete rounds of engagement, **please contact Acme Aero before proceeding** at 704-496-9022 ext. 2

Step 7

Repeat Steps 3-5 for the other side of the aircraft

Step 8

Recheck that all hardware is secured properly, we recommend locknuts.

Step 9

Lower the aircraft back down

Roll and rock the aircraft to settle the suspension. Now is the time to insure proper camber.

A video of how to install Acme Aero Shocks is on our YouTube Channel [@AcmeAero](#). Click on the YouTube link via our website at www.acmeaerofab.com. Click on the Black Ops Installation video for step-by-step video installation instructions.

If you have any questions whatsoever or anything is unclear during the installation of your Black Ops/ProSeries Suspension System, [please call us at 704-496-9022](tel:704-496-9022)

Operation and Maintenance

The Acme Aero Black Ops/ProSeries 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
- 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
- Only check nitrogen pressure if you have proper tools for shock inflation procedures. Check our website for the Acme Aero Inflation Kit, part number INF-KIT.
- If you desire, shocks can be sent to Acme Aero for complete inspection. Shipping and service costs are the responsibility of the owner
- Acme Aero recommends TBO every 1,500 hrs

Warranty

Acme Aero Suspensions warrants Black Ops/ProSeries 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 - including coatings* are excluded under this warranty, regardless of when the failure occurs. (*Our shocks use several coating processes for corrosion resistance. DO NOT USE ANY CHEMICALS that could discolor or corrode)

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 defective product to:

Acme Aero Suspension
Attn: Warranty
3524 Airport Rd
Maiden NC 28650



Technical Data

- 6061 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
- Black Ops 3.25" available travel at the shock
- ProSeries 4.25" available travel at the shock
- Pressure range 250 psi
- Black Ops total weight: 12.2 Standard, 14.4 Extended per set
- ProSeries total weight: 15.5 per set
- Triple internal fail-safes
- Tested to withstand 5,500lbs of side load in compression
- Tested to withstand 22,000lbs straight line pull
- .5" lower heim attachment with 17,200lbs tensile strength
- Manufactured, assembled and sold using ONLY products sourced in the USA.
- Veteran owned and operated company

Please email photos and this form
with your returned product



ACME AERO Suspensions, LLC
3524 Airport Road
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Repair/Replacement Form

www.acmeaerofab.com

CONTACT INFO:

Business/Owner Name: _____

Contact Name: _____

Street Address: _____

City, State, Zip: _____

Email: _____

Phone Number: _____

RETURN SHIPPING INFO:

Business Name: _____

Contact Name/Email: _____

Street Address: _____

City, State, Zip: _____

PRODUCT INFO:

Serial Number: _____

Airplane Type: _____

Are you the original owner? Yes _____ No _____

If NOT, who was? _____

Who did you purchase the product from? (Aids with product identification):

ISSUE WITH PRODUCT: _____

What's happening: _____

Want to add a cool story or have questions? Then send those to info@acmeaerofab.com