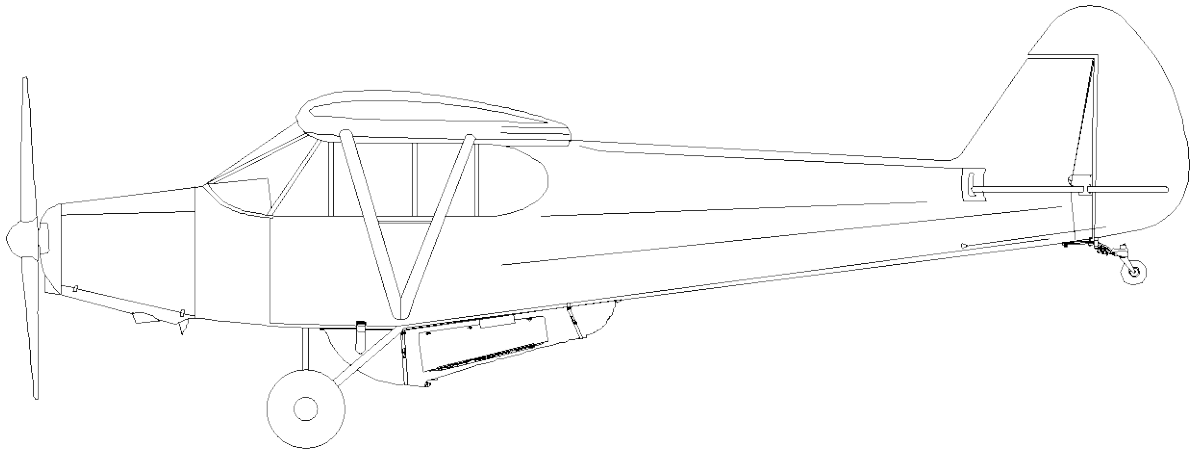


INSTALLATION, MAINTENANCE
AND
INSTRUCTIONS FOR CONTINUED AIRWORTHINESS (ICA)
for
Airglas, Inc. ® LC18 SERIES CARGO POD and LTC18 SERIES FUEL/CARGO POD

Document No: LC18/LTC18-105
Date: 10 February 2012
Revision: C

AIRWORTHINESS LIMITATIONS

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

No additional airworthiness limitations apply.

LOG OF REVISIONS

REV	Pages Affected	Description	FAA Approved	Date
Original	1 - 19	Initial Release		4 May 2011
A	2, 3, 5-25	Revised Airworthiness Limitation Section, Placards and Markings Section, Installation Instructions, Weight and Balance Section		20 June 2011
B	1, 4-13, 15-17, 21, 22	Added PA-12 and PA-14 Revised cargo capacity		29 July 2011
C	6, 10, 11, 17, 20, 21	Changed PA-12 and PA-14 to right hand Tank, added Vne placard to LTC		10 February 2012

Distribution of Changes

A current copy of this manual will be available on the ***Airglas, Inc.*** ® *Web-site available for download.*

Table of Contents

SECTION	DESCRIPTION	PAGE	REVISION
	Cover Page	1	-
	Log of Revisions	2	-
	Table of Contents	3	-
1.0	Specifications	4	-
2.0	Placards and Markings	5-7	-
3.0	Airplane Installation Eligibility	7-8	-
4.0	Required Equipment	8	-
5.0	Initial Pod Installation	8-15	-
6.0	Pod Removal	15-16	-
7.0	Pod Re-installation	16	-
8.0	Mechanical Systems Schematic	17	-
8.1	Pump Mounting Plate Drawing	18	
9.0	Wiring Schematic	19	-
10.0	Functional Test and Leak check	20-21	-
11.0	Trouble Shooting Procedure	21	-
12.0	Weight and Balance	22	-
13.0	Scheduled Inspection	23-24	-
14.0	Seaplane Installation Photos	25-26	-

1.0 *Airglas, Inc.* ® MODEL LTC18 and LTC18WB FUEL/CARGO POD SPECIFICATIONS

The ***Airglas, Inc.*** ® MODEL LTC18 FUEL/CARGO POD is the first pod developed for the Piper PA-18 "150" airplane to incorporate an auxiliary fuel tank and a cargo compartment in one complete unit. The auxiliary fuel tank, which occupies the forward portion of the pod, has a capacity of 18 U.S. gallons. The cargo compartment can carry up to 57 lbs. (55 lbs. for Wide Body Kit LTC18WB, 51 lbs. for LTC18-1214) of baggage or cargo with full pod fuel. Up to 165 lbs. (163 lbs. for Wide Body Kit LTC18WB, 159 lbs. for LTC18-1214) of combined fuel and cargo may be carried.

The complete fuel/cargo pod installation kit is constructed from a variety of composite materials and metal elements.

The pod has two doors to access the interior. One door is on the right side and one is at the rear. The interior of the cargo compartment has a coating that is chip resistant, and the compartment is designed for easy cleanup. Two drain holes have been provided for ease of cleaning. The cargo area is therefore ideal for carrying fish, meat, or any other cargo that may be undesirable to carry within the aircraft itself. The cargo area is intended to carry general baggage or cargo in addition to items carried in the load-carrying spaces of the fuselage but, sharp, pointed, or heavy metal objects should not be put in the cargo area of the pod**.** The cargo pod is not designed to resist the effects of detonating explosives, bullets discharged from loaded firearms, or other high-energy impacts. Exercise extreme caution when selecting items to be carried in the cargo compartment.

SHARP, POINTED, OR HEAVY METAL OBJECTS SHOULD NOT BE PUT IN THE CARGO AREA OF THE POD.

1.1 *Airglas, Inc.* ® MODEL LC18 and LC18H CARGO POD SPECIFICATIONS

The cargo pod can carry up to 174 lbs. (169 lbs. for LC18-1214 and LC18H) of baggage or cargo. The cargo pod is constructed of composite materials. Attachment is accomplished by means of two straps that cradle the pod and attach to the rear landing gear bolts, and clamp to the longerons. The pod has two doors to access the interior. One door is on the right side and one is at the rear. The interior of the cargo compartment has a coating that is chip resistant, and the compartment is designed for easy cleanup. A drain hole has been provided at the sump of the cargo compartment. The cargo pod is therefore ideal for carrying fish, meat, or any other cargo from which liquids may drain or which may require that the compartment to be cleaned after they have been removed.

The cargo area is intended to carry general baggage or cargo in addition to items carried in the load-carrying spaces of the fuselage but, sharp, pointed, or heavy metal objects should not be put in the cargo area of the pod**.** The cargo pod is not designed to resist the effects of detonating explosives, bullets discharged from loaded firearms, or other high-energy impacts. Exercise extreme caution when selecting items to be carried in the cargo compartment.

2.0 Placards and Markings LTC18

Placards and Markings (PA-18, PA-12, PA-14, CC18-180):

Placards : The following placards are added:

57 lbs. Max. Baggage with full pod fuel. Total combined pod fuel and baggage must not exceed 165 lbs.

Located on the side door of the Fuel/Cargo Pod. (LTC18)

57 lbs. Max. Baggage with full pod fuel. Total combined pod fuel and baggage must not exceed 165 lbs. -WARNING- FLIGHT NOT PERMITTED WITH DOOR OPEN

Located on the aft door of the Fuel/Cargo Pod. (LTC18)

55 lbs. Max. Baggage with full pod fuel. Total combined pod fuel and baggage must not exceed 163 lbs.

Located on the side door of the Fuel/Cargo Pod. (LTC18WB)

55 lbs. Max. Baggage with full pod fuel. Total combined pod fuel and baggage must not exceed 163 lbs. -WARNING- FLIGHT NOT PERMITTED WITH DOOR OPEN

Located on the aft door of the Fuel/Cargo Pod. (LTC18WB)

51 lbs. Max. Baggage with full pod fuel. Total combined pod fuel and baggage must not exceed 159 lbs.

Located on the side door of the Fuel/Cargo Pod. (LTC18-1214)

51 lbs. Max. Baggage with full pod fuel. Total combined pod fuel and baggage must not exceed 159 lbs. -WARNING- FLIGHT NOT PERMITTED WITH DOOR OPEN

Located on the aft door of the Fuel/Cargo Pod. (LTC18-1214)

80/87 Octane Minimum Aviation Gasoline (18 gallons capacity)

Located adjacent to the filler spout of the Fuel/Cargo Pod.

AUX FUEL TRANSFER ON

Adjacent to Auxiliary Fuel Annunciator Light

2.0 Placards and Markings LTC18-Continued

Placards and Markings (PA-18, PA-12, PA-14, CC18-180)-Continued:

ON OFF

AUX FUEL (17.5 gallons useable)

Adjacent to Auxiliary Fuel Switch

ONLY NORMAL CATEGORY OPERATIONS APPROVED
WITH AIRGLAS POD INSTALLED
SPINS ARE PROHIBITED

Located on instrument panel in full view of the pilot.

DO NOT EXCEED **138 MPH IAS**
WITH AIRGLAS POD INSTALLED

Place Airspeed Limitation Placard on instrument panel adjacent to airspeed indicator.

Instrument Markings: The airspeed indicator is marked as follows:
The yellow arc extends from 110 MPH to 138 MPH.
The red radial line is located at 138 MPH.
The upper part of the green arc is located at 110 MPH.

2.1 Placards and Markings LC18

Placards and Markings (PA-18 Series, PA-12, PA-14, CC18-180 Series, S-18-180, A-1 Series):

PLACARDS:

The following information must be displayed in the form of composite or individual placards in addition to those specified in the basic handbook.

DO NOT EXCEED **138 MPH IAS**
WITH AIRGLAS POD INSTALLED

Place Airspeed Limitation Placard on instrument panel adjacent to airspeed indicator.

174 LBS. MAXIMUM BAGGAGE

Place pod baggage Limitation Placard on inner side of pod baggage side door. (LC18)

174 LBS. MAXIMUM BAGGAGE
-WARNING-
FLIGHT NOT PERMITTED WITH DOOR OPEN

Located on the aft door of the Pod. (LC18)

2.1 Placards and Markings LC18-Continued

Placards and Markings (PA-18 Series, PA-12, PA-14, CC18-180 Series, S-18-180, A-1 Series)-Continued:

169 LBS. MAXIMUM BAGGAGE

Place pod baggage Limitation Placard on inner side of pod baggage side door. (LC18-1214 and LC18H)

169 LBS. MAXIMUM BAGGAGE -WARNING- FLIGHT NOT PERMITTED WITH DOOR OPEN

Located on the aft door of the Pod. (LC18-1214 and LC18H)

ONLY NORMAL CATEGORY OPERATIONS APPROVED WITH AIRGLAS POD INSTALLED SPINS ARE PROHIBITED.

Place Operations Placard on instrument panel **in full view of pilot.**

Instrument Markings: The airspeed indicator is marked as follows:
The yellow arc extends from 110 MPH to 138 MPH.
The red radial line is located at 138 MPH.
The upper part of the green arc is located at 110 MPH.

3.0 Airplane Installation Eligibility LTC18, LTC18-1214, and LTC18WB

The ***Airglas, Inc.*** ® Model LTC18 fuel/cargo pod may be installed on any Piper Model PA-18 "150", FS2003 PA-12, FS 2002 PA-14, or Cub Crafters CC18-180 or CC18-180A airplane that:

1. Is; equipped with sight gauge type fuel quantity indicators.

2. Is; equipped with a 12-volt electrical system.

3. Does not; incorporate any other modifications that are incompatible with the Fuel/Cargo Pod installation.

The ***Airglas, Inc.*** ® Model LTC18WB is intended for installation on the PA-18 with 150 HP or higher that incorporates the STC# SA02187AK, and meets items 1 through 3 above.
The ***Airglas, Inc.*** ® Model LTC18-1214 is intended for installation on the FS2003 (Piper) PA-12(S) and FS 2002 (Piper) PA-14 aircraft that meet items 1 through 3 above.
(See LTC18, LTC18WB, and LTC18-1214 Installation Drawings respectively)

3.1 Airplane Installation Eligibility LC18, LC18-1214, LC18-1214, and LC18H

The ***Airglas, Inc.*** ® Model LC18 cargo pod was developed for; PIPER: PA-18 "150", PA-18A "150", PA-18S "150", PA-18AS "150". Cub Crafters: CC18-180, CC18-180A. Super 18 LLC: S-18-180(See LC18 Installation Drawing)

The ***Airglas, Inc.*** ® Model LC18H CARGO POD was developed for; Sky International Inc.: A-1, A-1A, A-1B, A-1C-180, A-1C-200
(See LC18H Installation Drawing specific to that application)

The ***Airglas, Inc.*** ® Model LC18-1214 is intended for installation on the FS2003 (Piper) PA-12(S) and FS 2002 (Piper) PA-14. (See LC18-1214 Installation Drawing)

4.0 REQUIRED EQUIPMENT

No special tools or equipment are needed to remove or install the ***Airglas, Inc.*** ® model LTC18 Series FUEL/CARGO POD or LC18 Series CARGO POD. Only standard shop tools for working with aircraft sheet metal, fabric, fuel line tubing and fittings (LTC only), electrical wiring and terminals (LTC only) are required. It is helpful to have two persons to locate the pod while attaching it to the aircraft.

5.0 Initial LTC18 Pod Installation (Landplane)

STEPS	INSTRUCTIONS
1	Remove the landing gear step assembly if it is present, in accordance with Drawing LTC18 Fuel/Cargo Pod Installation. If there is fabric present on the main landing gear "v" assemblies, you may wish to remove it, or install grommets to permit filler neck penetration through the fabric. Remove the rear seat cushions.
2	Install the two (2) P/N LTC18-8 clamps in accordance with Drawing No. LTC18, LTC18WB, or LTC18-1214.
3	Install the two (2) P/N LTC18-5 strap assemblies in accordance with Drawing No. LTC18, LTC18WB, or LTC18-1214.
4	Install the two (2) P/N LTC18-6 strap assemblies in accordance with Drawing No. LTC18, LTC18WB, or LTC18-1214.

5.0 Initial LTC18 Pod Installation(Landplane)-Continued

5	Lift the fuel/cargo pod into place and attach the P/N LTC18-3 (LTC18WB-3 or LTC18-1214-3) and P/N LTC18-4 (LTC18WB-4 or LTC18-1214-4) strap assemblies loosely, using the attaching hardware specified in Drawing No. LTC18, LTC18WB, or LTC18-1214. Mark the location where the auxiliary fuel transfer line fitting will penetrate the fabric. Alternately you may measure 32.5" (35.25" LTC18-1214)aft of the main landing gear centerline and 8.0" left of fuselage centerline. This establishes the approximate location where the auxiliary belly tank fuel transfer line fitting penetrates the bottom of the fuselage. Mark the fuselage bottom fabric (or metal belly panel, if your airplane has metal belly panels installed) at this point.
6	If your airplane has a fabric-covered fuselage bottom, cut a 1/4" hole in the fuselage bottom fabric with a sharp knife at the point marked in Step 5. Install an inspection plate ring whose inner diameter is sufficient to clear the fuel transfer line fitting, on the fabric concentric with the 1/4" hole, and allow it to dry. If your airplane has metal belly panels, drill a 1/4" hole in the belly at the point marked in Step 5.
7	Lift the fuel/cargo pod into place and attach the P/N LTC18-3 (LTC18WB-3 or LTC18-1214-3) and P/N LTC18-4 (LTC18WB-4 or LTC18-1214-4) strap assemblies loosely, using the attaching hardware specified in Drawing No. LTC18, LTC18WB, or LTC18-1214.
8	Adjust the fuel/cargo pod to obtain a proper fit against the bottom of the fuselage and to center the fuel/cargo pod auxiliary fuel transfer line fitting at the center of the hole in the bottom fabric or metal belly panel. Enlarge the hole in the fuselage bottom fabric or metal belly panel to accept the auxiliary fuel/cargo pod fuel transfer line fitting. If your airplane has metal belly panels, you may find it necessary to remove the fuel/cargo pod from the airplane in order to enlarge the hole. In that case; repeat Step 7. along with the centering adjustment of this step after the hole has been enlarged.
9	Tighten the strap attaching hardware to the torque values specified on Drawing No. LTC18 (LTC18WB or LTC18-1214). (CAUTION: DO NOT OVER TIGHTEN)

5.0 Initial LTC18 Fuel Transfer Pump, Check Valve, and Tubing Installation

STEPS	INSTRUCTIONS
1	Turn the airplane's fuel selector valve to the OFF position. Drain all fuel from the left wing tank (PA-18 P/N 10849-32, others similar), making certain that the airplane and the container into which the fuel is drained are grounded during the entire de-fueling operation. Disconnect all fuel and vent hoses from their fittings on the left wing tank. Remove the fuel quantity indicating sight gauge from the left wing tank. Remove the left wing tank from the airplane. Purge the tank of all inflammable vapors in accordance with AC 43.13-1A, Chapter 14, Section 2, Paragraph 710. **Note: For PA-12 and PA-14 aircraft install fitting in right hand tank.**
2	**For Aluminum Fuel Tanks:** Have a qualified person weld the P/N LTC18-7-1 Wing Tank Fitting into the left wing tank in accordance with Drawing No. LTC18-7 Wing Tank Fitting Installation. **Note: For PA-12 and PA-14 aircraft install fitting in right hand tank.**
2(a)	**For Steel Fuel Tanks:** Have a qualified person solder a P/N AN912-4 fitting into the left wing tank in accordance with Drawing No. LTC18-1214-7 Wing Tank Fitting Installation. **Note: For PA-12 and PA-14 aircraft install fitting in right hand tank.**
3	Re-install the left wing tank in the airplane. Re-install the sight gauge and reconnect the fuel and vent hoses to their fittings on the tank. **Note: For PA-12 and PA-14 aircraft install fitting in right hand tank.**
4	Manufacture the P/N LTC18-15 Mounting Plate for auxiliary fuel transfer pump in accordance with Drawing No. LTC18-15.
5	Attach the auxiliary fuel transfer pump (Facet P/N 40131E) to the pump mounting plate in accordance with Drawing LTC18-6 Mechanical System Schematic. Again refer to Drawing LTC18-6 and note the orientation the pump will have when it is installed in the airplane.
6	Again refer to Drawing LTC18-6 Mechanical System Schematic and orient the pump as it will appear when installed in the airplane. Install an AN822-6-2D elbow in the (IN Port) of the auxiliary fuel transfer pump, with the open end of the elbow directed so it will face downward when the pump is installed. Install another AN822-6-2D elbow in the (OUT Port) of the auxiliary fuel transfer pump, with the open end of the elbow directed so it will face the left side of the fuselage when the pump is installed.

5.0 Initial LTC18 Fuel Transfer Pump, Check Valve, and Tubing Installation –Continued

7	Loosely attach mounting plate for the auxiliary fuel transfer pump to the forward cross tube of the rear seat, using two AN742-16 (or equivalent) plain clamps as shown on Drawing LTC18-6 Mechanical System Schematic. Note that, when the clamps and the plate are installed correctly, the plate will be on the aft side of the seat cross tube and the pump will be on the aft side of the plate. Adjust the lateral position of the pump mounting plate so that it can be attached to the aft side of the fuselage bottom frame diagonal tube assembly (PA-18 P/N 10569 others similar) using a single MS21919F16 cushioned clamp as shown on Drawing LTC18-6 Mechanical System Schematic. When the clamps and the pump mounting plate are properly positioned so that the plate is vertical and just on the aft sides of the tubes, torque the clamp attaching bolts to 20-25 inch-pounds maximum.
8	Using Drawing LTC18-6 Mechanical System Schematic as a schematic reference only, install an appropriate length of 0.375" O.D. aluminum fuel line tubing to connect the auxiliary belly tank fuel transfer line fitting to the elbow on the inlet (IN port) of the auxiliary fuel transfer pump.
9	Remove a sufficient number of the interior panels from the left side of the airplane's cabin to allow routing of the auxiliary fuel transfer tubing. Install an AN822-6-6D elbow in the P/N LTC18-7-1 Wing Tank Fitting (aluminum tanks) AN912-4 (steel tanks) in the left wing tank, with the open end of the elbow facing aft.
10	Using Drawing LTC18-6 Mechanical System Schematic as a **schematic reference only,** route an appropriate length of 0.375" O.D. aluminum fuel line tubing from the elbow on the outlet (OUT Port) of the auxiliary fuel transfer pump to the inlet of the check valve, and another appropriate length of 0.375" O.D. aluminum fuel line tubing from the outlet of the check valve to the left side of the fuselage, up the left side of the fuselage, across the frame of the left side window, and forward to connect to the elbow on the P/N LTC18-7-1 Wing Tank Fitting in the left tank. **Note: For PA-12 and PA-14 aircraft install fitting in right hand tank.** **CAUTION: Be certain that the arrow on the check valve body is pointing AWAY from the auxiliary fuel transfer pump and TOWARD the direction of flow to the tank.** The installation of the auxiliary fuel transfer line must be accomplished in accordance with AC 43.13-1A, Chapter 14, Section 2, Paragraph 709, or later revision, making sure that the length of tubing that crosses the frame of the left side window must not span a distance greater than 16 inches between supporting clamps.

5.0 Initial LTC18 Electrical Equipment Installation

STEPS	INSTRUCTIONS
1	The wiring harness must be fabricated and supplied by the installer. Sharp bends in the wires must be avoided and wiring harness must not be routed close to control cables. The wiring harness **SHALL NOT** be secured to fuel lines under any circumstances. The installation of electrical equipment and wiring required for the auxiliary fuel transfer pump must be accomplished in accordance with Drawing No., LTC18-8, LTC18-9, LTC18-10 and LTC18-11. Details of the installation not specified on those drawings must be accomplished in accordance with AC 43.13-1A, Chapter 11, Sections 2, 3, 4, 5, and 7 or later revision.
2	Install the circuit breaker IAW Drawing LTC18-9 Circuit Breaker Installation. Label the circuit breaker using lettering that will provide high contrast at all light levels.
3	Install the auxiliary fuel transfer pump switch and annunciator light in accordance with Drawing No. LTC18-8 Switch Installation. Label the switch and annunciator light using lettering that will provide high contrast at all light levels.
4	Fabricate and install the interconnecting wiring harness IAW Drawing LTC18-10 Wiring Schematic. Route the wires to follow existing wire bundles in the airplane, in accordance with Drawing LTC18-11 Wire Routing.
5	Perform Functional Test and Leak Check in accordance with section 10.0. File FAA form 337. Insert FAA Approved Flight Manual Supplement in Airplane Flight Manual. Apply all placards and instrument markings in accordance with FAA Approved Flight Manual Supplement. Revise aircraft weight and balance and equipment list.

5.1 Initial LC18, LC18H, and LC18-1214 Pod Installation(Landplane)

STEPS	INSTRUCTIONS
1	Remove the landing gear step assembly if it is present, in accordance with Drawing No. LC18, LC18H, or LC18-1214 Cargo Pod Installation as appropriate.
2	Install the two (2) P/N LTC18-8 clamps in accordance with Drawing No. LC18, LC18H, or LC18-1214.
3	Install the two (2) P/N LTC18-5 strap assemblies in accordance with Drawing No. LC18, LC18H, or LC18-1214.
4	Install the two (2) P/N LTC18-6 strap assemblies in accordance with Drawing No. LC18, LC18H, or LC18-1214.

5.1 Initial LC18, LC18H, and LC18-1214 Pod Installation(Landplane)-Continued

5	Lift the cargo pod into place and attach the P/N LTC18-3 (LTC18WB-3 or LTC18-1214-3) and P/N LTC18-4 (LTC18WB-4 or LTC18-1214-4) strap assemblies loosely, using the attaching hardware specified in Drawing No. LC18, LC18H, or LC18-1214.
6	Adjust the cargo pod to obtain a proper fit against the bottom of the fuselage.
7	Tighten the strap attaching hardware to the torque values specified on Drawing No. LC18, LC18H, or LC18-1214. (CAUTION: DO NOT OVER TIGHTEN)
8	File FAA form 337. Insert FAA Approved Flight Manual Supplement in Airplane Flight Manual. Apply all placards and instrument markings in accordance with FAA Approved Flight Manual Supplement. Revise aircraft weight and balance and equipment list.

Re-Marking of Airspeed Indicator

STEPS	INSTRUCTIONS
1	Re-mark the existing airspeed indicator so that: The upper part of the green arc is located at 110 mph. The yellow arc extends from 110 mph to 138 mph. The red radial line is located at 138 mph.
2	If the airspeed indicator must be re-marked, the original red radial line and certain portions of the original white, green and yellow arcs must be covered with black paint or another suitable marking medium.

NOTE: Markings may be placed on the cover glass of the airspeed indicator. If you choose this method, however, you must add an index mark or other means to maintain the correct alignment of the glass cover with the face of the dial if such means do not already exist. Each arc and line must also be wide enough and be located so as to be clearly visible to the pilot, and must allow for parallax so that it will indicate correctly when viewed by the pilot.

5.2 Pod Installation Seaplanes

STEPS	INSTRUCTIONS
1	The Airglas Model LTC18 and LC18 pods are furnished with four (4) pip marks molded into the cargo pod section to assist in locating the holes through which the aft float cross wires (also called tie rods) will pass when the cargo pod/belly tank is installed. Enlarge the holes to 3/4 inch in diameter before installing the cargo pod/belly tank on a floatplane. Note: Marks are located for EDO floats only, other manufacturers locations differ.
2	Disregard the portion of Pod Installation Instruction Step 1, that pertains to the main landing gear vee's of the landplane. Disconnect the two (2) aft float cross wire assemblies from their lower attachment fittings on the floats and from the aft float attachment fittings on the fuselage.
3	Accomplish Pod Installation Instruction Steps 2 through 10 of section 5.0 for the LTC18. Accomplish Pod Installation Instruction Steps 2 through 8 of section 5.1 for the LC18.
4	Pass the two (2) aft float cross wire assemblies through the 3/4 inch diameter holes in the cargo pod.
5	Reconnect the aft float cross wire assemblies to their lower attachment fittings on the floats and to the aft float attachment fittings on the fuselage. See Appendix A, pages A-1 and A-2, for photographs of the installation of the aft float cross wires.

Re-Marking of Airspeed Indicator (Seaplane)

STEPS	INSTRUCTIONS
1	If the airplane was originally manufactured as a Piper Model PA-18S "150" or Model PA-18AS "150", or it has been properly converted from a Model PA-18 "150" or Model PA-18A "150" to a floatplane, the markings on its airspeed indicator will be in accordance with Piper Aircraft Corporation Report No. 837, Airplane Flight Manual -- Piper Model PA-18AS "150" and PA-18S "150"(1760 Pounds Gross Weight), dated October 1, 1954. If the markings on the airspeed indicator are in accordance with Piper Report No. 837 the airspeed indicator need not be re-marked.

Re-Marking of Airspeed Indicator (Seaplane)-Continued

2	Other aircraft: Re-mark the existing airspeed indicator so that: The upper part of the green arc is located at 110 mph. The yellow arc extends from 110 mph to 138 mph. The red radial line is located at 138 mph.
3	If the airspeed indicator must be re-marked, the original red radial line and certain portions of the original white, green and yellow arcs must be covered with black paint or another suitable marking medium.

NOTE: Markings may be placed on the cover glass of the airspeed indicator. If you choose this method, however, you must add an index mark or other means to maintain the correct alignment of the glass cover with the face of the dial if such means do not already exist. Each arc and line must also be wide enough and be located so as to be clearly visible to the pilot, and must allow for parallax so that it will indicate correctly when viewed by the pilot.

6.0 Pod Removal

STEPS	INSTRUCTIONS
1	Remove the rear seat cushions to gain access to the fuel line connecting the belly tank to the fuel pump. **(LTC only)**
2	Disconnect the fuel line from the pump and belly tank. (Although belly tank may be left full, draining the tank is preferable.) **(LTC only)**
3	Cap fittings and plug line ends with AN929-6D caps and AN806-6D plugs respectively. **(LTC only)**
4	Gently support the pod with padded floor jack, and loosen mounting straps. (Note: If the aircraft is on floats, loosen and remove the rear float landing wires prior to loosening the mounting straps. Reinstall the wires after the pod is removed.)
5	Remove mounting straps from one side, gently lower the pod, and remove pod from under the aircraft. After the pod is clear of aircraft, remove remaining straps.

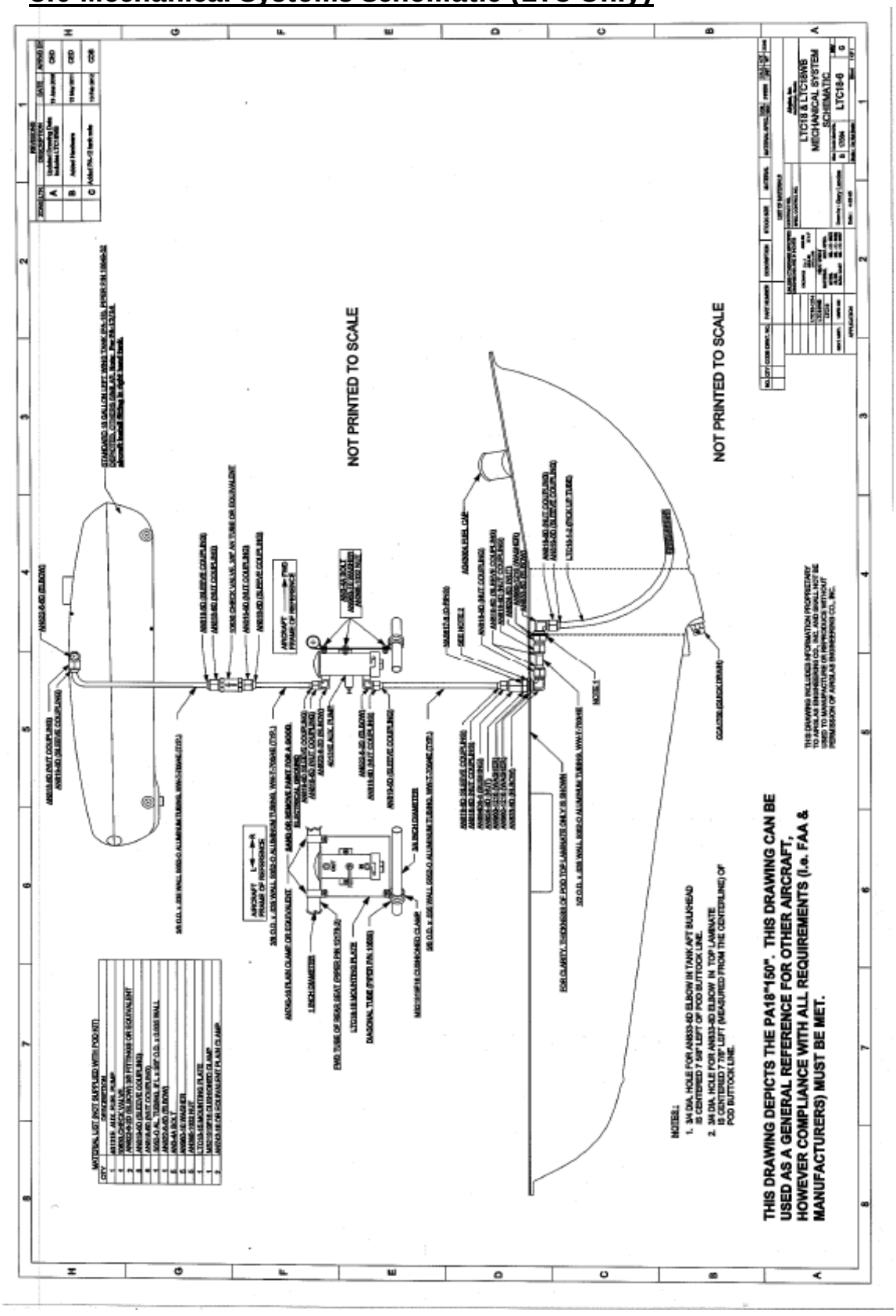
6.0 Pod Removal-Continued

6	If the aircraft is to be flown with pod removed: 1. Install inspection cover over fuel line hole in fuselage. **(LTC only)** 2. Reinstall rear seat cushions. **(LTC only)** 3. Reinstall the rear landing gear step assembly, if desired. 4. Pull, and secure pump circuit breaker. **(LTC only)** 5. Placard breaker, and fuel transfer switch "DISABLED". **(LTC only)** 6. Revise aircraft weight and balance and equipment list. 7. Make log book entry, describing work performed.

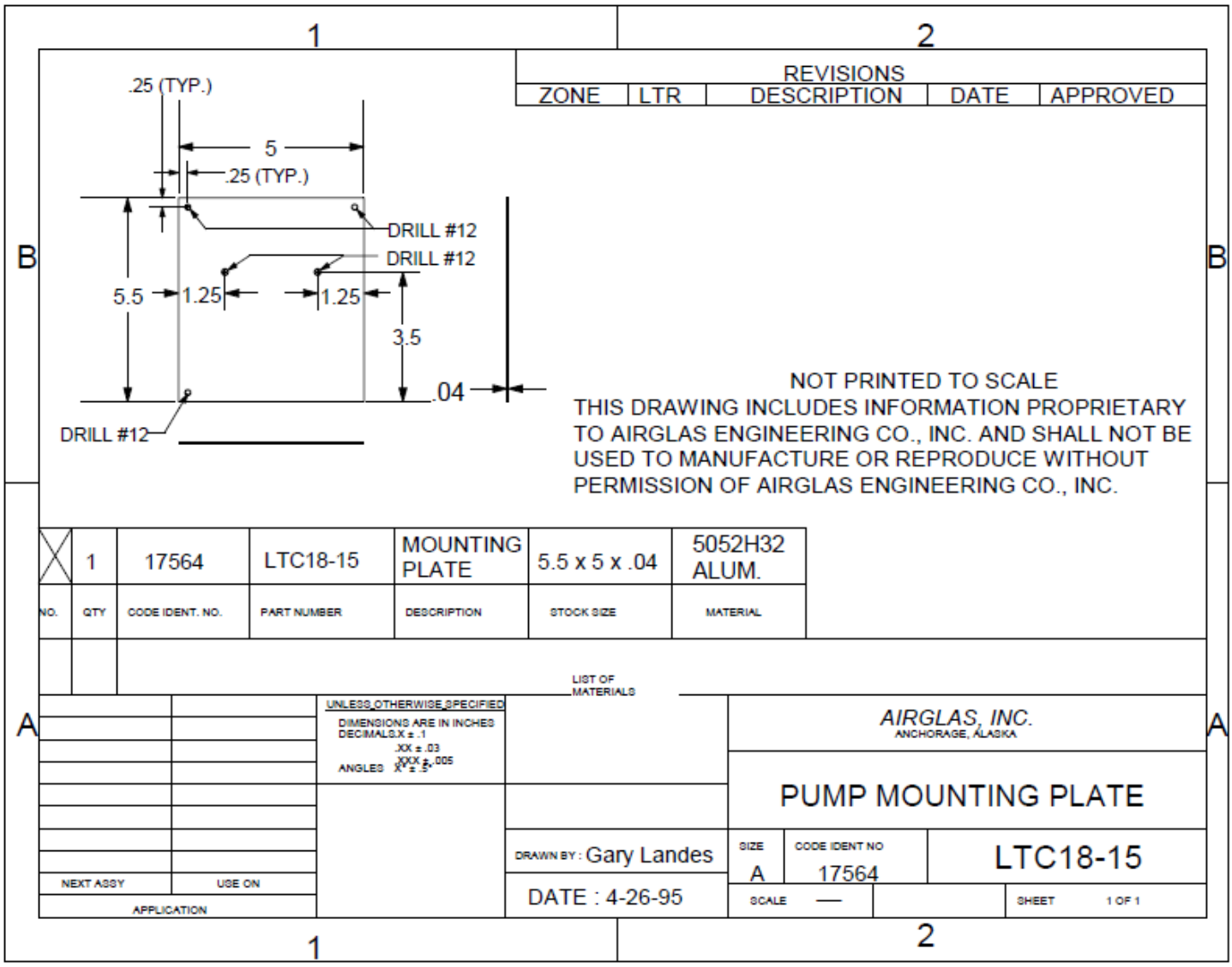
7.0 Pod Re-installation after Removal

STEPS	INSTRUCTIONS
1	Remove the landing gear step assembly if it is present, in accordance with the appropriate LTC18 or LC18 Pod Installation Drawing. Remove the rear seat cushions to gain access to the fuel line connecting the belly tank to the fuel pump **(LTC only)**.
2	Remove inspection cover over fuel line hole in fuselage. **(LTC only)**
3	Install the two (2) P/N LTC18-8 clamps in accordance with the appropriate LTC18 or LC18 Pod Installation Drawing.
4	Install the two (2) P/N LTC18-5 strap assemblies in accordance with the appropriate LTC18 or LC18 Pod Installation Drawing.
5	Install the two (2) P/N LTC18-6 strap assemblies in accordance with the appropriate LTC18 or LC18 Pod Installation Drawing.
4	Gently support cargo pod/belly tank with padded floor jack. Raise the cargo pod/belly tank into place, install the LTC18-3 (LTC18WB-3 or LTC18-1214-3) and P/N LTC18-4 (LTC18WB-4 or LTC18-1214-4) strap assemblies and tighten the mounting straps. (Note: If the aircraft is on floats, loosen and remove the rear float landing wires prior to installing the cargo pod/belly tank. Reinstall the rear float landing wires after tightening the mounting straps.)
5	Install the fuel line from the pump to the belly tank. **(LTC only)**
6	Reinstall rear seat cushions. **(LTC only)**
7	Enable pump circuit breaker. **(LTC only)**
8	Remove "Disabled" placards from breaker and fuel transfer switch. **(LTC only)**
9	Perform Functional Test and Leak Check in accordance with section 10.0. **(LTC Only)**
10	Revise aircraft weight and balance and equipment list. Make log book entry, describing work performed.

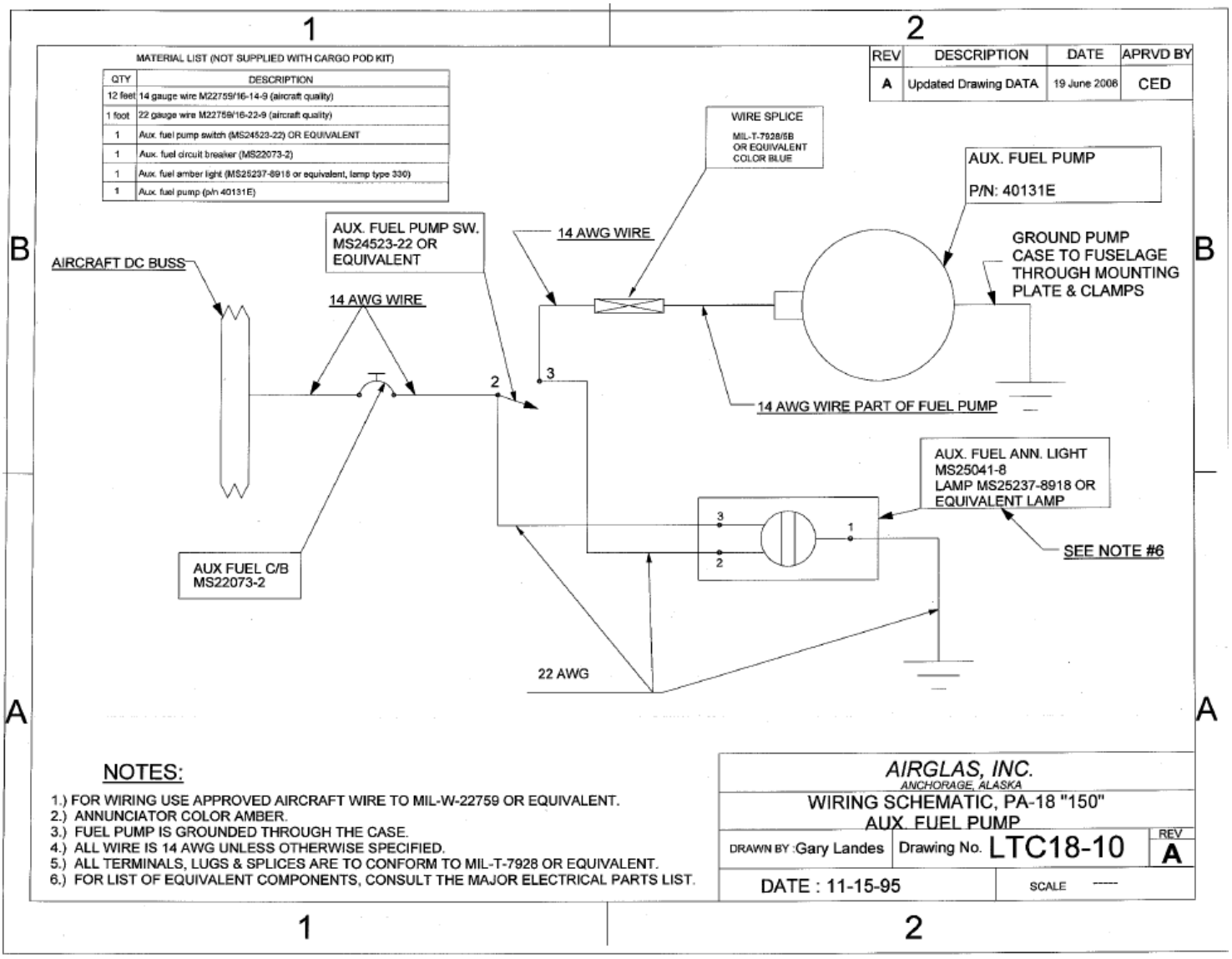
8.0 Mechanical Systems Schematic (LTC Only)



8.1 Pump Mounting Plate (LTC Only)



9.0 Wiring Schematic (LTC Only)



10.0 Functional Test and Leak Check(LTC Only)

STEPS	INSTRUCTIONS
1	Make certain that the quick-drain fittings of the left wing fuel tank and the auxiliary fuel/cargo pod are closed. Note: For PA-12 and PA-14 aircraft close fitting in right hand tank. Partially fill the auxiliary fuel/cargo pod with approximately 4 gallons of fuel, taking care to properly ground both the fueling container or nozzle and the filler neck of the fuel/cargo pod during the fueling operation.
2	Apply power to the airplane's electrical system by turning the master switch to the ON position. Press the lens on the "AUX. FUEL" annunciator light to test the lamp. The light should illuminate. If the light fails to illuminate, turn the master switch to the OFF position and replace the lamp with a new one or troubleshoot your installation. Turn the master switch to the ON position and repeat the lamp press-to-test operation. When you have verified that the annunciator light illuminates when tested, proceed to Step 3.
3	Turn the "AUX. FUEL" switch to the ON position. The annunciator light should again illuminate and fuel should begin to transfer to the left wing tank (Note: For PA-12 and PA-14 aircraft transfer to right hand tank.) at the rate of approximately 0.3 gallons per minute. Observe the airplane's ammeter. The auxiliary fuel transfer pump and its annunciator light should draw no more than 1.1 ampere. Leave the "AUX. FUEL" switch in the ON position for 6 minutes. Then turn it to the OFF position. Verify by examination of the wing tank sight gauge and, or if necessary, by examination of the interior of the left wing tank, that approximately 2 gallons of fuel have been transferred from the auxiliary fuel/cargo pod to the left wing tank . **CAUTION: Use only an explosion-proof lamp to illuminate the interior of the left wing tank for examination.** (Note: PA-12 and PA-14 aircraft transfer to right hand tank.) If substantially less than 2 gallons of fuel was transferred to the wing tank during the six-minute test, or if the operation of the transfer pump appeared to be deficient or abnormal in any way, proceed to Step 4. It is also recommended to contact ***Airglas, Inc.*** ® before proceeding further.
4	Check all auxiliary fuel transfer line connections to verify that they are free of leaks. If you discover any leaks, correct them before proceeding further.

10.0 Functional Test and Leak Check-Continued(LTC Only)

STEPS	INSTRUCTIONS
5	Fill the left wing tank with fuel to its full capacity, taking care to properly ground both the fueling container or nozzle and the airplane during the fueling operation. Check all the fuel line, vent line, and sight gauge connections to the fittings on the left wing tank to verify that they are free of leaks. If you discover any leaks, correct them before proceeding further and retest the system for leaks. **(Note: For PA-12 and PA-14 aircraft fill and check right hand tank.)**
6	Replace the cabin interior panels that were removed to install the auxiliary fuel transfer line. Replace the rear seat cushions if the airplane is to be operated with the rear seat occupied.

11.0 Trouble Shooting Procedure(LTC Only)

STEPS	Fault	Corrective Action
1	Pump fails to operate when switch is activated.	1. Confirm buss voltage is available to power pump. 2. Confirm ground path is continuous to battery. 3. Repair circuits as necessary. 4. If power and ground are available to pump, and pump does not activate, replace pump.
2	Pump activates, but fails to pump.	1. Confirm vent in tank cap is open. Repair as necessary. 2. Confirm there are no leaks in the fuel lines from the belly tank to the fuel tank.

12.0 Weight and Balance LTC18

The net weight change produced by the installation of the ***Airglas, Inc.*** ® MODEL LTC18 FUEL/CARGO POD kit is as follows:

Aircraft	Pod Model	Datum Location	Pod Installation Arm	Pod Installation Weight	Plumbing Installation Arm	Plumbing Installation Weight
Piper: PA-18 "150", PA-18A "150", PA-18S "150", PA-18AS "150"	LTC18	Wing Leading Edge	+34"	30.75 lbs. +/- 1 lbs.	+30.75"	3.1 lbs.
Piper: PA-18 "150", PA-18A "150", PA-18S "150", PA-18AS "150" Modified under STC SA02187AK "Wide Body"	LTC18WB	Wing Leading Edge	+34"	32.75 lbs. +/- 1 lbs.	+30.75"	3.1 lbs.
FS 2003: PA-12, PA-12S	LTC18-1214	Wing Leading Edge	+35.75"	37 lbs. +/- 1 lbs.	+30"	3.1 lbs.
FS 2002: PA-14	LTC18-1214	Wing Leading Edge	+35.75"	37 lbs. +/- 1 lbs.	+30"	3.1 lbs.
Cub Crafters: CC18-180, CC18-180A	LTC18	60" forward of Wing Leading Edge	+94"	30.75 lbs. +/- 1 lbs.	+90.75"	3.1 lbs.

12.1 Weight and Balance LC18

The net weight change produced by the installation of the ***Airglas, Inc.*** ® CARGO POD kit is as follows:

Aircraft	Pod Model	Datum Location	Pod Installation Arm	Pod Installation Weight
Piper: PA-18 "150", PA-18A "150", PA-18S "150", PA-18AS "150"	LC18	Wing Leading Edge	+38.5"	21.5 lbs. +/- 1 lbs.
FS 2003: PA-12, PA-12S	LC18-1214	Wing Leading Edge	+39.75	27 lbs. +/- 1 lbs.
FS 2002: PA-14	LC18-1214	Wing Leading Edge	+39.75	27 lbs. +/- 1 lbs.
Cub Crafters: CC18-180, CC18-180A	LC18	60" forward of Wing Leading Edge	+98.5"	21.5 lbs. +/- 1 lbs.
Super 18 LLC: S-18-180	LC18	Wing Leading Edge	+38.5"	21.5 lbs. +/- 1 lbs.
Sky International Inc.: A-1, A-1A, A-1B, A-1C-180, A-1C-200	LC18H	60" forward of Wing Leading Edge	+101.185"	27 lbs. +/- 1 lbs.

13.0 LTC18, LTC18WB and LTC18-1214 Inspection:

Interval	Description	Notes
Daily Preflight*	• Drain fuel sump and check for contamination of fuel. • Check fuller cap for integrity of gasket, and secure installation. • Visually inspect pod externally for fuel stains, and leaks. • Confirm pump turns on and annunciator light illuminates when switch is activated. • Check pod retention straps for damage and tension. • Check pod for damage. • Check pod doors for security. Flight with doors removed is prohibited.	Replace damaged or leaking components before flight.
100 hour or Annual Inspection	• Drain fuel sump and check for contamination of fuel. • Check fuller cap for integrity of gasket, and secure installation. • Visually inspect pod externally for fuel stains, and leaks. • Confirm pump turns on and annunciator light illuminates when switch is activated. • Check pod retaining straps for wear, corrosion or cracking. • Verify pump mounting security. • Verify wire connections are secure. • Verify all wire runs are not chafed or show signs of heat erosion. • Verify all fuel lines and are not chafed or show signs of corrosion. • Clean fuel filter in pump. • Check pod retention straps for damage and tension. • Check pod for damage. Check pod doors for security. Flight with doors removed is prohibited. • Verify fuel quantity markings, placards, and airspeed range marks are in accordance with AFMS.	Repair or replace damaged or leaking components before flight.

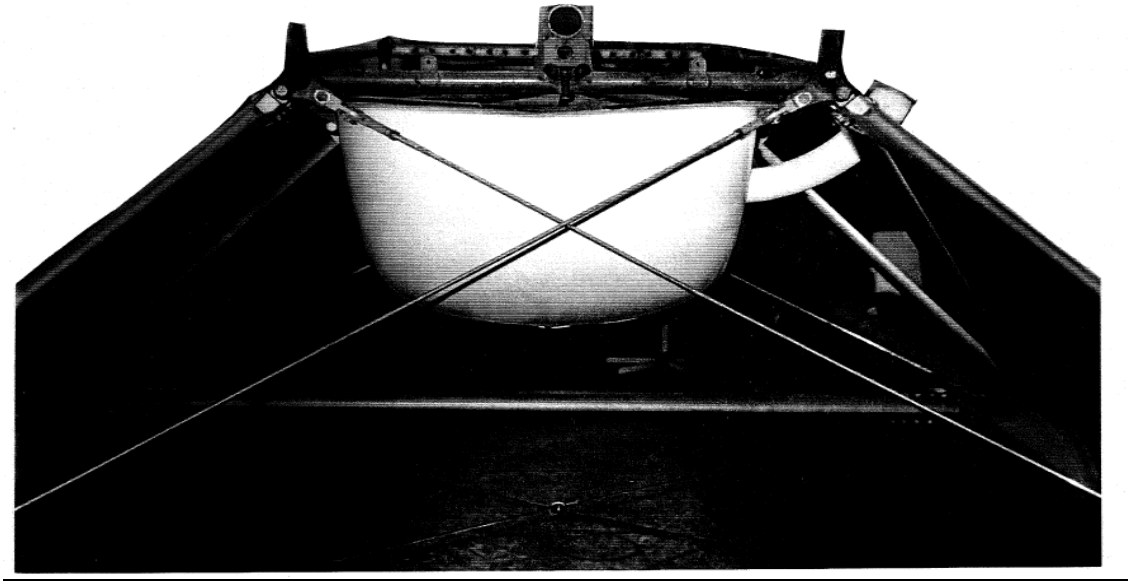
* Preventative maintenance, as defined in 14CFR43 Appendix A Section (c), may be performed by an appropriately rated pilot.

13.1 LC18, LC18H, and LC18-1214 Inspection:

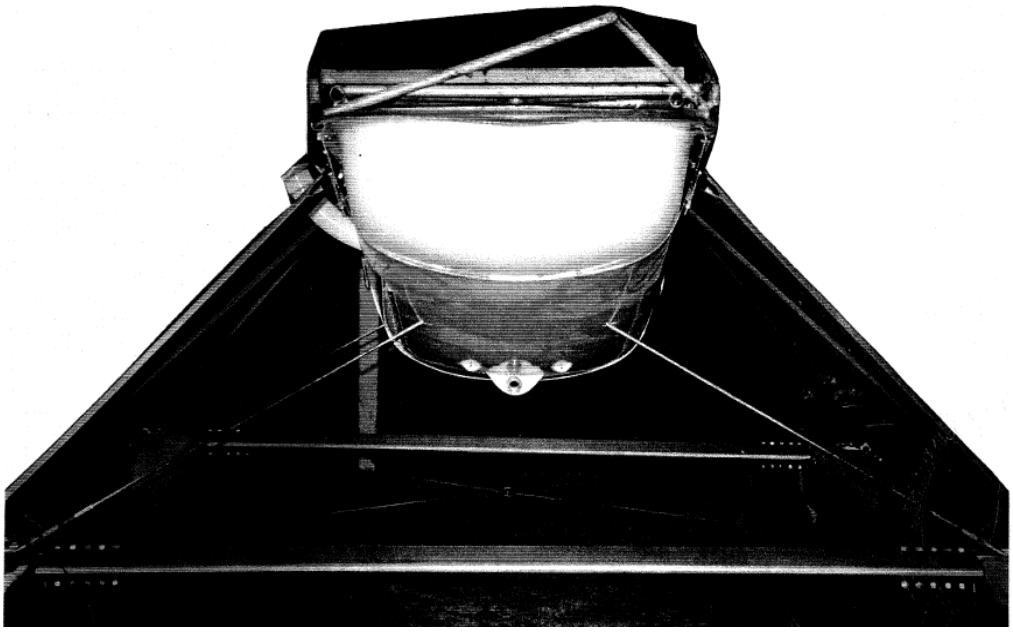
Interval	Description	Notes
Daily Preflight*	• Check pod retention straps for damage and tension. • Check pod for damage. • Check pod doors for security. Flight with doors removed is prohibited.	Replace damaged components before flight.
100 hour or Annual Inspection	• Check pod retention straps for damage and tension. • Check pod for damage. Check pod doors for security. Flight with doors removed is prohibited. • Verify placards, and airspeed range marks are in accordance with AFMS.	Repair or replace damaged or leaking components before flight.

* Preventative maintenance, as defined in 14CFR43 Appendix A Section (c), may be performed by an appropriately rated pilot.

14.0 Seaplane Installation Photos:

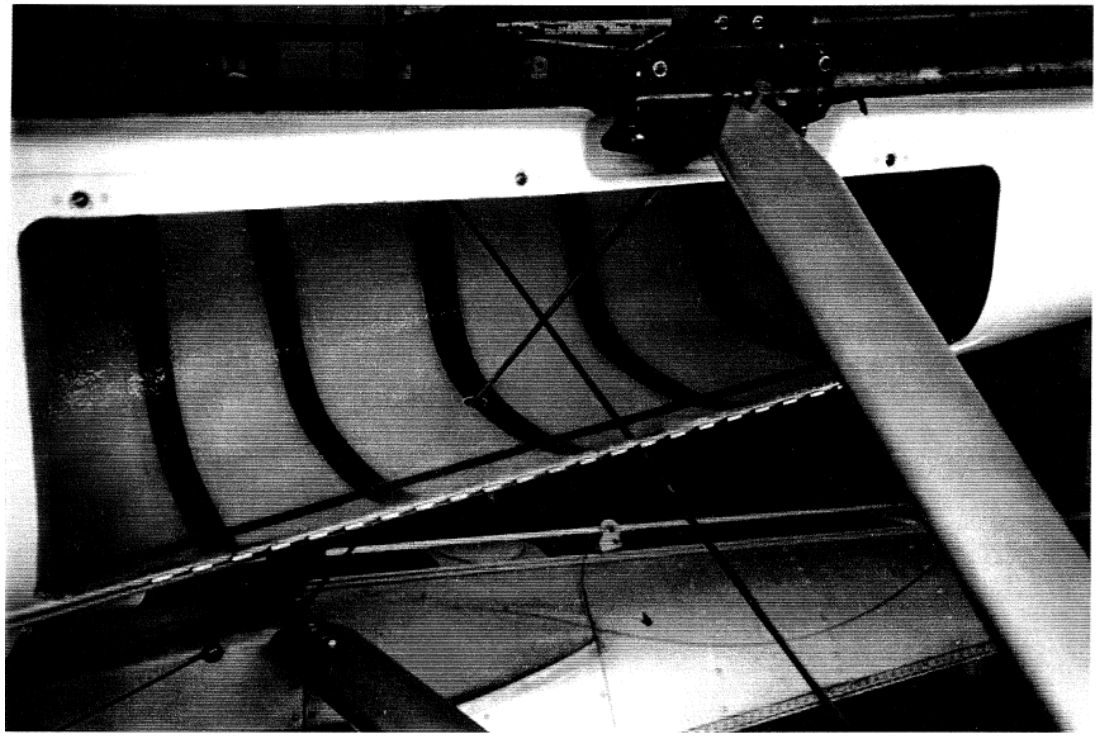


LTC18 Fuel/Cargo pod installed, view looking aft (LC18 similar).

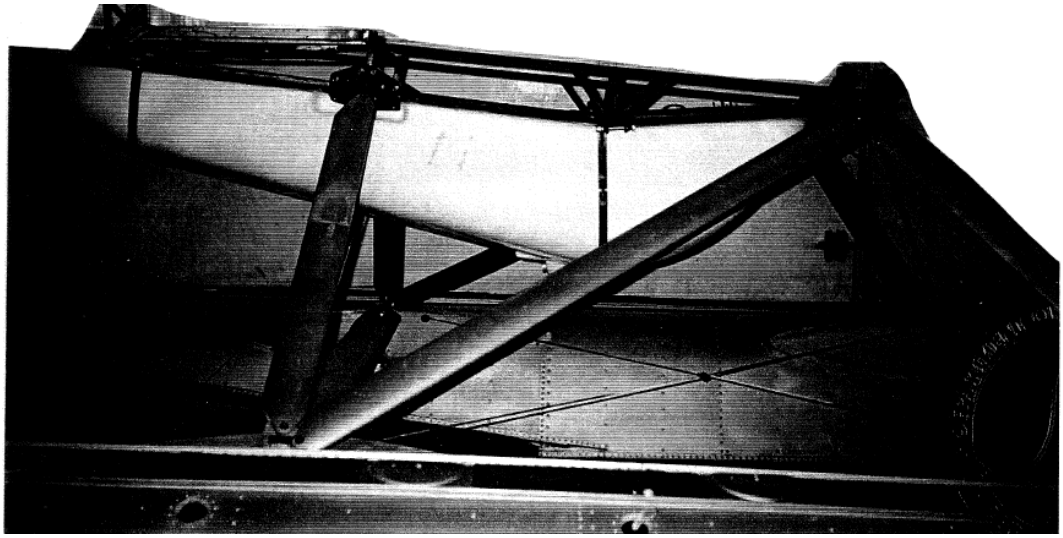


LTC18 Fuel/Cargo pod installed, view looking aft (LC18 similar).

14.0 Seaplane Installation Photos-Continued:



LTC18 Fuel/Cargo pod installed, view looking thru cargo access door (LC18 similar). Current production doors are on right hand side.



LTC18 Fuel/Cargo pod installed, view from right side (LC18 similar). Current production doors are on right hand side.

END