Chapter 11 Main Gear and Fairings

11.1 Introduction	. 11.1
11.2 Parts List	. 11.2
11.3 Construction Procedures	. 11.4
11.3.A Assembling the Wheels and Tires	. 11.4
11.3.B Installing the Axle	. 11.6
11.3.C Installing the Cleveland Brake Assemblies	. 11.10
11.3.D Installing the Main-gear Fairings	. 11.13
11.3.E Installing the Nose Gear Wheel Pants.	<u>. 11.20</u>

11.1 Introduction

In this chapter you will install the main gear wheels and tires, the axle, the brakes assemblies and the main-gear fairings. Although the brakes will be completed later in this manual, see Chapter 12 *Brake System and Rudder Controls* on page 12.1, the Cleveland brake assembly is installed in this chapter in order to fit the wheel pants. Cleveland wheels and brakes are standard on the ES. The all metal main landing gear of the Lancair ES is designed for strength, simplicity and ease of installation. The design allows the wings to be removed without having to remove the landing gear.

The Lancair ES wheels are set to a 0.5° toe-in angle. This chapter also includes information for calculating the toe-in and building a simple jig for correctly aligning the wheels.

These major components of the main gear are pre-installed in your fastbuild kit:

- Gear-leg receptacles The gear-leg receptacles are bolted to the shear panels. These have been pre-installed in your fastbuild kit. You will mount the gear legs to the gear-leg receptacles.
- Backing plates The backing plates are installed inside of the shear box. They are bolted to the gear-leg receptacles.

Steps to Completion

You will install these components of the main gear:

- Wheels and tires
- Axle mount and axle
- Cleveland brake assemblies
- Main-gear, gear-leg and wheel pant fairings

Caution!

There are serial numbers stamped on the gear-leg receptacles, the gear legs and the axle mounts. These numbers need to match. If the serial numbers do not match, you need to contact KCI. See 1.5 *Shop Tools and Supplies* on page 1.8 for the contact information.

Always perform the pre-fits that are recommended.

A Word about Sanding and Cleaning

The instructions in this chapter refer to preparing a surface or preparing a bonding area. When we recommend that you prepare a surface or bonding area, we expect you to do each of the following steps every time.

- 1. Sand the area using 40-grit sandpaper.
- 2. Vacuum all sanded areas.
- 3. Clean all sanded surfaces with Acetone.



Chapter 11 Page 11.1 REV. 3/04-30-2008 Main Gear and Fairings

11.2 Parts List

Serial numbers have been stamped on the gear-leg receptacles that are pre-installed in the bottom fuselage. These serial numbers need to match the numbers on the gear legs and the axle mounts. These components have been match-drilled and must be used together.

Wheels and tires

Item	Part Number	QTY	Description
4)	TR-15x6.00-6	2	Tires for main gear, 6" - 6 ply
5)	TU-15x6.00-6	2	Tubes for main gear, 6" - 6 ply

Axle

Item	Part Number	QTY	Description
1)	GM045	1	Cleveland axle
2)	3451-4	2	Axle mount
3)	3454-1	2	Wheel fairing mounting bracket
4)	AN365-624A	4	Lock nut (for axle install)
5)	AN5H13A	4	Bolt (for axle install)
6)	AN6-20A	4	Bolt (for axle install)
7)	AN960-516	4	Washer (for axle install)
8)	AN960-616	4	Washer (for axle install)
9)	MS21025-24	2	Axle nut
10)	MS24665-362	2	Cotter pin (for axle nut)
11)	AN4-22A	4	Bolts (axle mount)
12)	AN960-416	4	Washers (axle mount)
13)	AN365-428A	4	Locknuts (axle mount)

Gear legs

Item	Part Number	QTY	Description	
1)	3451-2	2	Main gear legs (verify the serial number)	
2)	AN960-616	2	Washers (gear legs)	
3)	AN6H30A	2	Bolts (gear legs)	
Brake	S			
Item	Part Number	QTY	Description	
1)	199-20800	1	Wheel brake assembly with master cylinder	
2)	AN833-4D	4	90 deg. fitting	
3)	AN924-4D	2	Chuck nut (brake line)	
4)	BL-0380	2	Blue brake lines	
Main g	gear fairings			
Item	Part Number	QTY	Description	
1)	2048LT	1	Fuselage-gear fairing, left top	
2)	2048LB	1	Fuselage-gear fairing, left bottom	
3)	2048RT	1	Fuselage-gear fairing, right top	
4)	2048RB	1	Fuselage-gear fairing, right bottom	
5)	2043	2	Gear-leg fairing	
6)	2045LA	1	Left wheel pant with access panel	
7)	2045RA	2	Right wheel pant with access panel	
8)	MS24693-S28	10	Screws (brake cover)	
9)	K1000-3	8	Nutplates (brake cover)	
10)	AN426A3-5	20	Rivets (brake cover)	
11)	AN6-35A	2	Bolt (main wheel pant, outboard)	
12)	AN970-6	2	Washer (main wheel pant, outboard)	
13)	3453	2	Spacer (main wheel pant, outboard)	

Revisions



Main Gear and Fairings Lancair International Inc., Represented by Neico Aviation Inc., Copyright 2008 Redmond, OR 97756

REV. 2nd Ed./08-15-2006

Page 11.2

Main gear fairings (Continued)

Item	Part Number	QTY	Description
14)	AN060-616	2	Washer (main wheel pant, outboard)
15)	3454-2	1	Aft bracket (left wheel pant mount)
16)	3454-3	1	Front bracket (left wheel pant mount)
17)	3454-4	1	Aft bracket (right wheel pant mount)
18)	3454-5	1	Front bracket (right wheel pant mount)
19)	AN526-1032-R8		Screws (main wheel pant - inboard)
20)	K1000-3		Nutplates (main wheel pant - inboard)
21)	AN426A3-5		Rivets (main wheel pant - inboard)
22)	AN960-10		Washers (main wheel pant - inboard)
23)	MS24694-S53/S54/S56		Screws (main wheel pant - inboard)
24)	K1000-6		Nutplates (fuselage-gear fairing)
25)	AN426A3-5		Rivets (fuselage-gear fairing)
26)	MS24693-S28		Screws (fuselage-gear fairing)

Other parts

Item Part Number 1. PH-250

Description 1/4" phenolic for wheel pant bulkhead

QTY



Revisions



REV. 2nd Ed./08-15-2006 Page 11.3

Main Gear and Fairings

11.3 Construction Procedures

11.3.A Assembling the Wheels and Tires

The main gear of the ES uses 6.00×6 wheels and tires. Cleveland wheels come standard with your kit and are included with the Cleveland axle (GM045).

This section describes the assembly and installation of the wheels and tires. The wheels and tires must be installed before the axle is aligned in section 11.3.B *Installing the Axle* on page 11.6 of this chapter.

Steps...

1. Disassemble the 6.00 x 6 wheels, including the bearings and all other parts.

See Figure 11.3.A.1 for identification of each of the wheel parts.

- 2. Place the rim half without the valve stem on a bench with the outboard face of the rim down.
- 3. Insert the 6.00 x 6 tube (TU-15x6.00-6) into the tire (TR-15x6.00-6).
- 4. Inflate the tube with a very small amount of air. This will help unfold the tube, eases the assembly and prevents kinks.
- 5. Place the tire and tube on the rim that is on the bench. Push the tire down into the rim, always avoiding pinching the tube.

The tire will not go all the way onto the rim. The tire will seat fully when you later apply air pressure.

6. Place the other half of the rim onto the tire, aligning the valve stem hole and the three bolt holes.



Chapter 11



Page 11.4 REV. 2nd Ed./08-15-2006

Main Gear and Fairings

7. Pull the valve stem through the rim as you work the rim down.

Tip: Some tire manufacturers indicate the lightest side of the tire with a small red mark. Align this red mark with the valve stem.

WARNING: The tube can easily be damaged during installation. Be careful when pushing the rims together or you will pinch the tube or stem between the rims which instantly creates a leak! Avoid this problem by simply being careful.

8. Place the disc brake assembly (199-20800) into the inboard face of the wheel, the side opposite the valve stem.

The brake assembly must be in place before the two halves of a Cleveland rim can be secured together.

9. Secure the two rim halves with the manufacturer supplied bolts and nuts.

10. Inflate your tires.

• Condor brand 6.00x6 tires – inflate them to 60 psi.

• McCreary brand 6.00x6 tires – inflate them to 40 psi.

It is a good idea to inflate slowly and bounce the tires a few times before reaching full inflation. This will help loosen any folds in the tube.

- 11. Grease the two wheel bearings with a quality grease, making sure the grease penetrates the entire bearing.
- 12. Place the bearings into the races of the wheel.

After the bearings are placed into the race, a seal consisting of two thin steel washers and a felt washer is secured with a retainer ring. The seals and rings retain the bearings in the wheel.

Refer to Figure 11.3.A.1 for identification of the wheel parts.



Figure 11.3.A.2 Assembling the tire and wheel

11.3.B Installing the Axle

In this section you will install the axle, set the wheels to a 0.5° toe-in angle and attach the gear legs to the receptacles in the bottom fuselage.

Since the gear legs have not been drilled for mounting the axle, you can adjust the wheel alignment during the installation. You will construct a simple jig that will help you accurately align the wheels.

Before you start, make sure the serial numbers match. The gear-leg receptacle, the gear legs and the axel mount serial numbers must match.

Steps...

- Mount the wheel fairing mounting bracket (3454-1) to the axel mount (3451-1) as shown in Figure 11.3.B.1.
 Tip: Read the next step. You will complete the mounting of the brake torque plate and the axle at the same time as this step.
- 2. Mount the brake torque plates (199-20800) so they are on the aft side of the axle. The left and right sides of the torque plates must be mirror images.

You will notice two bushings in the brake torque plates. Align the bushings to the two upper holes of the axle. Do not remove the tape covering the bushings. Simply align the holes and push the bolt through the tape.

- 3. Install the AN5H13A bolts and the AN960-516 washers in the upper two holes of the axle mount. These two holes are threaded.
- 4. Safety wire the AN5H13A bolts.

WARNING: The AN5H13A bolts used in this mounting must be safety wired prior to flight!

5. Install the AN6-20A bolts, AN960-616 washers, and AN365-624A locknuts in the lower two holes.





Page 11.6 REV. 2nd Ed./08-15-2006

Main Gear and Fairings

Securing the Wheels to the Axle

Steps...

- 1. Secure the wheels to the axles by carefully sliding the wheel onto the axle until the inboard bearing is seated. Install using a MS21025-24 axle nut.
- 2. Tighten the nut until there isn't any slop in the wheel bearings. Now lock the axle nut in position with an MS24665-362 cotter pin.

Tip: Do not run the cotter pin completely through the axle nut. Later the bolt that retains the wheel pant will thread through the center of the axle.

3. Slide the axle mount and the installed wheel onto the bottom part of the gear leg.

Make sure the axle mount is pushed all the way onto the gear leg.

Building the Wheel Alignment Jig

Now you will need to construct a wheel alignment jig as shown in Figure 11.3.B.4. The purpose of the wheel alignment jig is to allow you to accurately install the wheels at 0.5° of toe-in. The jig simply allows you to accurately measure 0.5° at a distance over three feet.

Steps...

1. Tie a 5' (1500 mm) piece of straight angle steel or aluminum to each wheel.

It is important that the straight angle touches the wheel and not the tire. If the straight angle touches the tire, deflate the tire or install a spacer of equal thickness on the fore and aft side of the wheel.

Mount the straight angle pieces so both the left and right sides are at the same height.

2. Place a long straight piece of 2' x 4", three feet (910 mm) forward of the front of the tires as shown in Figure 11.3.B.4.

This completes the wheel alignment jig. Now you will complete the steps for the wheel alignment toe-in.



Figure 11.3.B.3 Attaching the straight angle to the tire



Chapter 11	Page 11.7	REV. 2nd Ed./08-15-2006	
		Main Gear and Fairings	
Lancair International Inc., Represented by Neico Aviation Inc., Copyright 2008 Redmond, OR 97756			

Setting the Wheel Alignment Toe-in

Steps...

1. Set the wheels at 0.5° toe-in.

In summary:

- Transfer the fuselage center line to the 2' x 4" using a plumb bob.
- Drop a plump bob from the straight angle directly in front of the tires.
- Measure the distance to the fuselage center line on the 2' x 4". Be aware that this distance will change slightly as you adjust the wheels so you may have to take this measurement a couple of times.
- 2. Make a mark 3' (910 mm) forward of where you took the measurement. Measure the distance from the angle to the fuselage center line at this location.
- 3. Adjust the wheels so the distance from the angle to the fuselage center line, at the 2' x 4", is 0.3" (8 mm) less than the distance to the fuselage center line in front of the tires.
- 4. Rotate the axle mount to get the correct amount of toe-in. Re-check both dimensions. Once you have the axle mount aligned, drop superglue into the axle mount to keep it aligned during drilling.
- Using the two 3/16" (4.7 mm) pilot holes in the axle mount, drill the gear leg and axle mount.
 We recommend the following procedure for drilling the gear legs and axle mounts.
 - Use cutting oil and turn the bit slowly. It may take a few drill bits to get through the hardened steel gear legs. (Use a cobalt steel drill.)
 - Drill one 3/16" (4.7 mm) pilot hole through the gear leg at a time. There are four pilot holes in each of the axle mounts.
 - Check the alignment of the holes to the holes on the opposite side.
 - Insert a 3/16" bolt through each hole after drilling. Drill the hole as straight as possible.







6. Using the pilot holes, drill the holes to final size with a 1/4" (6.3 mm) diameter drill. Drill the holes all the way through the gear legs (3451-2).

Insert an AN4-22A bolt before you drill the next hole. This will help keep the gear leg aligned.

Secure the gear leg to the axle mount with AN4-22A bolts, AN960-416 washers, and AN365-428A locknuts.
 Tip: The AN4-22A bolts must be installed from the aft side of the gear leg for clearance with the brakes.

Attaching the Gear Legs

Steps...

1. Slide the gear legs (3451-2) into the receptacles in the bottom fuselage.

Tip: If this is a tight fit, use oil to allow the gear legs to slide in more easily.

2. Install the washers (AN960-616) and the bolts (AN6H30A).

The bolt secures to a castle nut welded to the receptacle.



11.3.C Installing the Cleveland Brake Assemblies

The brake assemblies are mounted just inboard of both main wheels. The brake assemblies should always "float" in their mounts to avoid excessive brake wear. When the brakes are not applied you should be able to wiggle the brake assembly on the brake disc.

replace them with 90° fittings (AN833-4D).

Figure 11.3.C.2 Detail view of the brake assembly





Main Gear and Fairings

REV. 2nd Ed./08-15-2006

Lancair International Inc., Represented by Neico Aviation Inc., Copyright 2008 Redmond, OR 97756

Page 11.10

An exploded view of the Cleveland brake assembly is provided in Figure 11.3.C.3. Keep in mind that you do not have to assemble all these pieces, for example, the brake linings are already riveted to the pressure plates. The drawing will be useful for future maintenance.

Figure 11.3.C.3 Cleveland brake assembly installed





Page 11.11 REV. 2nd Ed./08-15-2006

Main Gear and Fairings

Lancair International Inc., Represented by Neico Aviation Inc., Copyright 2008 Redmond, OR 97756

Chapter 11

Preparing for the Brake Installation

The following items must be complete before you can install the Cleveland brake assemblies.

- The brake discs must be secured to the wheels.
- The wheels must be mounted on the axle.

Steps...

- 1. Slide the inboard half of the brake assembly the part with the fluid fittings onto the axle mount. This assembly floats on the two mounting pins.
- 2. Secure the outboard brake pressure plate to the inboard half of the brake assembly.

Safety wire these bolts.

3. Install the 90° bulkhead fittings (AN833-4D) on the left and right side of the fuselage.

We recommend locating the bulkhead fittings at the same location of both sides of the fuselage. 45° bulkhead fittings will also work well.

The bulkhead fitting is located at approximately BL-19. Center the fitting fore/aft on the coreless area in front of the forward shear panel. Again, if this appears to be too close to the gear-leg receptacle, simply move the fitting forward.

- 4. Mark the location on each side for the bulkhead fittings.
- 5. Drill a 7/16" hole on each side.
- 6. Slide the fittings through the hole and secure with the checknut (AN924-4D).

On the inside of the fuselage cover the fitting with a piece of tape to keep the brake lines clean.

7. Install the blue brake lines (BL-0380) between the brake and the bulkhead fitting.

Run the brake line up along the forward side of the gear leg. Use a couple of tie wraps to secure the brake line to the gear leg.



Figure 11.3.C.5 Bulkhead fitting





Figure 11.3.C.4 Bulkhead fitting installation - right side

11.3.D Installing the Main-gear Fairings

The main gear is covered by fairings to reduce drag and to improve appearance. The fairings consist of three pieces on each side.

- Fuselage-gear fairing The upper section which consists of two pieces, a top and a bottom. The top piece bonds to the fuselage while the bottom piece is removable. Includes part numbers 2048LT, 2048LB, 2048RT and 2048RB.
- Gear-leg fairing A streamlined piece that covers the tubular gear leg. Includes part numbers 2043.
- Wheel pant Another streamlined piece that covers the wheel. Includes part numbers 2045LA and 2045RA.

The top contour of the gear-leg fairing, which is the middle piece of the main-gear fairings, should fit the contour of the fuselage-gear fairing while the bottom contour fits to the wheel pant.

Gear-leg Fairings

Steps...

- 1. Remove the peelply from the gear-leg fairings and clean the molded side with Acetone.
- 2. Trim the gear-leg fairings to the dimensions given in Figure 11.3.D.1.
- 3. Pre-fit the gear-leg fairings to get an idea of how each one mounts.

Both the fuselage-gear fairing and the wheel pant need to be pre-fit to the gear-leg fairing. Match the contours where they meet the gear-leg fairing.

The gear-leg fairing should fit as follows:

- Lower edge of the fairing should be 3/4" (20 mm) from the axle mount.
- Trim the length of the fairing to 25-1/2" (650 mm).
- Trim the bottom of the fairing to 5-3/4" (145 mm) of the chord length.
- Trim the top of the fairing to 7-1/2" (190 mm).

• The exact fore/aft positioning is not critical but should be consistent on both sides!

After the T.E. of the gear-leg fairing is glued together, you will have to remove the gear-leg to slide it off.

4. Bond the trailing edges of the gear-leg fairings together with a thick epoxy/flox mixture. See Figure 11.3.D.2.

Figure 11.3.D.1 Side view of the gear-leg fairing

• Clamp straight edges to the fairings to ensure a straight trailing edge.

While curing, the contour of the gear-leg fairing should be matched to that of the fuselage-gear fairing and the wheel pant. This will ensure the right shape for the gear-leg fairing.

Straight edge

Epoxy/flox

Clamp

Figure 11.3.D.2 Top-end view of the gear-leg fairing

Gear leg



• Sand the aft 1" of the inside of the gear-leg fairing. Clean with Acetone and apply the epoxy/flox mixture.



Chapter 11 Page 11.13 REV. 2nd Ed./08-15-2006 Main Gear and Fairings

Wheel Pants

The wheel pants are provided in two pieces, the entire wheel pant and the brake cover access panel that fits on the inboard side of each wheel pant.

If you plan to land on unimproved airstrips, you will also need to complete the steps below for *Adding a Wheel-Pant Bulkhead*.

Steps...

1. Cut out the brake access openings on each wheel pant (2045LA and 2045RA).

Leave a 3/4" (20 mm) flange for the brake cover.

If the gap between the brake cover and the wheel pant access panel opening is uneven, clean it up with epoxy/micro.

- 2. Release tape the brake cover access panel and form a 4-BID flange.
- 3. Countersink the brake cover for the MS24693-S28 screws.
- Install three nutplates (K1000-3 along both the forward and aft edges of the flange for the brake cover.
 Use a # 29 drill for the K1000-3 nutplates. Secure the nutplates with AN426A3-5 rivets.

Adding a Wheel-Pant Bulkhead

The purpose of the bulkhead is to prevent dirt and other debris from accumulating inside the wheel pant. The exact location is not critical, just ensure that there is adequate clearance between the tire and the bulkhead.

Steps...

- Install a wheel-pant bulkhead by cutting a piece to fit behind the tire in the aft section of the wheel pant.
 Use 2 PPS prepreg and secure with a 2" wide 2-BID on the front side.
- Drill a vent hole in the upper part of the bulkhead.



Figure 11.3.D.3 Fitting the brake cover



Finishing the Wheel Pants

Steps continued...

- 5. Drill a 3/8" diameter hole for the AN6-35A bolt on the outside of the wheel pant at the location marked on the wheel pant.
- 6. Tape a 1/2" (15 mm) foam spacer to the top the tire. See Figure 11.3.D.5.

This is to ensure adequate clearance between the tire and the wheel pant.

Aligning the Wheel Pants

Steps...

1. Align the wheel pants by resting the wheel pant on the gear-leg fairing.

Now align using the following guidelines:

- The washer and spacer set the inboard/outboard alignment of the wheel pant. Also refer to Figure 11.3.D.10.
- Tilt the wheel pant fore/aft so it is approximately level.
- The fairing center line should be parallel to the wheels or at about 0.5° toe-in. Perhaps the easiest method of accomplishing this is to draw a line on the floor showing the center line of the wheel. Then simply sight from above the wheel pant and align the wheel pant to the center line.

See the next page for additional alignment information for the wheel pants and details for calculating the toe-in. The toe-in can be precisely set using the equations in *Calculating the Toe Angle* on page 11.16.









Calculating the Toe Angle

- 1. Measure an equal distance, perpendicular to the center of the axle to each tire.
- 2. Draw two circles on the floor, one around each tire. The circles need to meet the following criteria:
 - Any diameter circle can be used,
 - Need to be equal distance from the center of the axle.
 - Calculate the $\frac{distance}{degree}$ using the following formula:

 $diameter \times 3.1416 = circumference \div 360 = \frac{distance}{degree}$

- 3. Measure the distance for A and B, then C and D.
- 4. Calculate the toe angle by first calculating the distance, *n*, for the left and right sides, subtracting the smaller number from the larger number.

Left side -n = A - B or n = B - A

Right side -n = C - D or n = D - C

Now use *n* to find the toe-in or toe-out for each side.

 $n \div 2 = \dots \div 0.122 = Toe-in \text{ or } Toe-out$

Figure 11.3.D.8 Side view of the wheel pant alignment



Figure 11.3.D.9 Top view of the wheel pant alignment







Mounting the Wheel Pants

The wheel pants must be aligned before they are mounted. See *Aligning the Wheel Pants* on page 11.15.

Steps...

- 1. Install the AN6-35A bolt on the outboard side of the wheel pant using the following steps:
 - Sand the AN970-6 area washer with 40-grit sandpaper.
 - Sand the inside of the wheel pant around the 3/8" hole with 40-grit sandpaper.
 - Clean all sanded areas with Acetone.
 - Bond the area washer in place and reinforce with 2-BID.
 - Install the spacer (3453), the AN970-6 area washer, the AN960-616 washer and the AN6-35A bolt.



Figure 11.3.D.10 Mounting the wheel pants - outboard side





Chapter 11 Page 11.17 REV. 2nd Ed./08-15-2006 Main Gear and Fairings

2. Mount the wheel pant on the inboard side using the following steps.

These steps are written for both the left and right side brackets.

- Install the nutplates at each end of the center bracket (3454-1) where the aft and forward brackets will install. Use nutplates (K1000-3) at each end and secure them using screws (AN526-1032-R8) and rivets (AN426A3-5).
- Install the forward bracket (3454-2 and 3454-4) to the center bracket.
- Install the aft bracket (3454-3 and 3454-5) to the other end of the center bracket.
- Release tape the brackets and fill the gap between the wheel pant and the bracket with epoxy/flox.

Tip: Verify that the wheel pants are aligned before applying the release tape.

• Drill the holes through the wheel pant and the brackets. Disassemble and install the nutplates.







Main Gear and Fairings

REV. 2nd Ed./08-15-2006

Lancair International Inc., Represented by Neico Aviation Inc., Copyright 2008 Redmond, OR 97756

Page 11.18

Revisions

Fuselage-gear Fairings

The top piece of the fuselage-gear fairing is bonded to the fuselage. The bottom piece will be removable.

The gear-leg fairing and the wheel pant must be connected to the fuselage before the fuselage-gear fairing can be fitted.

Steps...

1. Fit the top fuselage-gear fairings (2048LT and 2048RT) by aligning the top fuselage-gear fairings to the gear-leg fairings.

The top pieces of the fuselage-gear fairings should rest naturally on the gear-leg fairings.

2. Trim the fuselage-gear fairing top pieces as necessary in order to fit snugly against the bottom of the fuselage. The fuselage-gear fairings should not cover the access

holes in the wing fairing.

Tip: Before bonding the top fuselage-gear fairings in place you may find it easier to install the nutplates securing the bottom fuselage-gear fairings to the top fuselage-gear fairings. The following steps guide you through this process.

- 3. Fit the bottom fuselage-gear fairings (2048LB and 2048RB). These pieces are flexible and fit easily.
- 4. Drill the alignment holes for the clecos once the bottom pieces are aligned.
- 5. Install the top and bottom fuselage-gear fairings using clecos.
- 6. Install nutplates (K1000-6) approximately every 3" in the top fuselage-gear fairings and the fuselage in difficult to reach locations using the following locations.
 - Open the size of the Cleco holes by drilling #29 holes through the fuselage-gear fairings and the fuselage where you want to install the nutplates.
 - Center the nutplate over the hole and secure with rivets (AN426A3-5).
 - Countersink the holes in the fuselage-gear fairing to accommodate the MS24693-S28 screws.
- 7. Apply 3-BID over the nutplates and bond to the fuselage.

- 8. Release tape the fuselage-gear fairings and form a smooth transition onto the fuselage with an epoxy/micro mixture.
- 9. Prepare all bonding surfaces prior to bonding.
- 10. Bond the top fuselage-gear fairings in place with a thick epoxy/flox mixture.
- 11. Sand (or fill) the gap between the top and bottom fuselagegear fairing to an even 0.06" to allow for paint.

Figure 11.3.D.15 Securing the bottom fuselage-gear fairing to the fuselage







Chapter 11

Make a smooth transition with epoxy/micro.

REV. 2nd Ed./08-15-2006



Main Gear and Fairings Lancair International Inc., Represented by Neico Aviation Inc., Copyright 2008 Redmond, OR 97756

Page 11.19

- 12. Secure the gear-leg fairing to the fuselage-gear fairing.
 - First reinforce the gear-leg fairing and the fuselagegear fairing with 2-BID in the nutplate mounting area.
 - With the fuselage-gear fairing and the gear-leg fairing aligned, drill a #29 size hole through the gear-leg fairing and the fuselage-gear fairing.
 - Install the K1000-6 nutplate using the AN426A3-5 rivets.
 - Countersink the gear-leg fairing for the MS24693-S28 screw.

Figure 11.3.E.1 Securing the gear-leg fairing to the fuselage-gear fairing



11.3.E Installing the Nose Gear Wheel Pants

This information is covered in the supplement to the ES manual, *ES Engine Mount & Nose Gear*, part number 033-0007.



Chapter 11

Page 11.20 REV. 3/04-30-2008

Main Gear and Fairings