# REVISION LIST

## CHAPTER 26: FIREWALL FORWARD (PART II)

The following list of revisions will allow you to update the Legacy construction manual chapter listed above.

Under the “Action” column, “R&R” directs you to remove and replace the pages affected by the revision. “Add” directs you to insert the pages shown and “R” to remove the pages.

<table>
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Chapter 26: Firewall Forward (part 2) Continental 550

Contents

1. INTRODUCTION .......................................................................................... 26-1
2. PARTS LIST .............................................................................................. 26-1
3. CONSTRUCTION PROCEDURES ............................................................. 26-4
   A. Mounting the Engine ........................................................................... 26-4
   B. Propeller/Spinner ............................................................................... 26-5
   C. Cowling .............................................................................................. 26-6
   D. Baffling .............................................................................................. 26-9
   E. Engine Control Systems ................................................................. 26-22
   F. Manifold Pressure and Tachometer .................................................. 26-25
      Tachometer ......................................................................................... 26-25
   G. Fuel Systems ..................................................................................... 26-26
   H. Oil Systems ....................................................................................... 26-33
      Oil Temperature Sensor ....................................................................... 26-33
      Oil Pressure Sensor ............................................................................ 26-33
   I. Vacuum System Installation (Optional) ............................................. 26-35

1. INTRODUCTION

The firewall forward construction is divided into two chapters: Chapter 13 and chapter 26. In Chapter 13 you installed the firewall flame blanket, engine mount and nose gear doors. Chapter 26 completes the firewall forward installation. Chapter 26 is issued in two different versions: One for the Continental 550 and one for the Lycoming 540. More specifically the Continental IO 550 N engine and the Lycoming IO 540V4A5 engine. If you have a different model of either of these engines you will discover differences in the instructions as well as the fit of the parts that we offer. In the case of the baffling for example the IO 550 N versus the IO 550 G you will notice a difference in the fit of the baffling against the cylinders, etc. Most parts required for these two engines are available through Lancair.

We can also provide the engine mount and cowling for Lycoming IO 360 installations. However we do not currently support or approve of any other installations than the 3 engines mentioned.

2. PARTS LIST

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### ENGINE CONTROL SYSTEMS

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<td>4</td>
<td>Bolt, Undrilled</td>
<td><strong>Yes</strong></td>
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<td>AN3-7A</td>
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<td>Bolt, Undrilled</td>
<td><strong>Yes</strong></td>
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<td>AN3-10A</td>
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<td>Bolt, Undrilled</td>
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</tr>
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<td>AN3-11A</td>
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<td>Bolt, Undrilled</td>
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<td>AN3-12A</td>
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<td>Bolt, Undrilled</td>
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<td>Bolt, Undrilled</td>
<td><strong>Yes</strong></td>
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<td>Bracket, Prop Cable</td>
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<td>A750-BU-5</td>
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<td>Cable, Propeller</td>
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<td>Cable, Throttle</td>
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<td><strong>Yes</strong></td>
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<td>Clamp, Cable</td>
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<td>Spacer</td>
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<td>Washer, Area</td>
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<td>QTY</td>
<td>DESCRIPTION</td>
<td>OPTIONAL ITEM</td>
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<td>Fitting</td>
<td>**Yes</td>
</tr>
<tr>
<td>2</td>
<td>MS27404-4D</td>
<td>2</td>
<td>Fitting</td>
<td>**Yes</td>
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<td>3</td>
<td>193-4</td>
<td>1</td>
<td>Hose</td>
<td>**Yes</td>
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**MANIFOLD PRESSURE AND TACHOMETER**

1) C5205x4x4 1 Fitting **Yes**

**FUEL SYSTEMS**

1) 4875 1 Gascolator Shroud **Yes**

2) 4876 1 Attach Bracket **Yes**

3) 4890 28’ Fuel Supply Line **Yes**

4) AN912-1D 1 Bushing Reducer **Yes**

5) 5416R14 2 Clamp, Hose **Yes**

6) MS21919-DG32 2 Clamp **Yes**

7) MS21919-DG10 2 Clamp **Yes**

8) AN624-4D 1 Fitting, T **Yes**

9) AN816-4-4 2 Fitting **Yes**

10) AN822-4D 1 Fitting, Elbow **Yes**

11) AN822-4 1 Fitting, Elbow **Yes**

12) 2240-6-8S 1 Fitting, Bulkhead **Yes**

13) 561-1 1 Flange, Inlet **Yes**

14) 510A 4 Fuel Return Line **Yes**

15) 193-4 7’ Fuel Divider Drain Line **Yes**

16) 530 21” Fuel Line **Yes**

17) A500 1 Andair Gascolator **Yes**

18) MS35489-13 1 Grommet **Yes**

19) AN931-12-23 1 Grommet **Yes**

20) 514 1 Hose, Prebuilt **Yes**

21) 515 1 Hose, Prebuilt **Yes**

22) 516 1 Hose, Prebuilt **Yes**

23) K3000-3 3 Nutplate **Yes**

24) AN913-2D 1 Plug **Yes**

25) MSC-34 4 Rivets, Pop **Yes**

26) AN426A3-4 6 Rivets **Yes**

27) SCAT 4 1 Tubing, Flexible **Yes**

28) CCA-1550 1 Valve, Drain **Yes**

29) AN960-6D 1 Washer **Yes**

30) 530 24’ Fuel Pump Drain on Firewall **Yes**

**OIL SYSTEMS**

1) 165-0000 8500K83 1 Anti Chafe Material **Yes**

2) AN3-7A 1 Bolt, Undrilled **Yes**

3) MS21919-DG16 1 Clamp **Yes**

4) 145-0003 8500K14 1 Clamp **Yes**

5) AN912-3 1 Coupling, Steel **Yes**

6) HK822-4 1 Fitting (with 0.5” Restriction) **Yes**

7) AN363-1032A 1 Locknut, Nylon **Yes**

8) 124F001-4CR0160 10” Oil Pressure Line **Yes**

9) MIL-H-600x3/4 1 Oil Breather Line **Yes**

10) AN960-10 1 Washer, Flat **Yes**

**VACUUM SYSTEM INSTALLATION (OPTIONAL)**

1) 212CW 1 Airborne Dry Air Pump **Yes**

2) 145-0001 552H16 10 Clamps, Hose **Yes**

3) 145-0003 552H14 2 Clamps, Hose **Yes**

4) IK1-6-10 1 Fitting, Airborne 90° **Yes**

5) IK8-6-10 1 Fitting, Airborne 135° **Yes**

6) AN840-6D 4 Fitting, Straight **Yes**

7) AN840-4D 2 Fitting, Straight **Yes**

8) 193-10 2 5/8” I.D. Vacuum Stratoflex Hose **Yes**

9) 193-6 7 3/8” I.D. Vacuum Stratoflex Hose **Yes**

10) 193-4 3 1/4” I.D. Vacuum Stratoflex Hose **Yes**

11) H3-12 12 Vacuum Pump Regulator **Yes**

12) 1J7-1 1 Vacuum Pump Filter **Yes**
3. CONSTRUCTION PROCEDURES

A. Mounting the Engine

The 550 uses the Barry (94011-20) engine mount isolator kit.

Mounting Engine
Fig. 26:A:1

Use an engine hoist for this process. Perhaps your local FBO will lend you one for the day? And...watch your fingers!
B. Propeller/Spinner

Supplied with Spinner

Nylon Washer

Screw

Fig. 26:B:1

69" Diameter 2 Bladed Hartzell Propeller
BHC-J2YF-1BF/F7694-4TX

6 washers and locknuts supplied with propeller

These Hartzell propeller blades were designed for the Legacy flight envelope.

NOTE: This illustration is for the purpose of a general overview only. Refer to the “Propeller owner’s Manual” for instructions on Installation and removal.
C. Cowling

For the purpose of installing the cowling, the propeller and the spinner backplate must be installed. We suggest removing the spinner itself to avoid scratches. For the same reason protect the propeller blades. Before starting this section, the aircraft should be leveled for reference.

The cowling is aligned to the spinner and the fuselage. You will need to cut out for the nose gear doors to fit the cowling. We suggest you start by making a cut just large enough to start fitting the cowling. Once aligned properly cut to exact dimensions.

NOTE: When drilling for the cleco holes (that will eventually be used for the screws) install the holes first at the fixed locations. For example for the lower cowling start at the bottom and work your way up along the sides. When drilling the holes for the upper cowling, make sure the cowling matches up good in the front then start drilling in the aft center where it secures to the fuselage. Work your way down the side making sure it is pulled nice and tight. Then drill for the sides. As you are drilling each hole keep checking the rest of the cowling.

The lower cowling is first aligned and then the upper cowling. When the engine is running it “pulls” down a little so we generally set the cowling 1/8” to 3/16” below the spinner. Also allow for a 3/16” clearance between the spinner and the cowling. Trim excess material off along the back.

The upper cowling is set in a similar manner to the lower cowling. Note that at first the cowling may appear to backlock at the air inlets. If this is a problem grind a little off the lower cowling joggle to eliminate this backlock.

Read this section for a better understanding of the whole process before you start. Before drilling any holes, mark all holes on the cowling and double check spacing!

**Cowling Screw Patterns**

Fig. 26:C:1

- **Upper Cowling 4000-01**
  - Install one screw on each side of the spinner.
  - Install 10 screws across top (not including corner screw).

- **Lower Cowling 4000-02**
  - Cut out for the nose gear doors. Install 4 screws along each side and 2 along the front.

**Hardware:**

- Screws MS24694-S5 (48 pcs.)
- Nutplates K1000-06 (48 pcs.)
- Rivets MSC-34 (78 pcs.)
- Rivets AN426A3-5 (20 pcs.) for nose gear door rails.
Cowl Installation (3 Views)
Fig. 26:C:2

Level the cowl to the split line.

Front View

"Split Line" (Bottom of the Joggle)

Clear Prop!

Trim off this portion of the lower cowl joggle where it would overlap the fuselage joggle.

Future trim line transferred. (4” forward from reference line)

4” Reference Line

Upper Cowling

3/16”

1/8” to 3/16”

Lower Cowling

Trim to fit joggle here.

We recommend fitting the lower cowl first. Use spring clamps or quick grips to hold in place.

Gradually trim the gear door opening to custom fit your cowling. The dimensions given are approximate only.

The aircraft must be leveled for reference to fit the cowling.

Bottom View

Gear Door Clearance Hole

20 1/2” approx.

7 1/2” (approx.)

We recommend fitting the lower cowl first. Use spring clamps or quick grips to hold in place.

Gradually trim the gear door opening to custom fit your cowling. The dimensions given are approximate only.
Oil Access Door
Fig. 26:C:3

1. Start by trimming the joggle in the cowl to 3/8".
2. Trim the door so it fits in the joggle.
3. Install the hinge.
4. Install the latch.

Some words about body working the cowling!

Micro finishing the seam between fuselage and cowl. With the cowl installed, prep and spread a layer of micro (thickness as required but thin as possible) along the joint between cowl and fuselage. Don’t bother laying release tape or anything else, just spread the micro right over the seam.

When the micro is slightly firm, but not set up, take a knife blade (twisted sideways just a little) and run it around the joint. It is easy to stay in the joggle, just keep the knife blade against the cowl edge which has a good edge and keep the knife twisted just a little to set the size of the gap. The micro will mound up just a bit - that’s o.k. Make this quick, simple circling maneuver and then let the micro cure. Sand smooth, remove the cowl, give it a little final prep and you’ve got a great seam!
D. Baffling

The baffling is at first glance, a lot of odd looking pieces of aluminum. If taken systematically, it’s not too tough to install. The factory new Continental 550 engines all come with the center, lower cylinder baffles already in place. If you don’t have a factory new engine, be sure to install these baffles as they are critical.

We’ll start with an exploded view for the “big picture” and then on the following page break it down for the assembly piece by piece.
C1. **Install 6 (-021) brackets, one to each cylinder head.**

*Use:* Six 4851-029 steel brackets installed with AN500-A416-6 Screws and MS3538-44 lockwashers.

**NOTE:** These screw into the threaded hole located between the cylinder head valve covers. The hole in the head is shallow, do not use longer screws or bolts. Local grinding may be necessary as the castings can vary slightly. Grind only enough to allow the 4851-028 brackets to set flat and relatively level across their tops, i.e.: in alignment with each other.

**NOTE:** Install oil cooler now. It is too difficult to reach later.
When installing the baffling it is particularly important to understand how the pieces fit together. For example, when installing the oil cooler box 4851-013, at the same time check the fit to the left wing (4851-007) and the left rear panel (4851-012). It is crucial to get a good fit for proper cooling.

Install the K1000-3 nutplates (4) with AN426A3-5 rivets (8).

NOTE: Due to slight variations of each engine it may be necessary to file certain areas.
Oil Door Installation
Fig. 26:D:4

Panhead Screws, AN525-10R6 (4 pcs.)

Washer, AN960-10 (4 pcs.)

The left aft inner baffle 4851-023 will install here.

Bolt, AN3-3A (2 pcs.)

Washer, AN960-10 (2 pcs.)

Machine Screw, MS24694-S48 2 Pcs.

Countersink the holes of the oil cooler box.

Left Rear Panel, 4851-012

Safety wire the hinge pin.

Piano hinge pin 11” long.

Washer AN960-10

Locknut AN365-1032

Piano Hinge MS20001

Oil Cooler Box

The oil door should seal well against the left rear panel.

Trim off lower edge of door to achieve a good fit.

VIEW

AA

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Oil Cooler Box Installation
Fig. 26:D:5

Note that 4851-012 installs on the front face of the oil cooler.

- Oil Cooler Door, 4851-015
- Washer, Flat AN960-10 (3 pcs.)
- Bolt, AN3-5A (3 pcs.)
- Washer, Flat AN960-10 (Ref.)
- Bolt, AN3-3A (Ref.)
- Left Aft Inner Baffle, 4851-023
- Left Outer Baffle, 4851-021
- Terminal Bolt Kit, 05-16100
- Oil Cooler Box, 4851-013
- Oil Cooler Door, 4851-015
- Washer, Flat AN960-10
- Locknut, AN363-1032A
- Locknut, AN363-1032
- Washer, Flat AN960-10
- Washer, Flat AN960-10 (3 pcs.)
- Bolt, AN3-5A (3 pcs.)
- Bolt, AN3-3A (Ref.)
- Cable Bracket, 4851-014
- Cable, A-740BLO720
- Machine Screw, MS24694-S48 (4 pcs.)
- Locknut, AN363-1032
- Washer, Flat, AN960-10
- Modified Clamp, AN742-D4
- Bolt, AN3-5A
- Terminal Bolt Kit, 05-16100
- See Fig. 26:D:6 for the installation of these 2 pieces.

Secure the cable using the terminal bolt kit. The assembly must rotate freely.

Cable to instrument panel.

Modifying The Clamp

Slide the dented rod through the adel clamp. Using a screwdriver and hammer dent the adel clamp.

Dented Rod

Locknut, AN363-1032A
Washer, Flat AN960-10
Modified Clamp, AN742-D4
Left Baffles Installation

Fig. 26:D:6

Position the left aft inner baffle 4851-023 to get a tight fit against the cylinder.

Position the left outer baffle 4851-021 to get a nice fit against the cylinder.
Installing Right Rear Panel

Start by positioning the right rear panel. The outer baffle should fit snug against the cylinder. Once filled align and attach to its right panel. Install the two support brackets. Position the right aft inner baffle so that it fits snug against the cylinder baffling.

Installing Right Rear Panel
Fig. 26:D:8

- Left Rear Panel, 4851-012
- Support Bracket, 4851-034
- Rear Right Panel, 4851-010
- Right Aft Inner Baffle, 4851-018
- Right Wing, 4851-008
- Outer Baffle

Install bracket 4851-020 to the case by removing the nut of the case bolt. Secure to the baffling with (2) MS24693-S4 rivets.

Remove the outboard forward bolt of the starter and install the bracket, 4851-019. Secure to the baffling with (2) MS24693-S4 rivets.
Left Baffles Installation
Fig. 26:D:10

Baffle pieces 4851-035 and 4851-016 should fit snug up against the cylinder.

Secure 4851-005 left front deck to the baffle with:
1) AN3-4A bolts
2) AN960-10L washers
3) AN363-1032 locknuts

Secure 4851-025 bracket with:
1) AN3-4A bolts
2) AN960-10L washers
3) AN363-1032 locknuts

Secure 4851-028 bracket with:
1) AN3-4A bolts
2) AN960-10L washers
3) AN363-1032 locknuts

Secure 4851-035 Baffle with three MSC-34 rivets.

Secure 4851-016 Baffle with two MSC-34 rivets.

Bolt, AN3-4A (2 pcs.)
Washer, AN960-10L (4 pcs.)
Nut, AN363-1032 (2 pcs.)
Rivet, AN526A3-4 (6 pcs.)
Deck Bracket, 4851-028 (3 pcs.)
Nutplate, K1000-3 (3 pcs.)
Lock Washer, MS35338-44 (3 pcs.)
Screw, Fillister Head, AN500-A416-6 (3 pcs.)
Lock Washer, MS35338-44 (3 pcs.)

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Flange, 561-1. Install the flange on the rear left panel in the hole provided.

- Pop Rivets, MSC-34 (3 pcs.)
- Locknut, AN364-832A
- Washer, AN960-08L
- Shroud, 518-02
- Checknut, MS35649-202 (2 pcs.)
- 8-32 Stud, 518-3
- Clamp, 145-0004
- SCAT, Ducting 05-29904
Vacuum Pump Shroud, 1085

Hose Clamp, 145-0004 (2 pcs.)

SCAT, Ducting 05-29904

Suggested location for the 561-1 (1 pc.) flange. Secure with three MSC-34 rivets.

Suggested location of flange for gascolator.

Note: If you have a vacuum pump we suggest that you install the vacuum pump shroud to keep the vacuum pump cool.
E. Engine Control Systems

Throttle Cable Attach Bracket
Fig. 26:E:1

Ref: Engine Divider Head

Torque the throttle arm to 120 inch lbs.

Ref: Engine spacers must be positioned as shown between brackets.

Throttle Bracket, TB653

Washer, Flat, AN960-10

Locknut, AN363-1032

Continental Installation

Washer, Flat, AN960-10

Bolt, AN3-4A

Checknut, AN315-3

Washer, Flat, AN960-10

Washer, Flat, AN960-10

Bolt, AN3-11A

Washer, Flat, AN970-3

Washer, Flat, AN960-10

Washer, Flat, AN960-10

Washer, Flat, AN960-10

Washer, Flat, AN960-10

Locknut, AN363-1032

Throttle Cable, A800-BL-5

Cable Clamp, 31509

Rod End Bearing, HFC-3

Washer, Flat, AN960-10

Washer, Flat, AN960-10

Ref: Engine Dividers Head
Prop Governor Cable Installation

Fig. 26:E:2

Prop cable bracket P/N PG564. Remove the two lower engine foot bolts. Install bracket all the way aft. Torque bolts to 20 ft. lbs. This bracket mounts to the lower two bolts of the front left engine foot.

Prop Cable, P/N A750-BU-5 with check nut (AN315-3). It is typical to shorten the cable by 1/4".

Bolt, AN3-4A (2 pcs.)

Cable Clamp, 31509

Bolt, AN60-10 (2 pcs.)

Washer, Flat, AN80-10 (2 pcs.)

Prop Governor Arm on Governor D20309-39

Bolt, AN3-12A

Washer, Flat, AN950-10 (3 pcs.)

Washer, Flat, AN970-3 (1 pc.)

Washer, Flat, AN960-10 (2 pcs.)

Washer, Flat, AN960-10 (2 pcs.)

Nut, AN363-1032 (2 pcs.)

Locknut, AN363-1032

Bearing, Rod End, HFC-3
Install the mixture cable per Figure 26:D:2. The 565-1 bracket installs on the stud of the oil filter base casting. The inboard end of the 565-1 bracket will fit to the contour of the engine casting. This keeps the bracket firmly in place. Clamp the mixture cable temporarily. Work the mixture cable from lean to rich and adjust as necessary to get proper travel. Adjust the mixture as necessary.

Mount the P/N 103-0026 94811A025+ nut to this stud on the oil filter base casting.

**NOTE:** For the Continental 550-G models use bracket p/n 565-01.

**NOTE:** Use Locktite to install the 103-0026 94811A025+ nut.
F. Manifold Pressure and Tachometer

The manifold pressure is picked up at the forward left side of the throttle body. As with all of the engine instrumentation the final size will depend on the type of MP gage you select. We suggest the shown arrangement routed aft to the firewall. Follow the manufacturer’s recommendations of the sender installation.

Tachometer

The Continental engine does not provide for a mechanical tach drive cable attachment. Therefore, one must use an electronic type tach drive. There are a couple of more common approaches.

1) Use of a mag sensor which sends a signal based on the revolving magnets in the magneto. Typically the mag sensor is a small metallic clip which attaches to the outside of the magneto case, using one of the existing case screws.

2) Another method is to use the wires emerging from the right mag. These were originally designed for a “RD Co. tach unit” and can be adapted for other applications.

Continental Magneto Drive Ratio to Crankshaft: CCW, 1.5:1
G Fuel Systems

The gascolator mounts to the lower right side of firewall. Refer to blueprint #4862 for the location of the gascolator. We suggest creating a coreless area for the gascolator as shown on the blueprint. Remove a 2" diameter section of the aft laminate and corecentered on the gascolator location. Reinforce with 4-BID. Assemble and install the gascolator as shown.

Gascolator Installation
Fig. 26:G:1

Install in aft right baffling piece with MSC-34 pop rivets.

Connects to fuel pump.

Flexible Tubing, SCAT 4

Hose Clamp, 5416R14

Gascolator Shroud, 4876

Attach Bracket 4876

Plug, AN913-2D

Fitting, Bulkhead, 2240-6-8S

Andair Gascolator, A 500

Drain Valve, CCA-1550

Install 3 pcs. K3000-3 nutplates with 6 pcs. AN426A3-4 rivets.

Inlet Flange, 561-1

Pop Rivets, MSC-34

Install in aft right baffling piece with MSC-34 pop rivets.
Primary Fuel System Layout
Fig. 26:G:2

Most fuel flow transducers require an AN816-4-4 fitting in each side.

Typical fuel flow transducer. The fuel flow transducer should be installed following manufacturer’s recommendations. Wrap the transducer with fireshied.

Fuel Line, 12' Long - 4 Lines - straight - straight, 510A
Secure hose to an intake tube with a MS21919-DG36 Clamp.

Fuel Line, 21' Long - 4 Lines - straight-straight, 530
Connects to fuel return on firewall.

Fuel Divider Drain Line 193-4 line 5' long
Secure with:
MS21919-DG32 Clamp
MS21919-DG10 Clamp

Fuel Return Line, 12' Long - 4 Lines, straight - straight, 510A

Grommet MS35489-13

Install an AN931-12-23 grommet in baffle piece 4851-012.

The fuel pump drain is located at the left side of the pump. The drain is all the way up against the engine hose. The hose is 24' long 539 with MS27404-4D fitting installed.

The fuel divider and fuel pump drain need to be routed overboard. See figure 26 G 7.
Engine Driven Fuel Pump
Fig. 26/G:3

AFT VIEW

Fuel Pump

TOP VIEW

Starter Terminal .3125-24UNF

Connect fuel return line here 510A (Ref.)

Connect fuel return line here 510A (Ref.)

Connect line 4890 here.

Fuel Line, 530 (Ref.)
Fuel Distributor
Fig. 26:G:4

Connect fuel line 510A here

Connect 193-4 drain line here

VIEW A

Fuel Divider

Connect 193-4 drain line here

VIEW BB

Fuel Divider
The cylinder drain lines provide an escape for excess fuel that accumulates during both priming and shut down. The fuel is allowed to drain out of the cylinders through the lines and out the sniffle valve. The sniffle valve is supplied with all Continental 550 N models but not the 550 G model. If you have a 550 G model you can either purchase a sniffle valve through Continental or use an HK822-4 fitting and an FUI mounting block available through KCI. The sniffle valve is normally packaged in the same box as the spark plugs.

**NOTE:** It is not considered necessary to wrap the overflow lines with fireshield. However be sure to allow sufficient clearance between the exhaust and the lines.

The sniffle valve must install such that the exit is in the slipstream. We suggest mounting it in the right nose gear door rail.

Drill a hole in the cowling.

Drill and tap nose gear door rail for 9/16-18 thread.
Fuel pressure transducer readings are taken either from the unmetered side or the metered side of the fuel system. This depends on the engine monitoring system used. Consult with the installation manual of the system used to determine to install your system.

It should be noted that the recommended method of sender installation is to "remote" locate the sender. Typically, an electronic sender will have a pipe port on the sender and from the sender, one runs #18 or #20 wire to the instrument panel. As an example, Vision Micro Systems uses a male 1/8 NPT port their senders, others we've seen use a male 1/4 NPT. Since vibrations can cause failures in these senders (the worst being a cracked housing which then begins to spew raw fuel over your hot engine!), one should mount the sender at a convenient location on the engine using an Adel clamp or similar means, then run a 1/4" flex line to the pickup port on the engine.
There are several ways to terminate the drain lines. The drain lines must dump the fluids overboard and not inside the engine compartment. The following is one method for terminating the lines.

Drain Lines
1/4" O.D. Aluminum tubing potted into the phenolic with epoxy/flox.

Nose Gear Door Rail

Drain Line Exits
Fig. 26-G:7

Drain Lines
Cut the tubes at an angle.
Drill holes in the lower cowl ing for the drain tubes.

1/4" O.D. Aluminum tubing potted into the phenolic with epoxy/flox.
H. Oil Systems

The oil system addresses several areas and gauge line installations. An air/oil separator is not required on the IO-550 engines. There are no ports provided for returning oil to the engine.

Oil System Components:

- **Oil Cooler**
- **Oil Filter**
- **Oil Pressure Transducer** mounted on Firewall.
- **Oil Pressure Sensor**

**Oil Temperature Sensor**

The oil temperature pickup is located at the bottom of the oil cooler. Refer to the above figure. It is designed to accept a common brass type screw in thermocouple.

**Oil Pressure Sensor**

The oil pressure transducer is normally secured to the firewall using a MS21919-DG16 clamp. The clamp is usually supplied with the transducer. Install using the fittings shown.

**NOTE:** There are two ports, 1/4” pipe and 3/8” pipe. Either one can be used for oil pressure. The 3/8” is on the left side, with the 1/4” just to the right of it.

**Engine Oil Systems**

![Diagram of Engine Oil Systems](ContinentalInstallation.png)
The primary purpose of the oil breather line is to vent the crank case to ambient pressure. Fumes will escape through the breather line and any oil particles will burn off on the engine exhaust. Note that negative-G maneuvers may cause large amount of oil to expel through the breather line.

Install anti-chafe material P/N 165-0000 where the breather line runs through the baffling.

Secure the oil breather line with a 145-0003 Clamp.

Secure the exit to the firewall such that any oil discharged through the breather line drips on to exhaust and is burnt off.
I. Vacuum System Installation (Optional)

This section illustrates a vacuum system consisting of an artificial horizon and a directional gyro. We offer a kit for this configuration. The contents are listed below. Note that the angled fittings in and out of the vacuum pump are not standard AN fittings. 90° AN fittings may cause approximately a 0.5 psi drop per fitting installed. The part number for this kit is LESF-VC-550.

<table>
<thead>
<tr>
<th>Qty</th>
<th>Part no.</th>
<th>Description</th>
</tr>
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<tbody>
<tr>
<td>1</td>
<td>212CW</td>
<td>Airborne Dry Air Pump</td>
</tr>
<tr>
<td>12</td>
<td>H3-12</td>
<td>Vacuum Pump Regulator</td>
</tr>
<tr>
<td>1</td>
<td>1J7-1</td>
<td>Vacuum Pump Filter</td>
</tr>
<tr>
<td>10</td>
<td>145-00015221C46</td>
<td>Hose Clamps</td>
</tr>
<tr>
<td>2</td>
<td>145-00035418C14</td>
<td>Hose Clamps</td>
</tr>
<tr>
<td>1</td>
<td>1K1-6-10</td>
<td>Airborne 90° Fitting</td>
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<tr>
<td>1</td>
<td>1K8-6-10</td>
<td>Airborne 135° Fitting</td>
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<tr>
<td>4</td>
<td>AN840-4D</td>
<td>Fitting, Straight</td>
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<tr>
<td>2</td>
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<td>Fitting, Straight</td>
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<tr>
<td>2 ft</td>
<td>193-10</td>
<td>5/8” I.D. Vacuum Stratoflex Hose</td>
</tr>
<tr>
<td>7 ft</td>
<td>193-6</td>
<td>3/8” I.D. Vacuum Stratoflex Hose</td>
</tr>
<tr>
<td>3 ft</td>
<td>193-4</td>
<td>1/4” I.D. Vacuum Stratoflex Hose</td>
</tr>
</tbody>
</table>

Vacuum System Installation

Fig. 26:I:1