KNOTS 2U, LTD.
MAIN GEAR FAIRING INSTALLATION AND MAINTENANCE MANUAL

Aircraft Eligibility: Piper PA-28-140, PA-28-150, PA-28-160, PA-28-180, PA-28-235, PA-28-151, PA-28-161 serial numbers thru 28-7716323, PA-28-181 serial numbers through 28-7790607.

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Revision Control

Rev. No.	Date	Effect
A	2-18-2000	CHANGED SCREW LENGTH FROM R-10 TO R-8. CHANGED FASTENING ON LGF AND RGF FROM JOINT TABS TO FIBERGLASS TABS.
B	8-24-2011	REVISED MANUAL TO NEW FORMAT. CHANGED CLIPNUT PART NUMBER FROM 13100000-3 TO BACN10FX83.

Table of Contents

Section 1.0 Introduction

This manual describes the installation of the Knots 2U Main Gear Fairings P/N's LUSF, RUSF, LSF, RSF, LGF, RGF, onto the original style Piper wheel pants. The appropriate Piper service manual for the aircraft should be used in conjunction with this manual. The best time to paint the parts is after initial installation is complete. Remove parts from aircraft, paint, and reinstall. Priming is not necessary on fiberglass or aluminum parts. Surfaces should be scuffed with a scotch brite or 400 grit sandpaper and painted.

Section 2.0 Installation

2.1 Jacking the Aircraft And Deflating the Struts.

Referencing the appropriate Piper Service Manual, jack the aircraft high enough to fully extend both struts and raise tires at least 1/2 inch from the ground. Release the nitrogen from both struts and remove air valves.

2.2 Remove Existing Left Strut Fairing.

(REFERENCE DETAIL # 1) Remove the existing strut fairing P/N 63338-00 or equivalent. Discard part while retaining hardware. Check the top bolt of the main landing gear torque link. Confirm that the bolt head is facing outboard. If necessary, remove and re-install with the bolt heading facing outboard. Torque and safety the nut per the appropriate Piper Service Manual.

2.3 Installing P/N LSF, Left Strut Fairing.

(REFERENCE DETAIL # 1) Loosely install P/N LSF, Left Strut Fairing using the same attach hardware removed from original fairing for the top (4) holes. To connect the trailing edge, use (5) AN507C-832R-8 Screws, and (5) A3135SS-017 Washers. To adjust, rotate part so that the trailing edge notch of P/N LSF is centered to the main gear torque link. The brake line should be adjusted to run through the opening at the rear of the LSF without rubbing. When correctly positioned, tighten all screws. Locate P/N SFS, Strut Fairing Spacer to line up with the (2) holes in the strut fairing. Attach using (2) AN507C-832R-8 Screws, and (2) A3135SS-017 Washers.

2.4 Changing Existing Left Gear Washers.

Remove the (3) inboard screws holding the wheel pant in place. Replace existing washers with (3) AN970-4 Large Area Washers and tighten screws.

2.5 Locating P/N LGF, Left Gear Fairing.

(REFERENCE DETAIL #1) Place P/N LGF, Left Gear Fairing around strut and attach trailing edge using (4) AN507-C832R-8 Screws, (4) A3135SS-017 Washers into tabs. Allow fairing to rest against Piper Wheel Pant. The LGF, Left Gear Fairing will fit the contour of the Piper Wheel Pant and must allow for 1/2" minimum clearance between the bottom lip of the LGF and the brake disc, and 3/8" minimum clearance to tire at the closest point. If the opening on top of P/N LGF rubs against the strut fairing, opening may be enlarged slightly to prevent rubbing. (If aircraft has the

early style Piper Wheel Pant with the flange around the base, the flange should be ground away at the (2) points it makes contact with P/N LGF) Tape P/N LGF in place. Run wheel up and down several times through the struts full extension. Check for any binding of parts. If binding occurs adjust P/N LGF or increase size of opening on top of LGF. (A minimum of 1/32" clearance should be maintained through full travel, between LSF & LGF) When proper location is attained, drill (12) #40 holes through dimples around perimeter of LGF into wheel pant, being careful not to drill too deep. A drill stop is recommended for this to prevent damage to tire. Cleco LGF in place at (12) points just drilled.

2.6 Drilling and Installing Hardware.

(REFERENCE DETAIL #1) Remove Clecos and P/N LGF from Wheel Pant. Drill Wheel pant per Detail #1 at the (12) attach points just drilled. Note: make sure the .50 holes are in a location that will be covered by P/N LGF when it is installed! It is recommended when drilling the fiberglass to start with a smaller drill size and gradually move up to the final size. Use a drill stop to prevent drilling too deep and damaging tire! With holes drilled install (12) BACN10FX83 clip-on Nut Plates on Wheel Pant. Drill P/N LGF in dimpled points to accept an A3135SS-017 washer.

2.7 Final Installation of P/N LGF.

Place P/N LGF in place and check all hole locations. The perimeter of P/N LGF may be sanded to attain optimum fit to Wheel Pant. Install P/N LGF using (12) AN507C-832R-8 Screws, and (12) A3135SS-017 Washers. Run gear through it's full up and down travel to confirm there is no binding. Also confirm that screws are of a proper length so as not to rub on tire.

2.8 Installing P/N LUSF, Left Upper Strut Fairing.

(REFERENCE DETAIL #1) Place P/N LUSF Left Upper Strut Fairing around P/N LSF and fasten trailing edge together using (1) AN507C-832R-8 Screw and (1) A3135SS-017 Washer. Hold P/N LUSF firmly against bottom wing skin and adjust so it is positioned properly around P/N LSF. Tape P/N LUSF in place and drill (6) #40 holes through fairing and into lower wing skin at the dimpled locations. Confirm that that the two most forward holes miss the main wing spar that runs directly behind the forward screw locations! If the dimpled locations fall on an existing rivet they may be moved up to .625" while observing minimum edge distance. (Use of a drill stop is recommended to prevent drilling deeper than necessary) Cleco P/N LUSF in place and check for proper fit. Remove Clecos and tape to allow LUSF to slide away from wing. Enlarge the (6) # 40 holes just drilled in airframe to a #2 Hole size. Install (6) P/N A8K-75 Rivnuts in holes. Drill (6) holes in LUSF to a #15 holes size and countersink to accept A3135SS-017 Washers. Fasten P/N LUSF to aircraft using (6) AN507C-832R-8 Screws, and (6) A3135SS-017 Washers.

2.9 Installing Fairings on Right Gear.

Repeat steps 2.1 through step 2.8 on right side. Note that P/N's for right side fairings start with an "R" instead of an "L".

2.10 Servicing Struts and Lowering Aircraft.

Service struts per the Piper Service Manual and reinstall air valves. Lower aircraft and remove jacks. A final inspection should be made to confirm no binding of parts is evident.

Section 3.0 Removal

If removal of a fairing is required it may be accomplished by reversing the installation procedures shown in section 2.1 thru 2.9 of this manual.

Section 4.0 Parts List

Part No.	No. Required	Description
LSF	1	Left Strut Fairing
RSF	1	Right Strut Fairing
LGF	1	Left Gear Fairing
RGF	1	Right Gear Fairing
LUSF	1	Left Upper Strut Fairing
RUSF	1	Right Upper Strut Fairing
SFS	2	Strut Fairing Spacer
BACN10FX83	24	½" Depth #832 Clip-On Nut Plate
AN507C832R-8	60	C/S Stainless Steel Screw
A3135SS-017	60	C/S Stainless Steel Washer
A8K-75	12	Keyed Rivnut
AN970-4	6	Large Area Washer

Section 5.0 Paperwork

Perform paperwork (337 and log book entries). Place Supplemental Type Certificate and KNOTS 2U, LTD. Maintenance Manual with log books.

Main Gear Fairing kit and hardware weight = 5.9 lbs. Minus weight of Piper strut fairings removed.
Arm = 109.64 inches.

Section 6.0

Installation Diagram Detail 1

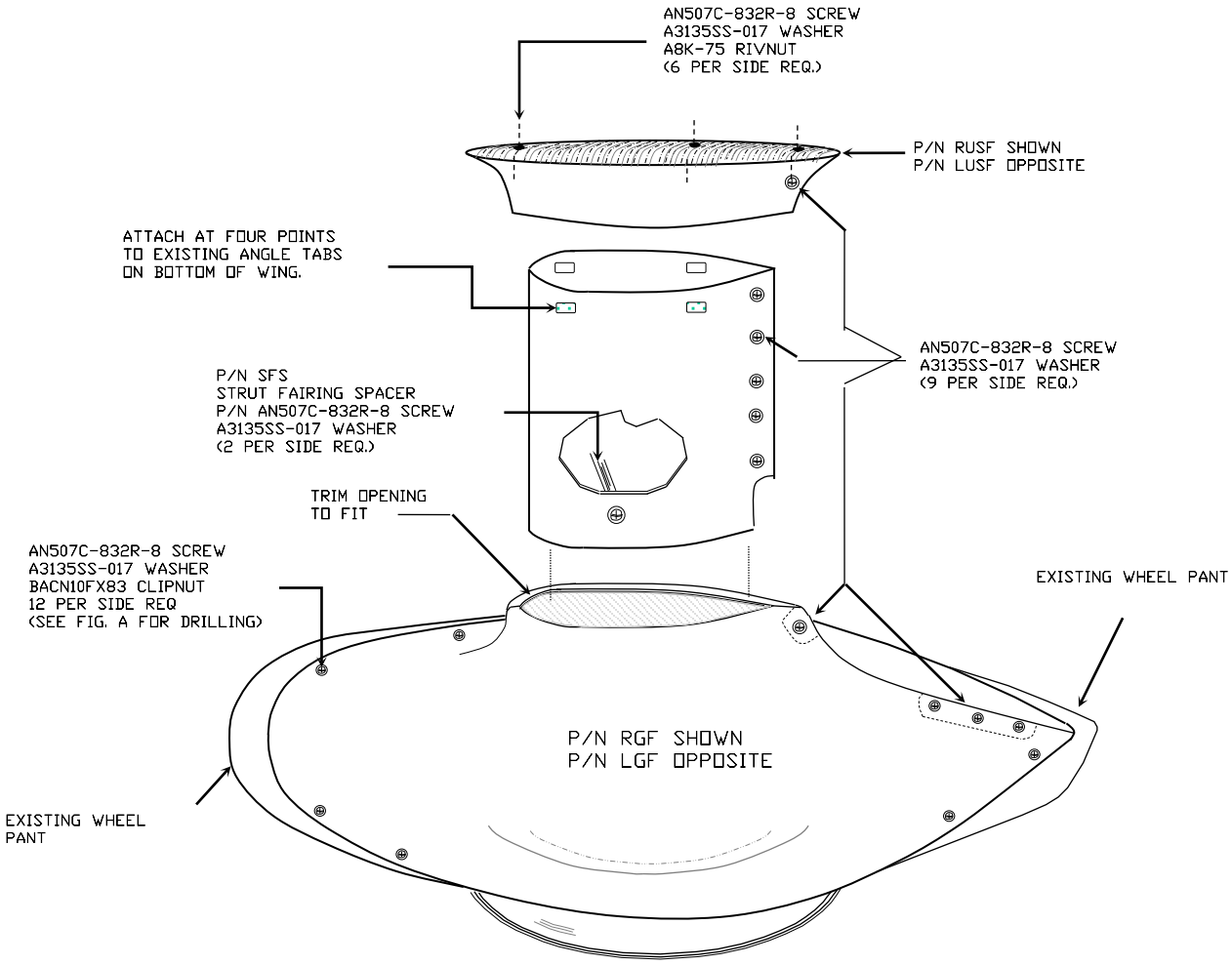
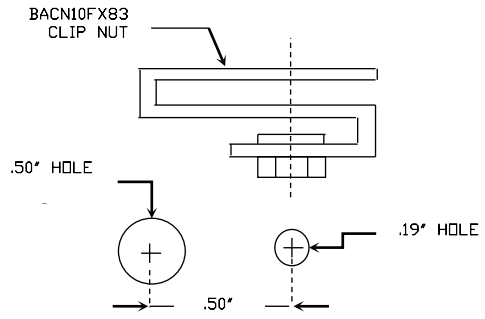


FIGURE A. CLIPNUT DRILLING DETAIL



DRILL EXISTING GEAR FAIRING HOLES TO ABOVE DIMENSIONS FOR INSTALLATION OF CLIP NUTS.

DETAIL #1

Section 7.0 Maintenance / Instructions for Continued Airworthiness

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

For the current copy of this manual please contact Knots 2U, Ltd. at 262 763-5100 or via email at technical@knots2u.com.

PART A. INSPECTION

1. During preflight, annual, or 100 hour inspections, inspect Gear Fairing, attachment hardware, and brake line for excessive wear or looseness. Inspect condition of all fairings and hardware.

PART B. MAINTENANCE

1. There are no special tools required to maintain the Gear Fairings. Any tools needed are basic hand tools.

2. If the Gear Fairing attachment hardware is found to be excessively worn or loose during the inspection, it should be replaced.

PART C. CRACKING OR DEFECTS

1. If a crack is found on a Gear Fairing, stop drill the crack and fill it with silicon and smooth the surface.

2. If any crack exceeds 1 inch in length; or, if a crack runs from an attachment hole to the outer edge of the Gear Fairing, remove the part and repair the crack according to FAR 43.13-1A Acceptable Methods, Techniques and Practices - Aircraft Inspection and Repair, Chapter 2.