



US Department of Transportation
Federal Aviation Administration

MAJOR REPAIR AND ALTERATION
(Airframe, Powerplant, Propeller, or Appliance)

DMS No. 2120-0020 Electronic Tracking Number
Exp. 9/30/2018

For FAA Use Only

INSTRUCTIONS: Print or type all entries. See Title 14 CFR §43.9, Part 43 Appendix B, and AC 43.9-1 (or subsequent revision thereof) for instructions and disposition of this form. This report is required by law (49 U.S.C. §44701). Failure to report can result in a civil penalty for each such violation. (49 U.S.C. §46301(a))

1. Aircraft	Nationality and Registration Mark N3716M	Serial No. 12-2657
	Make PIPER	Model PA-12
2. Owner	Name (As shown on registration certificate) ROBERT L. AMBLER	
	Address (As shown on registration certificate) Address 2769 NIPOMA STREET	
	City SAN DIEGO State CA	
	Zip 92106 Country USA	

3. For FAA Use Only

The data identified herein complies with the applicable airworthiness requirements and is approved only for the above described aircraft, subject to conformity inspection by a person authorized in 14 CFR 43.7. Compatibility of this design change with previously approved modifications must be determined by the installer.

06/16/2017
Date

Signature of FAA Inspector - SAN DIEGO, RP 08

4. Type		5. Unit Identification			
Repair	Alteration	Unit	Make	Model	Serial No.
<input type="checkbox"/>	<input checked="" type="checkbox"/>	AIRFRAME	PIPER	(As described in Item 1 above)	12-2657
<input type="checkbox"/>	<input type="checkbox"/>	POWERPLANT			
<input type="checkbox"/>	<input type="checkbox"/>	PROPELLER			
<input type="checkbox"/>	<input type="checkbox"/>	APPLIANCE	Type		
			Manufacturer		

6. Conformity Statement

A. Agency's Name and Address		B. Kind of Agency	
Name ROBERT AMBLER		<input checked="" type="checkbox"/> U. S. Certified Mechanic	Manufacturer
Address 2769 NIPOMA STREET		<input type="checkbox"/> Foreign Certified Mechanic	C. Certificate No.
City SAN DIEGO State CA		<input type="checkbox"/> Certified Repair Station	2623891 A&P
Zip 92106 Country USA		<input type="checkbox"/> Certified Maintenance Organization	

D. I certify that the repair and/or alteration made to the unit(s) identified in item 5 above and described on the reverse or attachments hereto have been made in accordance with the requirements of Part 43 of the U.S. Federal Aviation Regulations and that the information furnished herein is true and correct to the best of my knowledge.

Extended range fuel per 14 CFR Part 43 App. B <input type="checkbox"/>	Signature/Date of Authorized Individual Robert L. Ambler 17 JUN 2017
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7. Approval for Return to Service

Pursuant to the authority given persons specified below, the unit identified in item 5 was inspected in the manner prescribed by the Administrator of the Federal Aviation Administration and is Approved Rejected

BY	FAA FR. Standards Inspector	Manufacturer	Maintenance Organization	Persons Approved by Canadian Department of Transport
	FAA Designee	Repair Station	<input checked="" type="checkbox"/> Inspection Authorization	Other (Specify)

Certificate or Designation No. 2623891 IA

Signature/Date of Authorized Individual
Robert L. Ambler 17 JUN 2017

NOTICE

Weight and balance or operating limitation changes shall be entered in the appropriate aircraft record. An alteration must be compatible with all previous alterations to assure continued conformity with the applicable airworthiness requirements.

B. Description of Work Accomplished

(If more space is required, attach additional sheets. Identify with aircraft nationality and registration mark and date work completed.)

USA N0710M

Nationality and Registration Mark

Date

Installation of Grove Master Cylinder on Piper Cub Cruiser PA-12(Piper PA-12 s/n12-2657)

This alteration replaces the original Piper brake actuators with new brake master cylinders P/N 680-1 produced by Grove Aircraft Landing Gear Systems, Inc. These master cylinders are produced for use on amateur built aircraft and are not produced under TSO or PMA. The Goodrich brake assemblies and wheels were removed & Cleveland brakes and wheels, kit number 199-07101, were installed on 10/30/1978 per STC SA11RM Univair aircraft.

The Piper brake master cylinder end bell assembly (item 14 &15) P/N 451 700 & 701, Piston (item 18) P/N 750 295, Diaphragm (item16) P/N 750 384, Diaphragm Pad (item 17) P/N 750 385, and Spring (item 19) P/N 750 386, were removed from the Scott Cylinder (Brake Pedal Housing) which remains in the aircraft with no changes. These items were replaced with Grove master cylinder P/N 680-1. The Grove Master Cylinder includes a fluid reservoir. Silicone based fluid conforming to MIL PRF 46176B or alternatively 5606 fluid is used with no change to operating characteristics of the brake system and is compatible with all operating components of the system. Piper PA-12 parts list is attached, and is incorporated by reference.

Flexible brake system hoses supplied by Piper were originally automotive type, and are replaced with new stock, tested to 4000 psi and certified to have bursting pressures 5000psi and above under safety standards of 49 CFR 571.106. Current replacement parts are FAA/PMA, and available from Univair as P/N U71061-004. System pressures will be less than 650 psi (it takes less than 300 psi to lock a wheel).

This installation meets certification standards of CAR 3.363 and 14 CFR 23.735. Grove Dwg/Part No. 680.1 is attached, and is incorporated by reference. Installation instructions is attached, and titled "Installation Instructions for 680-1 Master Cylinders". All work was accomplished in accordance with standard practices of AC43.13-1B and AC43.13-2B

An operational check was performed that provided adequate braking action to conform to certification standards without excessive force that could cause a nose-over of the aircraft. Leak checked OK.

Instructions for Continued Airworthiness consist of checking the brake system for condition and leaks in accordance with 14CFR Part 43 Appendix D at each annual inspection and checking the brake fluid level each 50 hours.

2 brake master cylinders P/N 680-1 weight 1.46 pounds. Scott brake master cylinder parts removed 1.35 pounds. Weight and Balance change negligible. Aircraft Equipment List updated to conform with this alteration.
End.

Additional Sheets Are Attached