

# INSTALLATION INSTRUCTIONS and INSTRUCTIONS FOR CONTINUED AIRWORTHINESS

Aircraft: PA-18Series

## TITANIUM LANDING GEAR

Release Number: B

Release Date: 3/14/2023



THIS MANUAL INCLUDES INFORMATION PROPRIETY TO AIRFRAMES ALASKA AND SHALL NOT BE USED TO MANUFACTURE OR REPRODUCE ANY PART OR ASSEMBLY WITHOUT THE PRIOR WRITTEN PERMISSION OF AIRFRAMES ALASKA.

These instructions are to be included in the aircraft Maintenance Material when the Airframes Alaska, LLC. Titanium PA-18 3” Extended Landing Gear and Titanium Cabane Vee are installed.

The information contained in this manual supplements or supersedes the type design data only in those areas pertaining to this STC. For maintenance practices and procedures, not contained in this document, consult the maintenance material, or other information that was required by the applicable regulations under which this aircraft was type certified.

#### Record of Revisions

Rev Level	Date	Page	Author	Explanation of Revisions
IR	11/2/2022	-	Jon Earl	Initial Release
A	3/8/2023	All	Jon Earl	Combined installation instructions and instructions for continued airworthiness.
B	3/14/2023	-	Jon Earl	Corrected revision date.

#### Distribution of Changes

A current copy of this manual will be maintained on the Airframes Alaska, LLC website.

**Introduction:**

The Airframes Alaska, LLC. Titanium PA-18 3" Extended Landing Gear and Titanium Cabane Vee are designed to replace the OEM steel landing gear legs and cabane vee.

**Description:**

The Airframes Alaska, LLC. Titanium PA-18 3" Extended Landing Gear and Titanium Cabane Vee are much lighter weight than the OEM Piper, and certified steel landing gear legs and cabane vees.

**Airworthiness Limitations:**

"The Airworthiness Limitations section is FAA approved and specifies maintenance required under 14 CFR, Sections 43.16 and 91.403 of the Federal Aviation Regulations unless an alternative program has been FAA approved."

Limitations:

**DO NOT REWELD THE TITANIUM GEAR LEGS OR CABANE VEE. THEY MUST BE WELDED IN A COMPLETELY ENCLOSED ARGON ENVIRONMENT TO ENSURE THAT THE FRONT AND BACKSIDE OF THE WELD HAS ARGON COVERAGE. OTHERWISE, OXYGEN EMBRITTLEMENT WILL OCCUR AND COMPROMISE THE STRUCTURAL INTEGRITY OF THE LANDING GEAR LEG.**

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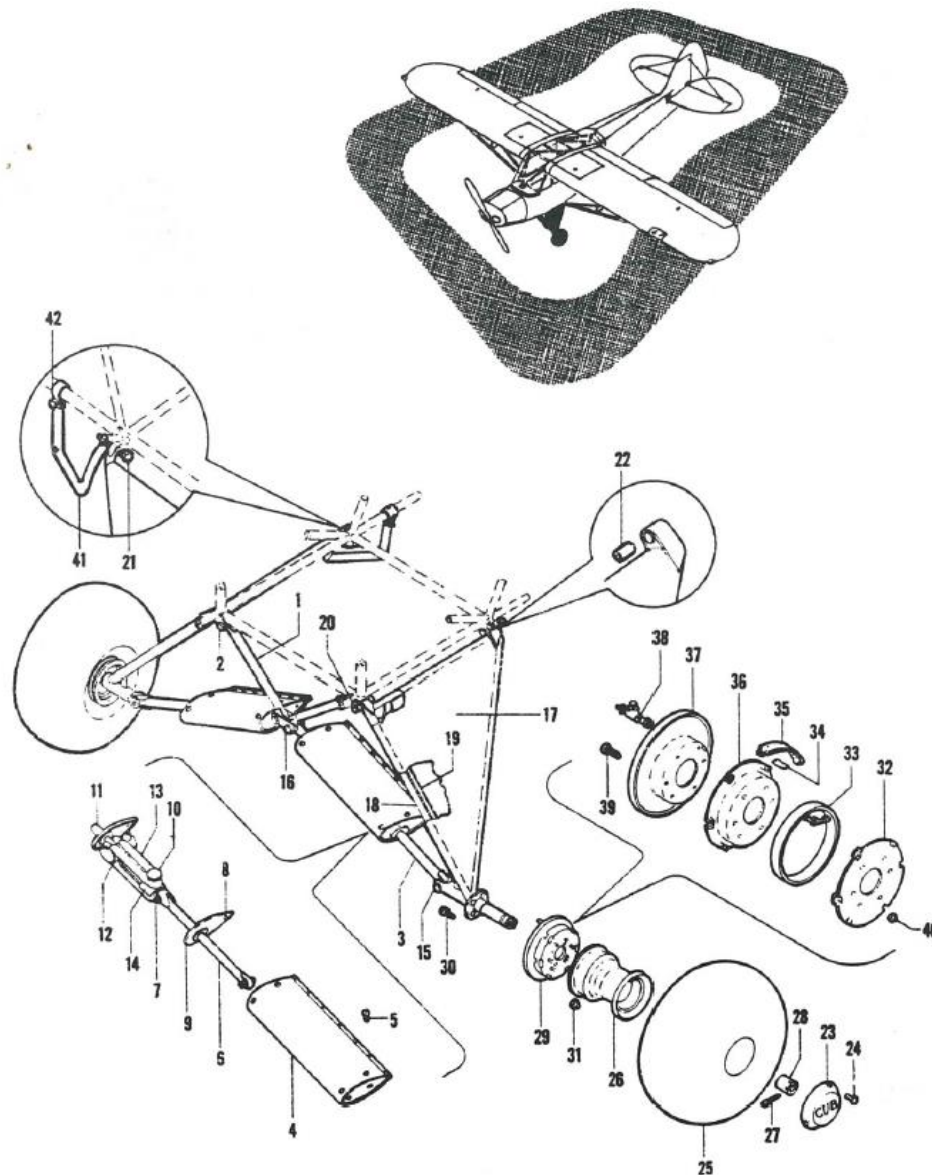
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## Main Landing Gear Removal:



**Figure 1-1**

1. Place the fuselage on a padded horse of sufficient height so that the main landing wheels clear the ground. The horse should contact the fuselage at a point just behind the rear landing gear fittings.
2. Disconnect the LH and RH brake line assemblies (19, Figure 1-1) at the fuselage.

3. Remove bolt, washer, and nut (2, Figure 1-1), bolt (20), bolt, washer, nut and cotter pin (21), and bushing (22). Roll the main landing gear away from the airplane for further dismantling work.
4. Remove bolts, nuts, cotter pins, and washers (15 and 16) and separate shock struts (3 and 14) from the landing gear vee (17). Disassemble the shock strut assemblies according to Figure 1-1.

## Main Landing Gear Installation:

1. Reassemble shock struts according to Figure 1-1.
2. With the fuselage resting on the padded horse as described in step 1 of the removal instructions, attach landing gear vee assemblies (17, Figure 1-1) (with the wheels assembled) to the fuselage. Position all bolts with their heads forward. Fasten cabin mounting step (41) with bolt, washer, nut, and cotter pin (21) on the RH side of the fuselage. See Table I for torque values to be applied to bolt (20) and bolt, washer, nut, and cotter pin assembly (21).
3. Carefully assemble shock struts to landing gear cabane vee (1) and to the LH and RH axles. Position all bolts with their heads forward. See Table I for torque values to be applied to bolts (2, 15, and 16). Lock all bolts with cotter pins. Use new cotter pins.
4. Reconnect the LH and RH brake line assemblies (19) to the fuselage end.
5. Carefully lift the fuselage and remove the padded horse which has been supporting it during the repair work.

Table I. Landing Gear Torque Values

Item and Location	Torque Value (foot-pounds)
Left landing gear vee to fuselage (2 bolts)	11
Right landing gear vee to fuselage (2 bolts)	11
Cabane vee to fuselage	8
Shock struts to cabane vee (2 bolts)	10-11
Shock struts to right axle (1 bolt)	10
Shock struts to left axle (1 bolt)	10

## Trouble Shooting

To be updated with common Problems and Corrections if necessary, when and if they arise when more assemblies are installed in the field.

## Engineering Changes and Amendments

If a change or amendment is made to the design, components, or procedures contained within this manual or STC that affect airworthiness of the installation, Airframes Alaska, LLC. will notify the recorded owners in writing of the affected element(s) and provide the necessary data for compliance.

## Maintenance Instructions:

*Instruction Criteria 100*

*Hour / Annual*

*(100 hour or Annual inspection interval, whichever comes first)*

1. **Examine**- All attaching nuts and bolts for wear, distortion, and damaged threads. Replace damaged parts.
2. **Inspect** – The titanium landing gear legs and cabane vee for cracks along the welds.
3. **Inspect** – The titanium landing gear legs and cabane vee for permanent deformation.
4. **Inspect** – The titanium landing gear end fitting bronze bushings for wear. If there is slop in the bushings, old bushings may be pushed out and new bushings may be pushed in. Contact Airframes Alaska for new bronze bushings.

Contact Airframes Alaska LLC. and remove and replace gear legs and/or cabane vee if cracks and or permanent deformation is found.



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