N273DT

Equipment list

AD list

Weight & Balance

337's

N273DT

1. Approving Civil Aviation Authority/Country:	2.	3. Form Tracking Number:
FAA/United States	**AUTHORIZED RELEASE CERTIFICATE** **FAA Form 8130–3, AIRWORTHINESS APPROVAL TAG**	138928

4. Organization Name and Address:			5. Work Order/Contract/Invoice Number: 138928
Pacific Oil Cooler Service, Inc.	F.A.A RF3R813L		
1677 Curtiss Ct. La Verne,	CA 91750		

6. Item:	7. Description:	8. Part Number:	9. Quantity:	10. Serial Number:	11. Status/Work:
1	OIL COOLER	10281A	1	C06-4772-217	OVERHAULED

12. Remarks:

Work Order Number (Block 5) describing the actual work performed is attached.
The described work was performed in accordance with FAA Approved Pacific Oil Cooler Service, Inc. process specification #001 Rev E Dated 21/Nov/2005. (See Work Order) No Applicable Airworthiness Directives work / status. Certifies that the work specified in Blocks 11/12 was carried out in accordance with EASA part 145, and with respect to that work, the component is considered Ready for release to service under EASA part 145 Approval Number :EASA. 145.5554.

13a. [redacted]	14a. ☒ 14 CFR 43.9 Return to Service ☒ Other regulation specified in Block12 Certifies that unless otherwise specified in Block 12, the work identified in Block 11 and described in Block 12 was accomplished in accordance with Title 14,Code of Federal Regulations, part 43 and in respect to that work, the items are approved for return to service.
13b. [redacted]	14b. Authorized Signature: Ron 14c. Approval/Certificate No.: RF3R813L
13d. Name (Typed or Printed)	14d. Name: Ricardo Gaytan 14e. Date (dd/mmm/yyyy): 15/May/2020

It is important to understand that the existence of this document alone does not automatically constitute authority to install the aircraft engine/propeller/article.

Where the user/installer performs work in accordance with the national regulations of an airworthiness authority different than the airworthiness authority of the country specified in Block1, it is essential that the user/installer ensures that his/her airworthiness authority accepts aircraft engine(s)/propeller(s)/article(s) from the airworthiness authority of the country specified in Block 1.

Statements in Blocks 13a and 14adonot constitute installation certification. In all cases, aircraft maintenance records must contain an installation certification issued in accordance with the national regulations by the user/installer before the aircraft may be flown.

N273PT

1. Approving Civil Aviation Authority/Country:	2.	3. Form Tracking Number:
FAA/United States	**AUTHORIZED RELEASE CERTIFICATE** FAA Form 8130-3, AIRWORTHINESS APPROVAL TAG	**2A20**

4. Organization Name and Address:	5. Work Order/Contract/Invoice Number:
Kelly Aerospace Energy Systems, 1400 E. South Blvd., Montgomery, AL 36116 (PQ4176CE)	1909983

6. Item	7. Description:	8. Part Number:	9. Quantity:	10. Serial Number:	11. Status/Work:
1	HARNESS ASSY	KA12381	1	N/A	NEW

12. Remarks:

Item 1. Date Code: 2A20

AIRWORTHINESS APPROVAL PARTS.
The part(s) shipped under this approval is a subcomponent of FAA-PMA assembly

13a. Certifies the items identified above were manufactured in conformity to:

[X] Approved design data and are in a condition for safe operation.

[ ] Non-approved design data specified in Block 12.

13b. Authorized Signature:	13c. Approval/Authorization No.:	13d. Name (Typed or Printed):	13e. Date (dd/mmm/yyyy):
Stanley K Tindal	309167408	STANLEY K. TINDAL	**13 JAN 2020**

14a. [ ] 14 CFR 43.9 Return to Service [ ] Other regulation specified in Block 12

Certifies that unless otherwise specified in Block 12, the work identified in Block 11 and described in Block 12 was accomplished in accordance with Title 14, Code of Federal Regulations, part 43 and in respect to that work, the items are approved for return to service

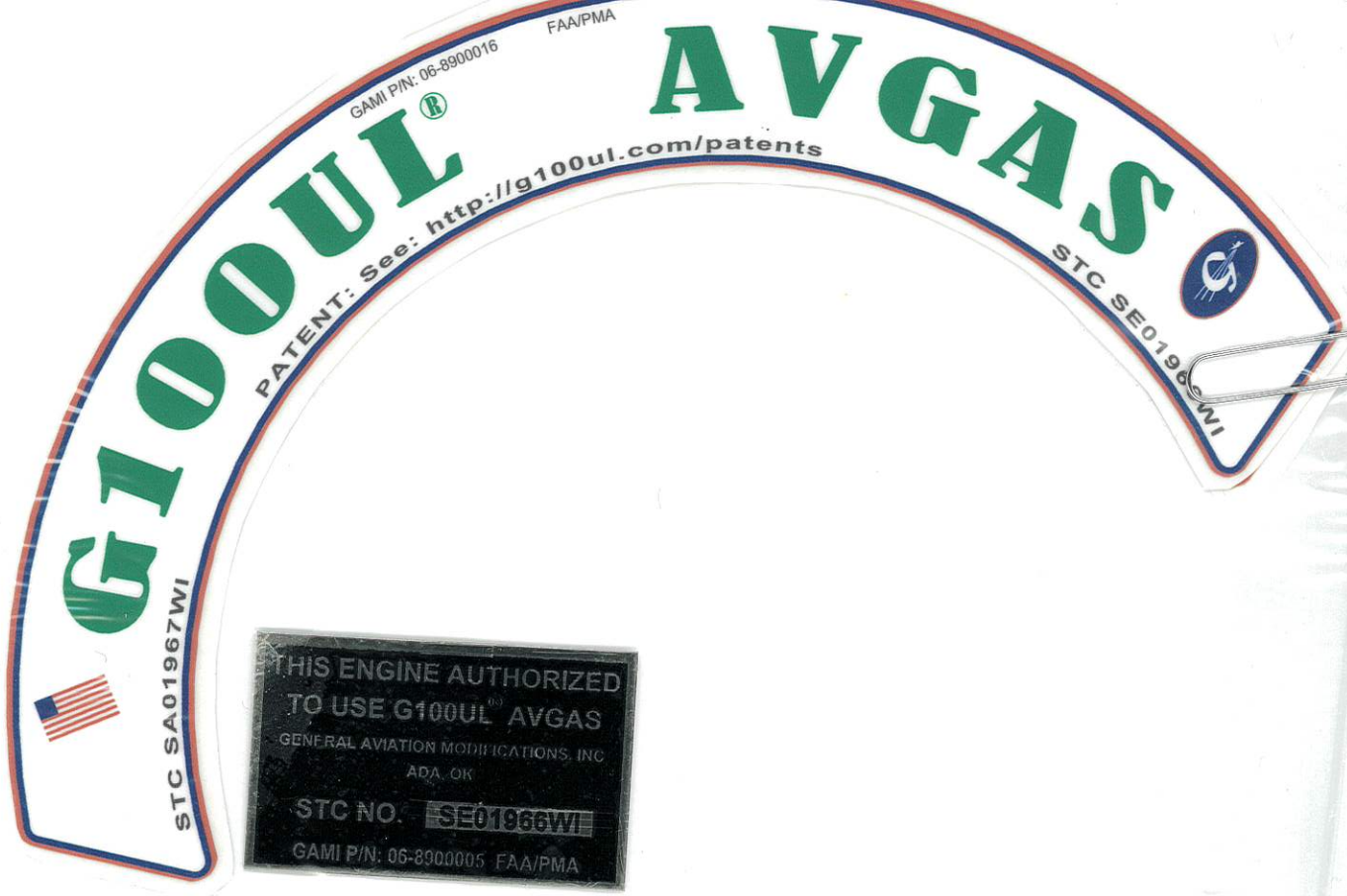
14b. Authorized Signature:	14c. Approval/Certificate No.:	14d. Name (Typed or Printed):	14e. Date (dd/mmm/yyyy):

User/Installer Responsibilities

It is important to understand that the existance of this document alone does not automatically constitute authority to install the part/component/assembly.

Where the user/installer performs work in accordance with the national regulations of an airworthiness authority different than the airworthiness authority of the country specified in Block 1, it is essential that the user/installer ensures that his/her airworthiness authority accepts parts/components/assemblies from the airworthiness authority of the country specified in Block 1.

Statements in Blocks 13a and 14a do not constitute installation certification. In all cases, aircraft maintenance records must contain an installation certification issued in accordance with the National regulations by the user/installer before the aircraft may be flown.


GAMI P/N: 06-8900016
FAA/PMA
G100UL®
AVGAS
PATENT: See: http://g100ul.com/patents
STC SE01966WI
STC SA01967WI
THIS ENGINE AUTHORIZED
TO USE G100UL® AVGAS
GENERAL AVIATION MODIFICATIONS, INC
ADA, OK
STC NO. SE01966WI
GAMI P/N: 06-8900005 FAA/PMA

General Aviation Modifications, Inc.
2800 AIRPORT ROAD – HANGAR A
ADA, OKLAHOMA 74820
888-FLY-GAMI
comments@gami.com

Congratulations on purchasing the G100UL® Unleaded Avgas STC. Enclosed in this packet you should find:

- A fuel port placard (self-adhesive decal) for each fueling port on your aircraft.
- A metal engine placard for each engine on your aircraft.
- Installation Instructions for the above placards.
- An Airplane Flight Manual Supplement document.
- An STC certificate and permission statement specific to your aircraft/engines.

You may install the placards as indicated or have your mechanic do so. You should have received a copy of the STC certificate with permission statement and a prefilled FAA form 337 as downloadable documents with your purchase.

Please contact a GAMI representative at (580) 436-4833 if your packet does not contain these materials.

Thank you for purchasing the G100UL® STC. We are working hard with fuel blenders and fuel distributors to make sure it gets to your airport as soon as possible.

Sincerely,

Tim Roehl

President

General Aviation Modifications, Inc.

Aircraft Cirrus SR22T Serial No. 0652
Make/model

Engine(s) Continental TSIO-550K Serial No.(s) 1009240
Make/model

Document No. 06-6590007, Revision B

G100UL® Avgas

FAA Approved Airplane Flight Manual Supplement

This Supplement must be attached to the Airplane Flight Manual or Pilot Operating Handbook when General Aviation Modifications, Inc. G100UL fuel is to be used in accordance with the following STC's: **SA01967WI** for airframes and **SE01966WI** for engines.

The information contained herein supplements the information of the Airplane Flight Manual or Pilot Operating Handbook or operating placards only in those areas listed herein. For limitations, procedures, and performance information not contained in this supplement, consult the basic Airplane Flight Manual or Pilot Operating Handbook or appropriate placards.

KENT S LUND Digitally signed by KENT S LUND Date: 2022.10.06 16:02:16 -05'00'

Kent S. Lund
Manager, Central Flight Test Section, AIR-714
Federal Aviation Administration Wichita, KS

Date: 6 October 2022

FAA Approved 10/6/2022

SECTION 1 – GENERAL

This supplement provides information to be used when operating aircraft and engines with G100UL avgas. Keep this document in the airplane cockpit within reach of the pilot.

Description

G100UL aviation gasoline (avgas) is an unleaded high octane avgas that may be used in place of, or in any combination with, ASTM D910 100LL, or any approved avgas with motor octane number lower than 100. G100UL avgas as it is first formulated is naturally varying in shades of yellow or yellow-orange color. To avoid confusion with some blends of Jet A or with lower octane unleaded approved aviation gasolines, a blue dye is added to the G100UL avgas. The combination of its native yellow color and the blue dye results in a finished G100UL avgas that when viewed in bright white light or sunlight may, subjectively, have a light-green to green to blue-green coloration. When mixed with ASTM D910 100LL, the color may, subjectively, appear to be yellow-green to blue-green or blue, depending on the ratio of G100UL avgas to 100LL in the sample.

SECTION 2 – LIMITATIONS

Fuel Limits

APPROVED FUELS

Do not mix G100UL avgas with motor gasoline (MOGAS) that contains ethanol or methanol.

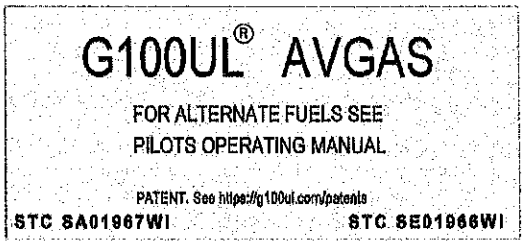
For aircraft that currently approve using isopropyl alcohol, do not exceed 1% by volume of the total amount of avgas or avgas mixture in the tank.

Do not exceed the fuel additive levels approved in the base AFM, POH, or placards. The dosage amounts are unchanged.

Placards

Adjacent to each fuel filler opening, at least one (or more) of the following placards should be added in addition to existing placards describing 100LL or other approved aviation gasoline:

1



Or

For aircraft that currently approve its use, isopropyl alcohol in amounts not to exceed 1% by volume can be added to G100UL or a mixture of G100UL and 100LL avgas to prevent ice formation in fuel lines and tanks. Be sure that isopropyl alcohol does not exceed the 1% by volume of the total amount of avgas or avgas mixture in the tank.

When mixed with 100LL avgas, the resulting G100UL avgas mixture will have a color that may vary from light-green to blue-green to blue and may not match the color of either fuel. The combination of the two conforming and approved fuels remains an aviation gasoline which conforms to the specification for G100UL avgas.

Fuel additives approved in the base AFM, POH, or placards continue to be approved in dosage amounts as listed in the AFM, POH, or placards.

During preflight inspection of the aircraft, drain fuel sumps and check fuel for signs of water or contaminants in the usual manner. G100UL, as noted in the description above, with the standard blue dye added to the fuel, will typically have a clearly recognizable yellow-green to green tint. Combinations of G100UL and 100LL avgas will result in different colors ranging from yellow-green to blue-green to blue. After extended exposure to sunlight G100UL may darken slightly. The color has no effect on the performance of the fuel. Water will still gather at the bottom of the fuel sample cup, as with 100LL and other aviation gasolines. Observe normal good practices to avoid contact with the skin or excessive inhalation of gasoline vapors. Use soap and water to promptly wash skin areas contaminated with aviation gasolines as soon as possible after exposure.

Operating procedures, including power settings, fuel flows, operating temperatures, operating limitations, etc. as listed in the aircraft POH, FMS, or placards remain unchanged while operating on G100UL avgas.

G100UL avgas has a volumetric energy density that is approximately 1 - 2% greater than that of typical ASTM D910 100LL fuel. Therefore, operation on 100% G100UL fuel may allow operation of the engine on very slightly lower fuel flow (measured in gallons/hour) compared to operation on 100LL, while providing the same power. Thus, operation with G100UL avgas may result in negligible to very slightly greater range at the same airspeed compared to operation on the same volume quantity of 100LL avgas, assuming all other factors that have an effect on range are the same.

SECTION 5 – PERFORMANCE

Performance will be essentially unchanged by the use of G100UL avgas, alone, or in any combination with other fuels approved for your airframe and engine.

United States of America
Department of Transportation
Federal Aviation Administration

Supplemental Type Certificate

Number: SA01967WI

This certificate issued to: General Aviation Modifications, Inc.
2800 Airport Road, Hangar A
Ada, OK 74820

Certifies that the change in the type design for the following product with the limitations and conditions therefore as specified hereon meets the airworthiness requirements of Part 23 *of* Code of Federal Regulations

Original Product Type Certificate Number:

Make:

Model: See attached FAA Approved Model List (AML) No. SA01967WI, for all aircraft makes, models and certification basis.

Description of Type Design Change:

Use of GAMI G100UL High Octane Unleaded Avgas on aircraft listed in the attached AML.
Add the following approved fuel: unleaded aviation gasoline per GAMI Specification G100UL-12C-2, or later FAA Accepted revision. Comingling is approved with ASTM Grade 100LL aviation gasoline and other gasolines with 100 MON or less, including MoGas, where those gasolines are also approved for the same make and model engines.

See attached STC AML No. SA01967WI for all required data.

Limitations and Conditions:

1. Specific approval must be obtained for each model aircraft to ensure compatibility with its fuel system.
2. Compatibility of this design with previously approved modifications must be determined by the installer.
3. STC SE01966WI must be previously installed.

This certificate and the supporting data which is the basis for approval shall remain in effect until surrendered, suspended, revoked, or a termination date is otherwise established by the Administrator of the Federal Aviation Administration.

Date of Application: October 6, 2020 *Date Reissued:*

Date of Issuance: July 23, 2021 *Date Amended:*

By Direction of the Administrator

Signature: Paul Nguyen

Paul Nguyen
Manager, AIR-7K0
Title: Wichita ACO Branch

Any alteration of this certificate is punishable by a fine of not exceeding $1,000, or imprisonment not exceeding 3 years, or both. This certificate may be transferred or made available to third persons by licensing agreements in accordance with 14 CFR 21.47. Possession of this Supplemental Type Certificate (STC) document by persons other than the STC holder does not constitute rights to the design data nor to alter an aircraft, aircraft engine, or propeller. The STC's supporting documentation (drawings, instructions, specifications, flight manual supplements, etc.) is the property of the STC holder. An STC holder who allows a person to use the STC to alter an aircraft, aircraft engine, or propeller must provide that person with written permission acceptable to the FAA. (Ref. 14 CFR 21.120)

Pursuant to title 49 USC 44704 (B) (3) (effective October 19, 1996) the signature below constitutes the agreement and permission of General Aviation Modifications, Inc., allowing the registered owner of **N273DT** to alter that certain **Cirrus Design Corporation** airframe.

Model **SR22T**, serial number, **0652**, and only that serial number, by application of STC No. SA01967WI, to that specific airframe, for the purpose of using G100UL™ high octane unleaded avgas which is the subject of that STC.

Timothy C. Roehl, President
January 15, 2023
23000153A1

United States of America
Department of Transportation
Federal Aviation Administration

Supplemental Type Certificate

Number: SE01966WI

This certificate issued to: General Aviation Modifications, Inc.
2800 Airport Road, Hangar A
Ada, OK 74820

Certifies that the change in the type design for the following product with the limitations and conditions therefore as specified hereon meets the airworthiness requirements of Part 33 *of* Code of Federal Regulations

Original Product Type Certificate Number:

Make:

Model: See attached FAA Approved Model List (AML) No. SE01966WI, for all engine makes, models and certification basis.

Description of Type Design Change:

Use of GAMI G100UL High Octane Unleaded Avgas in spark ignition piston aircraft engines.
Add the following approved fuel: unleaded aviation gasoline per GAMI Specification G100UL-12C-2, or later FAA Accepted revision.
Comingling is approved with ASTM Grade 100LL aviation gasoline and other gasolines with 100 MON or less, including MoGas, where those gasolines are also approved for the same make and model engines.

See attached STC AML No. SE01966WI for all required data.

Limitations and Conditions:

1. Specific approval must be obtained for each model aircraft to ensure compatibility with its fuel system.
2. Compatibility of this design with previously approved modifications must be determined by the installer.
3. This approval should not be extended to other specific engines of these models that incorporate any other previously approved modification, unless it is determined that the interrelationship between this change and any of those other previously approved modifications will introduce no adverse effect on the airworthiness of the engine.

This certificate and the supporting data which is the basis for approval shall remain in effect until surrendered, suspended, revoked, or a termination date is otherwise established by the Administrator of the Federal Aviation Administration.

Date of Application: October 1, 2020 *Date Reissued:*

Date of Issuance: July 23, 2021 *Date Amended:*

By Direction of the Administrator

Signature: Paul Nguyen

Paul Nguyen
Manager, AIR-7K0
Title: Wichita ACO Branch

Any alteration of this certificate is punishable by a fine of not exceeding $1,000, or imprisonment not exceeding 3 years, or both. This certificate may be transferred or made available to third persons by licensing agreements in accordance with 14 CFR 21.47. Possession of this Supplemental Type Certificate (STC) document by persons other than the STC holder does not constitute rights to the design data nor to alter an aircraft, aircraft engine, or propeller. The STC's supporting documentation (drawings, instructions, specifications, flight manual supplements, etc.) is the property of the STC holder. An STC holder who allows a person to use the STC to alter an aircraft, aircraft engine, or propeller must provide that person with written permission acceptable to the FAA. (Ref. 14 CFR 21.120)

Pursuant to title 49 USC 44704 (B) (3) (effective October 19, 1996) the signature below constitutes the agreement and permission of General Aviation Modifications, Inc., allowing the registered owner of **N273DT** to alter that certain **Continental** engine.

Model **TSIO-550-K**, serial number, **1009240**, and only that serial number, by application of STC No. SE01966WI, to that specific engine, for the purpose of using G100UL™ high octane unleaded avgas which is the subject of that STC.

Timothy C. Roehl, President
January 15, 2023
23000153E1

US Department of Transportation
Federal Aviation Administration

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

OMB No. 2120-0020
Exp: 01/31/2023

Electronic Tracking Number

For FAA Use Only

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

1. Aircraft

Nationality and Registration Mark: N273DT

Serial No.: 0652

Make: Cirrus Design Corporation

Model: SR22T

Series:

2. Owner

Name *(As shown on registration certificate)*: JASON D MILLS & ASSOCIATES LTD

Address *(As shown on registration certificate)*
Address: 2200 S RANCHO DR STE 140
City: LAS VEGAS State: NV
Zip: 891024449 Country: United States

3. For FAA Use Only

4. Type		5. Unit Identification			
Repair	Alteration	Unit	Make	Model	Serial No.
☐	☒	AIRFRAME	Cirrus Design Corporation	*(As described in Item 1 above)*	0652
☐	☐	POWERPLANT			
☐	☐	PROPELLER			
☐	☐	APPLIANCE	Type / Manufacturer		

6. Conformity Statement

A. Agency's Name and Address
Name
Address
City State
Zip Country

B. Kind of Agency
☐ U. S. Certificated Mechanic
☐ Foreign Certificated Mechanic
☐ Certificated Repair Station
☐ Certificated Maintenance Organization
☐ Manufacturer

C. Certificate No.

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

Extended range fuel per 14 CFR Part 43 App. B ☐

Signature/Date of Authorized Individual

7. Approval for Return to Service

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

BY								
	☐	FAA Flt. Standards Inspector	☐	Manufacturer	☐	Maintenance Organization	☐	Persons Approved by Canadian Department of Transport
	☐	FAA Designee	☐	Repair Station	X	Inspection Authorization		Other *(Specify)*

Certificate or Designation No.

Signature/Date of Authorized Individual

US Department of Transportation
Federal Aviation Administration

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

OMB No. 2120-0020
Exp: 01/31/2023

Electronic Tracking Number

For FAA Use Only

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

1. Aircraft

Nationality and Registration Mark	Serial No.
N273DT	0652

Make	Model	Series
Cirrus Design Corporation	SR22T	

2. Owner

Name *(As shown on registration certificate)*: JASON D MILLS & ASSOCIATES LTD

Address *(As shown on registration certificate)*
Address: 2200 S RANCHO DR STE 140
City: LAS VEGAS State: NV
Zip: 891024449 Country: United States

3. For FAA Use Only

4. Type		5. Unit Identification			
Repair	Alteration	Unit	Make	Model	Serial No.
☐	☐	AIRFRAME	Cirrus Design Corporation	*(As described in Item 1 above)*	0652
☐	☒	POWERPLANT	Continental	TSIO-550-K	1009240
☐	☐	PROPELLER			
☐	☐	APPLIANCE	Type / Manufacturer		

6. Conformity Statement

A. Agency's Name and Address
Name
Address
City State
Zip Country

B. Kind of Agency
☐ U. S. Certificated Mechanic ☐ Manufacturer
☐ Foreign Certificated Mechanic
☐ Certificated Repair Station
☐ Certificated Maintenance Organization

C. Certificate No.

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

Extended range fuel per 14 CFR Part 43 App. B ☐

Signature/Date of Authorized Individual

7. Approval for Return to Service

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

BY								
	☐	FAA Flt. Standards Inspector	☐	Manufacturer	☐	Maintenance Organization	☐	Persons Approved by Canadian Department of Transport
	☐	FAA Designee	☐	Repair Station	X	Inspection Authorization		Other *(Specify)*

Certificate or Designation No.

Signature/Date of Authorized Individual

FAA Form 337 (10/06)

General Aviation Modifications, Inc.
2800 Airport Road, Hangar A Ada, Oklahoma 74820
Phone: (580)436-4833 Fax: (580)436-6622
1-888-FLY-GAMI
comments@gami.com www.gami.com

REPORT 06-6560003, Rev. IR, May 4, 2021
INSTALLATION INSTRUCTIONS

AIRCRAFT AND ENGINES USING **G100UL™** AVIATION GASOLINE [1] PER STC'S SA01967WI AND SE01966WI

LOG OF REVISIONS

Pages	Revision	Signature	Date
All	IR	George W. Braly	May 4, 2021

THE FAA WICHITA ACO BRANCH
ACKNOWLEDGES RECEIPT AND
CONCURS WITH THE RECOMMENDATION
Name/Date: Digitally signed by Kevin Bruce Marks Date: 2021.05.06 09:50:09 -05'00'

Keep these instructions in aircraft or with aircraft logbooks for reference during maintenance.

INTRODUCTION

FAA Supplemental Type Certificates numbered SA01967WI AND SE01966WI approve G100UL aviation gasoline ("avgas") as an unleaded avgas approved to be used as a drop-in replacement for leaded ASTM D910 100LL, 100/130, or 100VLL or any approved leaded or unleaded avgas with motor octane number equal to or lower than 100 and currently approved for use in the airframes and engines listed in the AML's of those STC's.

INSTALLATION INSTRUCTIONS (AIRFRAME)

1. Clean an appropriate area near each fuel filler port.
2. Install the most appropriate one of the approved and available G100UL Avgas filler port placards. Example:

USE G100UL™ UNLEADED AVGAS or 100LL

Clean the surface and then remove backing from placard and place placard in a conspicuous area near each fuel filler port.

[1] G100UL is a trademark of General Aviation Modifications, Inc., Ada, Ok., and refers to a high octane unleaded avgas.

General Aviation Modifications, Inc.

2800 Airport Road, Hangar A Ada, Oklahoma 74820
Phone: (580)436-4833 Fax: (580)436-6622
1-888-FLY-GAMI
comments@gami.com www.gami.com

REPORT 06-6460002, Rev. C, September 1, 2022
INSTRUCTIONS FOR CONTINUED AIRWORTHINESS

AIRCRAFT AND ENGINES USING **G100UL**® Avgas PER STC'S SA01967WI AND SE01966WI

LOG OF REVISIONS

Pages	Revision	Date
1 - 4	A	June 1, 2021
2, 3	B	June 29, 2022
1,3,4,5	C	Sept. 1, 2022

Keep these instructions in aircraft or with aircraft logbooks for reference during maintenance. The maintenance instructions in this manual supplement the aircraft and engine manufacturers' service manuals.

INTRODUCTION

STC's SA01967WI AND SE01966WI approve G100UL Avgas[1] as an unleaded avgas formulated to be a transparent replacement for leaded ASTM D910 100LL, 100, or 100VLL. In addition, for engines and aircraft approved for operation on lower octane avgas, G100UL Avgas may be used in replacement of, or in any combination with, any approved leaded or unleaded avgas or mogas with motor octane number equal to or lower than 100 and currently approved for use in those aircraft and engines.

The G100UL avgas formulation has a vapor pressure that is nominal to ASTM D910 100LL. G100UL fuel has a volumetric energy density that is approximately 1 to 2% greater than that of typical ASTM D910 100LL fuel. For aircraft operating on G100UL fuel there are no material operational differences for the pilot. Stated another way, the aircraft and engine is functionally the same when operating the engine and aircraft with either fuel, or any combination of both fuels randomly present in the fuel tank of the aircraft.

[1] G100UL is a trademark of General Aviation Modifications, Inc., Ada, Oklahoma, for a certain high octane unleaded avgas.

DO NOT MIX G100UL WITH AUTO FUEL, unless the auto fuel (MOGAS) is also specifically approved for use in the aircraft and engine.

WEIGHT AND BALANCE

G100UL Avgas weighs approximately 6.2 to 6.3 pounds per gallon. Keep this in mind when performing weight and balance calculations on aircraft fueled with G100UL Avgas.

HANDLING, SERVICE AND MAINTENANCE OF AIRCRAFT AND ENGINES WITH G100UL Avgas

Storage and handling G100UL Avgas is the same as for other aviation grade fuels. All precautions and warnings that apply to 100LL also apply to G100UL.

When replacing seals or O-rings in the fuel systems of aircraft or engines operating on G100UL Avgas replace Buna N or nitrile fuel system components with components made of silicone or fluoropolymer elastomers (such as Viton) where practical.

When replacing flexible fuel hose assemblies utilize tetrafluoroethylene (Teflon) lined hose assemblies per TSO C53a or TSO C140 where practical.

SCHEDULED MAINTENANCE CHECKS AND INSPECTIONS

Continue to inspect both airframe and engine fuel systems using the airframe and engine manufacturers' suggested intervals and instructions.

FUEL SYSTEM SETUP

Aircraft/engine combinations approved by STC's SA01967WI and SE01966WI may be operated on G100UL Avgas without making any changes to the airframe or engine fuel systems that are set up to operate on 100LL fuel. However, routine fuel system adjustments do need to be performed on occasion as outlined in the airframe and/or engine maintenance manuals. Current fuel system setups that are based upon specific fuel flows in volume per time (i.e. gallons per hour) will continue to use the same volume per time values of fuel flow. Current fuel system setups that are based upon specific fuel flows in weight per time (i.e. pounds per hour) do not require changes to the adjustments listed in their maintenance manuals. The G100UL fuel typically weighs approximately 6.2 to 6.3 pounds per gallon which makes it approximately 3.5 to 5 percent higher in weight per gallon than 100LL fuel (6.0 pounds per gallon). G100UL has approximately 1 - 2% higher *energy content* on a per volume basis. Therefore, fuel system setups based upon weight per time may continue to use the adjustment values as listed for 100LL fuel. Fuel system adjustments that are based upon EGT values rich or lean of peak remain the same even though the peak EGT when running on G100UL may be different than the peak EGT when running on

the specific condition of the component which rendered it unacceptable for continued use;

iii. The corrective action or other resolution of the issue;

2) In addition, the owner/operator and any associated maintenance personnel are requested to document and report the following with respect to - -

Scheduled maintenance events:

a. Any fuel wetted component found unsuitable to be returned to service during a scheduled maintenance event and for which the reason the component is unsuitable to be returned to service is specifically identifiable as an atypical deterioration or failure of the fuel wetted component of the aircraft or the engine wetted fuel system;

b. **Important:** Only report ***atypical*** failures, which are reasonably attributable to exposure to aviation gasoline and which, in the service experience and judgment of the A&P or I.A., are identifiable as a premature service difficulty that is new or different from similar in-service failures previously associated with use of 100LL or other approved unleaded aviation gasolines and that specific component;

c. Please include in the report:

i. The N number of the aircraft; a description of the component; the manufacturer of the component and part number if available; time in service (if known, or otherwise, the best available estimate) of the component since new or overhaul; the best available estimate of the number of operating hours using G100UL avgas associated with the component during the service interval between the most recent scheduled maintenance and the current scheduled maintenance event; the estimated fraction of the time the component has been operated using G100UL Avgas verses 100LL or some other approved aviation gasoline;

ii. A description of the condition of the component and to the extent reasonably known, the manner in which the component failed and the specific condition of the component which rendered it unacceptable for continued use;

iii. The corrective action or other resolution of the issue;

3) Please report the requested data using the following web link: www.G100UL.com/maintenanceissues. Note: forms for reporting may be downloaded from the web site. Any questions should be submitted to

www.G100UL.com/comments.

AIRWORTHINESS LIMITATIONS

The Airworthiness Limitations Section is FAA approved and specifies maintenance required under 14 CFR §§ 43.16 and 91.403 of the Federal Aviation Regulations unless an alternative program has been FAA approved.

There are no new (or additional) airworthiness limitations associated with operation of aircraft and engines on G100UL unleaded aviation fuel or any combination of G100UL Avgas and other avgas.

other fuels. Fuel system adjustments performed on a bench using naptha or similar less flammable fluid should continue using those adjustment values without change.

RECOMMENDED OVERHAUL PERIODS

Recommended overhaul periods for fuel system components and/or engines remain the same as currently listed in the appropriate maintenance manuals. This is true whether the airplane has been run exclusively on G100UL Avgas or on a mixture of G100UL Avgas and 100LL or other gasoline variants approved for use in certified aircraft and engines.

RECOMMENDED MONITORING OF MAINTENANCE RELATED ISSUES

In order to enhance overall fleet safety during the initial transition from 100LL avgas to G100UL Avgas, the following maintenance practices are recommended:

1) The owner/operator and any associated maintenance personnel are requested to document and report the following with respect to - -

   Unscheduled maintenance events:

   a. Any unusual or atypical failure of any fuel wetted component of the aircraft or the engine fuel system associated with significant repetitive use of G100UL avgas.

   b. **Important:** Only report ***atypical*** failures, which are reasonably attributable to exposure to aviation gasoline and which, in the service experience and judgment of the A&P or I.A., are identifiable as a premature service difficulty that is new or different from similar in-service failures previously associated with use of 100LL or other approved unleaded aviation gasolines and that specific component;

   c. Please include in the report:

      i. The N number of the aircraft; a description of the component; the manufacturer of the component and part number if available; time in service (if known, or otherwise, the best available estimate) of the component since new or overhaul; the best available estimate of the number of operating hours using G100UL avgas associated with the component; the estimated fraction of the time the component has been operated using G100UL Avgas verses 100LL or some other approved aviation gasoline;

      ii. A description of the condition of the component and to the extent reasonably known, the manner in which the component failed and

SYSTEM DESCRIPTION

G100UL unleaded aviation gasoline is made from petroleum products. A large fraction of G100UL Avgas is composed of the same or similar components to those unleaded petroleum derived components traditionally found in familiar 100LL.

G100UL avgas, as it is first formulated, is naturally various shades of yellow or yellow-orange in color. To avoid confusion with some blends of Jet A or with lower octane unleaded approved aviation gasolines, a blue dye is added to the G100UL avgas. The combination of its native yellow color and the blue dye results in a finished (as delivered) G100UL avgas, that when viewed in bright white light or sunlight, subjectively, will have a light-green to green to blue-green coloration. When mixed with ASTM D910 100LL, the color may, subjectively, appear to be yellow-green, to blue-green or blue, depending on the ratio of G100UL avgas to 100LL in the sample.

PLACARDS

Aircraft approved for use of G100UL Avgas shall have placards as described in the AFMS for STC SA01967WI installed near the fuel tank fill points. Check these placards during regular maintenance intervals to verify they remain legible. Replace placards with new ones as required for legibility.

Engines approved for use of G100UL Avgas shall have a placard affixed to the rocker cover of cylinder #1 or in a conspicuous place on the engine. Check all of these placards during regular maintenance intervals to verify they remain legible. Replace placards with new ones as required for legibility.

OPERATION ON G100UL UNLEADED AVIATION FUEL

Operation on G100UL avgas is the same as operation on other approved aviation grade fuels.

G100UL avgas may be mixed with 100LL (blue), 100 (green), or 100VLL (blue) avgas in any combination. Mixing G100UL Avgas with 100LL or 100 or 100VLL may change the color of the resultant mixture to one that is different than either of the fuels. The color of the final mixture will have no effect on the performance of the fuel. Do not mix G100UL Avgas with any fuel containing ethanol or methanol. For aircraft that currently approve its use, isopropyl alcohol in amounts not to exceed 1% by volume (or less if the limit listed in the AFM or POH is less than 1%) can be added to G100UL or a mixture of G100UL Avgas and another approved avgas to prevent ice formation in fuel lines and tanks. Be sure that isopropyl alcohol does not exceed the 1% by volume (or less) of the <u>total</u> amount of avgas or avgas mixture in the tank.

Fuel additives approved in the base AFM, POH, or placards continue to be approved in dosage amounts as listed in the AFM, POH, or placards.

3. Fill out Form 337 for airframe STC SA01967WI and process according to FAR's.
4. Review AFMS and ICA prior to flight with G100UL fuel.
5. Place AFMS, GAMI Report 06-6590007, in AFM or in cockpit within easy reach of pilot.
6. Place ICA, GAMI Report 06-6460002, with the maintenance logs for future reference.

INSTALLATION INSTRUCTIONS (ENGINE)

1. Clean a flat 1.5" X 2" area on cylinder #1 rocker arm cover with acetone or isopropyl alcohol. Apply the correct G100UL™ avgas label to the cleaned area. The G100UL avgas label is a self-adhesive label. However, if the label does not properly adhere to the rocker arm cover, the label may be attached with a dab of high temperature RTV silicone, such as Permatex "Ultra Copper" P/N101B or equivalent. Allow to cure thoroughly prior to operation of the engine.
2. If there is no suitable location on the rocker arm cover, then permanently affix the placard in a similar manner in a conspicuous location on the engine.
3. Fill out Form 337 for each engine STC SE01966WI and process according to FAR's.
4. Instructions for Continued Airworthiness, GAMI Report 06-6460002, also apply to engines.

WEIGHT AND BALANCE

G100UL avgas weighs about 6.2 to 6.3 pounds per gallon. Keep this slight difference in mind when performing weight and balance calculations on aircraft fueled with G100UL avgas. When the aircraft is fueled with mixtures of G100UL avgas and 100LL, then the pilot should use a value for the weight of the blended load of fuel that is proportional to the volume of 100LL at 6.0 lbs/gallon and G100UL avgas at 6.25 lbs/gallon.

FUEL SYSTEM SETUP

See existing applicable ICA for fuel system setup, if necessary.

OPERATION INSTRUCTIONS

Operate the engine the same as it would be operated on existing approved fuels with same fuel flows and operating limitations as listed in the current TCDS, operating manual, AFM, AFMS, ICA, or approved placards.

NOTICE

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

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

N273DT
Nationality and Registration Mark

Date

INSTALLED G100UL UNLEADED AVGAS PLACARD ON THIS ENGINE AS DESCRIBED IN THE INSTALLATION INSTRUCTIONS ASSOCIATED WITH STC SE01966WI. NO CHANGE IN WEIGHT/BALANCE. MADE APPROPRIATE ENTRY IN THE ENGINE LOGBOOK.

☐ Additional Sheets Are Attached

NOTICE

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

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

N273DT

Nationality and Registration Mark

Date

INSTALLED G100UL UNLEADED AVGAS PLACARDS NEAR EACH FUEL FILLER PORT ON THE AIRCRAFT AS DESCRIBED IN THE INSTALLATION INSTRUCTIONS ASSOCIATED WITH STC SA01967WI. NO CHANGE IN WEIGHT/BALANCE. MADE APPROPRIATE ENTRY IN THE AIRCRAFT LOGBOOK.

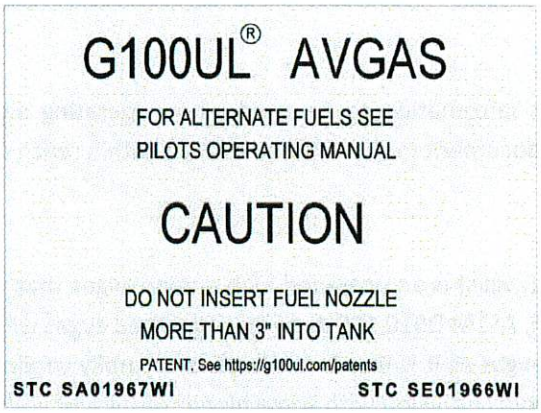
☐ Additional Sheets Are Attached

SECTION 6 – WEIGHT AND BALANCE

The empty weight may change by a slight amount when G100UL avgas is used. This is due only to the very small change in the weight of the unusable fuel which is considered part of the empty weight of the aircraft. The weight of the unusable fuel will increase by ~4% when G100UL is used in place of 100LL. This slight increase in empty weight is considered negligible and does not require the empty weight or c.g. to be re-calculated. The full fuel payload will be reduced by the slight increase in the weight of the volume of G100UL that replaces 100LL in the tanks.

When using Grade G100UL avgas, use 6.25 lbs/gal for weight and balance calculations. For Grade 100LL, use 6.0 lbs/gal for weight and balance calculations. For mixtures of G100UL avgas and other fuels, either use 6.25 lbs/gal or calculate the weight of the combined fuel types, as indicated by their respective weights/gallon. Note, approved automotive / MoGas may often weigh as much as 6.3 lbs/gallon.

2



And/Or

3

Other shapes and sizes of placards for this purpose as may be approved from time to time by the holder of the G100UL avgas airframe STC and those alternative placards may be substituted for any of the placards depicted, above. Placard number 2 should be included for aircraft that have similar existing placards restricting depth of insertion of the fuel nozzle.

SECTION 3 – EMERGENCY PROCEDURES

No Change

SECTION 4 – NORMAL PROCEDURES

For aircraft/engines which require the use of Grade 100LL or Grade 100, G100UL avgas may be used alone or in any combination with Grade 100LL or Grade 100 avgas. For aircraft/engines that are approved for use on other fuels with lower octane requirements, G100UL may be used, in any combination, with those fuels approved for use on those aircraft/engines.

CAUTION: DO NOT MIX G100UL AVGAS WITH MOTOR GASOLINE (MOGAS)

THAT CONTAINS ETHANOL OR METHANOL.

LOG OF REVISIONS

Revision	Pages	Date	Description	FAA Approved
IR	All	6-29-2021	Complete Supplement	Kent S Lund
A	3, 5	6-29-2022	Added "Blue A" dye to fuel	Not submitted for review
B	3-5	9-13-2022	Clarified fuel color wording and reformatted content of the LIMITATIONS and NORMAL sections	KENT S LUND Digitally signed by KENT S LUND Date: 2022.10.06 16:02:44 -05'00'

Equipment List for 273DT

Company
Address
City, State Zip
Phone
Fax

Airframe

Make	CIRRUS DESIGN CORPORATION	Current time	1111.1 (Hobbs: 1320.3)
Model	SR22T	Total time	1111.1
Serial number	22T-0652	Certification date	Nov 2013

Notes:
Annual c/w: Chad May 8, 2020
FAR 91.207(d) due: May 2021
ELT battery due: Dec 2020
FAR 91.411 & 91.413 due: May 2022
Oxygen hydro due: Nov 2023

Engine 1

Make	TELEDYNE CONTINENTAL MOTORS	Location	Front
Model	TSIO-550K 1B	Total time	1111.1
Serial Number	1009240	TSMOH	

Notes:
Cylinder 2 & 4 replaced12-22-2016 @ 551.1
#2 s/n: AC161B273
#4 s/n: AC161B692

Prop 1

Make	HARTZELL	Blade	N7605B
Model	PHC-J3Y1F-1N	Total Time	1111.1
Serial Number	NJ816B	TSMOH	
Hub Notes	Blade s/n: #1: A7656 #2: A7690 #3: A7704		

Appliances

PARACHUTES	Cirrus	CAPS rocket motor	
	Serial # 0213	**Part #** 29500-004	**Location**
	Notes: Overhaul / replacement due: Oct 2023		
	Cirrus	CAPS Parachute	
	Serial # B0213	**Part #** 29696-003	**Location**
	Notes: Repack due: Dec 2023		
	Cirrus	CAPS reefing line cutters	
	Serial # 4175 & 4178	**Part #** 26707-002	**Location**
	Notes: Replacement due: Sept 2025		
ELT'S	ACR (Artex)	ME406 ELT	
	Serial # 242-00091	**Part #** 453-6603	**Location**
	Notes: Battery p/n: 452-6499		
SAFETY BELTS	AmSafe	EMA Controller	
	Serial # n/a	**Part #** 20902-001	**Location**
	Notes: Replaced 8-24-2018 @ 763.1 Next due: 8-2025		

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Equipment List for 273DT

	AmSafe	Inflator			
	Serial # AASI306Z10195 **Notes:** Replacement due: 9-2023	**Part #**	20902-002	**Location**	Pilot
	AmSafe	Inflator			
	Serial # AASI306Z10252 **Notes:** Replacement due: 9-2023	**Part #**	20902-002	**Location**	Copilot
OXYGEN SYSTEMS	Scott	Oxygen bottle			
	Serial # n/a **Notes:** Hydro due: 11-2023 Life limit due: 8-2028	**Part #**	102N0100-1	**Location**	
ALTERNATORS	Hartzell	Alternator			
	Serial # H-R030253 **Notes:** New 9-21-2017	**Part #**	656802	**Location**	
	Hartzell	Alternator			
	Serial # H-0040580 **Notes:** O/H: 8-5-2014 @ 113.4	**Part #**	657199	**Location**	#2
BATTERIES	Cirrus	Battery			
	Serial # n/a **Notes:** New 2-28-2018 @ 724.4 Next due: 2-2020 or 1324.4	**Part #**	50979-001	**Location**	#2
	Concorde	Main Battery			
	Serial # 40663504 **Notes:** New 10-27-2015 @ 291.3 Next due: 10-2018 or 2091.3	**Part #**	RG24-15M	**Location**	
MAGNETOS	Bendix	S6RSC-25P Magneto			
	Serial # D17EA048 **Notes:** O/H 9-9-2019 @ 1010.0 500 hour due: 1510.0 4 year due: 9-2023	**Part #**	10-500566-101	**Location**	Left
	Bendis	S6RSC-25P Magneto			
	Serial # D11EA126 **Notes:** O/H 5-22-2019 @ 929.5 500 hour due: 1429.5 4 year due: 5-2023	**Part #**	10-500556-101	**Location**	Right
FUEL PUMPS	TCM	Engine driven fuel pump			
	Serial # B16KA098 **Notes:** O/H 4-6-2017 @ 697.1	**Part #**	649368-60A7	**Location**	
SPARK PLUGS	Tempest	Spark plug			
	Serial # n/a **Notes:** New 12-22-2016 @ 551.1	**Part #**	URHB32E	**Location**	
GOVERNORS	Hartzell	Propeller Governor			
	Serial # G2690NJ **Notes:** O/H 12-22-2015 @ 321.5	**Part #**	5-1-44F	**Location**	

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Equipment List for 273DT

AIR FILTERS	Cirrus	Air Filter	
	Serial # n/a **Notes:** Replaced 9-9-2019 @ 1010.0 Next due 9-2022 or 1510.0	**Part #** 27166-001	**Location**
TURBOCHARGERS	Hartzell	TA36 Turbocharger	
	Serial # H-QIL001455 **Notes:**	**Part #** 646677	**Location** Left
	Hartzell	TA36 Turbocharger	
	Serial # H-QIL00148 **Notes:**	**Part #** 646677	**Location** Right
RADIO EQUIPMENT	Garmin	GTX 33ES Transponder	
	Serial # 89125983 **Notes:**	**Part #** 011-00779-30	**Location**

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N273DT

STC Installed

SA01708SE: Precise Flight Oxygen system. 10-25-2013 at Factory
Beringer Brakes. 12-17-2014 @ 150.0
SA02279AT: Lo Presti landing lights. 10-26-2017 @ 649.6
SE09963SC: GAMI injectors. 4-25-2017 @ 610.2

C/W One time SB, SL, SI, & SA

Cirrus 2X-79-04: improved oil pressure switch. 9-21-2017
Cirrus 2X-52-08R2: Catcher/ Diverter & gas strut rod end. 12-22-2016 @ 551.1
Cirrus 2X-71-27R1: Alternate air box. 12-22-2015 @ 321.5
Cirrus 2X-28-12R1: Electric fuel pump. 12-22-2015 @ 321.5
TCM SCB 15-7: Replace cross fitting, p/n: 658607. 11-18-2015 @ 301.9
Cirrus 2X-71-25: intercooler flange stiffeners. 12-17-2014 @ 150.0
Cirrus 2X-33-06: wing light gasket. 12-17-2014 @ 150.0
Cirrus SA14-02R1, TCM SIL-14-4: Alternator brace alignment. 12-17-2014 @ 150.0
Cirrus SI10-01: Insp return check valve. 8-5-2014 @ 101.3
Cirrus 2X-71-33, TCM MSB18-08B insp & mod of cylinder assembly due on #2 & 4 cylinders. May 8, 2020 @ ATT: 1111.1
Cirrus 2X-34-29, Pitot and TKS line routing insp. May 8, 2020 @ ATT: 1111.1
Cirrus 2X-95-24R2: CAPS rocket shelf ground wire. May 8, 2020 @ ATT: 1111.1
Cirrus SA 18-06, AmSafe SB501583-25-01: Capture of potential loose fasteners on inertia reels. May 8, 2020 @ ATT: 1111.1
Cirrus 2X-79-07R1: Oil return line chafing inspection. May 8, 2020 @ ATT: 1111.1
Cirrus 2X-79-10, TCM SIL 17-02: Turbocharger oil check valve filter installation. May 8, 2020 @ ATT: 1111.1
Cirrus 2X-74-02: Ignition switch security. May 8, 2020 @ ATT: 1111.1
Cirrus SA 17-05, TCM SB 16-8: Turbo exhaust transition inspection. May 8, 2020 @ ATT: 1111.1
Cirrus SA 16-09R1, ACR (Artex) SA 161011.1: Mount tray strap insp. May 8, 2020 @ ATT: 1111.1
Cirrus 2X-42-17: Garmin Perspective S/W update v0764.37. May 8, 2020 @ ATT: 1111.1

C/W recurring SB, SL, & SI

Due SB, SL, & SI

Cirrus 2X-95-23R1: CAPS AFT grain replacement.

DNA SB, SL, & SI

Cirrus 2X-32-22 R1 C/W ----- R4 terminates SB.
Cirrus 2X-32-23 CW ----- R2 terminates SB.
Cirrus SA 17-16R1 turbocharger center housing insp. DNA by Aircraft s/n and turbo has not be replaced.

FAA Airworthiness Directives Compliance Record

Company:

Category: Airframe

Manufacturer: Cirrus Design Corp.

Model: SR22T

Position:

P/N:

S/N: 0652

Aircraft Registration No: N273DT

ATP Revision: 05/14/2021

Issue Number Effective Date Amendment #	Description	Complied	Method of Compliance	Recur	Next Due	Facility Cert No. / Type Authorized By Signed
2012-01-11 02/29/2012	To inspect and modify the air box flange welds and slots and install induction system air box seals as applicable	-- Hrs: -- C: --	N/A By Date of MFG.	No	D: -- Hrs: -- C: --	Gryphon Aircraft 2SDR271B/Repair Station Johnny Wildman

Category: Engine

Manufacturer: Continental Motors

Model: TSIO-550-K

Position:

P/N:

S/N: 1009240

ATP Revision: 05/14/2021

Issue Number Effective Date Amendment #	Description	Complied	Method of Compliance	Recur	Next Due	Facility Cert No. / Type Authorized By Signed
2020-16-11 09/21/2020	To Prevent Failure of the Engine. If Not Addressed, Could Result in Failure of the Engine, In-Flight Shutdown, and Forced Landing	05/01/2021 Hrs: 1265 C: --	Complied with AD2020-16-11 & MSB18-08C	No	D: -- Hrs: -- C: --	Gryphon Aircraft 2SDR271B/Repair Station Johnny Wildman
2016-21-04 11/18/2016	To prevent failure of the oil cooler cross fitting and engine, IFSD, and loss of the airplane	11/18/2015 Hrs: 301.9 C: --	Complied with Continental Motors CSB 15-7.	No	D: -- Hrs: -- C: --	Gryphon Aircraft 2SDR271B/Repair Station Johnny Wildman
2016-16-12 09/15/2016	To prevent failure of the cylinder assemblies, which could lead to failure of the engine, in-flight,contd.	-- Hrs: -- C: --	N/A Cylinders Not Installed.	No	D: -- Hrs: -- C: --	Gryphon Aircraft 2SDR271B/Repair Station Johnny Wildman

Issue Number Effective Date Amendment #	Description	Complied	Method of Compliance	Recur	Next Due	Facility Cert No. / Type Authorized By Signed
2012-10-13 06/08/2012	To prevent starter adapter gear shaft failure which could cause oil scavenge pump failure and engine,contd.	-- Hrs: -- C: --	N/A By Date of MFG.	No	D: -- Hrs: -- C: --	Gryphon Aircraft 2SDR271B/Repair Station Johnny Wildman
2012-03-06 C 02/24/2012	To prevent an in-flight engine shutdown due to a failed fuel servo diaphragm, and damage to the airplane	-- Hrs: -- C: --	N/A By Date of MFG.	No	D: -- Hrs: -- C: --	Gryphon Aircraft 2SDR271B/Repair Station Johnny Wildman
2011-25-51 12/28/2011	Superseded by 2012-10-13	-- Hrs: -- C: --	Superseded by 2012-10-13	No	D: -- Hrs: -- C: --	Gryphon Aircraft 2SDR271B/Repair Station Johnny Wildman
2010-11-04 06/16/2010	To prevent excessive hydraulic lifter wear, which can result in loss of engine power & loss of control of the airplane	-- Hrs: -- C: --	N/A By Date of MFG.	No	D: -- Hrs: -- C: --	Gryphon Aircraft 2SDR271B/Repair Station Johnny Wildman
2009-24-52 E 11/18/2009	Superseded by 2010-11-04	-- Hrs: -- C: --	Superseded by 2010-11-04	No	D: -- Hrs: -- C: --	Gryphon Aircraft 2SDR271B/Repair Station Johnny Wildman
2004-08-10 05/05/2004	To prevent loss of engine power due to cracks in the cylinder head & possible engine failure caused,contd.	-- Hrs: -- C: --	N/A By Date of MFG.	No	D: -- Hrs: -- C: --	Gryphon Aircraft 2SDR271B/Repair Station Johnny Wildman
00-00-01 01/22/2001	Important for Cessna Oil Filter Adapter Assemblies listed in AD 96-12-22	-- Hrs: -- C: --	N/A By Date of MFG.	No	D: -- Hrs: -- C: --	Gryphon Aircraft 2SDR271B/Repair Station Johnny Wildman
2000-23-21 12/12/2000	To prevent crankshaft connecting rod journal fracture, which could result in total engine power,contd.	-- Hrs: -- C: --	N/A By Date of MFG.	No	D: -- Hrs: -- C: --	Gryphon Aircraft 2SDR271B/Repair Station Johnny Wildman
2000-08-51 E 04/28/2000	Superseded by 2000-23-21	-- Hrs: -- C: --	Superseded by 2000-23-21	No	D: -- Hrs: -- C: --	Gryphon Aircraft 2SDR271B/Repair Station Johnny Wildman

Issue Number Effective Date Amendment #	Description	Complied	Method of Compliance	Recur	Next Due	Facility Cert No. / Type Authorized By Signed
99-19-01 09/30/1999	To prevent crankshaft failure due to crankshaft cheek cracks, which could result in total engine power loss,contd.	-- Hrs: -- C: --	N/A By Date of MFG.	No	D: -- Hrs: -- C: --	Gryphon Aircraft 2SDR271B/Repair Station Johnny Wildman
99-09-17 L 04/22/1999	Superseded by 99-19-01	-- Hrs: -- C: --	Superseded by 99-19-01	No	D: -- Hrs: -- C: --	Gryphon Aircraft 2SDR271B/Repair Station Johnny Wildman
96-12-22 07/31/1996	[Recurring] TO PREVENT LOSS OF ENGINE OIL CAUSED BY LOOSE OR SEPARATED OIL FILTER ADAPTERS, WHICH COULD RESULT IN ENGINE,CONTD.	-- Hrs: -- C: --	N/A By Date of MFG.	Yes	D: -- Hrs: -- C: --	Gryphon Aircraft 2SDR271B/Repair Station Johnny Wildman
93-10-02 08/12/1993	TO PREVENT AN ENGINE FAILURE DUE TO A MISSING CYLINDER VALVE RETAINER KEY	-- Hrs: -- C: --	N/A By Date of MFG.	No	D: -- Hrs: -- C: --	Gryphon Aircraft 2SDR271B/Repair Station Johnny Wildman

Category: Propeller

Position:

ATP Revision: 05/14/2021

Manufacturer: Hartzell Propeller

P/N:

Model: PHC-J3Y1F-1

S/N: NJ816B

Issue Number Effective Date Amendment #	Description	Complied	Method of Compliance	Recur	Next Due	Facility Cert No. / Type Authorized By Signed
2007-26-09 01/30/2008	To prevent failure of the propeller blade from fatigue cracks in the aluminum blade shank radius, which can,contd.	-- Hrs: -- C: --	N/A By Date of MFG.	No	D: -- Hrs: -- C: --	Gryphon Aircraft 2SDR271B/Repair Station Johnny Wildman
2005-14-11 08/17/2005	To prevent blade failure that could result in separation of a propeller blade and loss of control of the airplane	-- Hrs: -- C: --	N/A By Date of MFG.	No	D: -- Hrs: -- C: --	Gryphon Aircraft 2SDR271B/Repair Station Johnny Wildman
2002-09-08 06/13/2002	Superseded by 2007-26-09	-- Hrs: -- C: --	Superseded by 2007-26-09	No	D: -- Hrs: -- C: --	Gryphon Aircraft 2SDR271B/Repair Station Johnny Wildman

Issue Number Effective Date Amendment #	Description	Complied	Method of Compliance	Recur	Next Due	Facility Cert No. / Type Authorized By Signed
2001-07-03 C 06/04/2001	To prevent propeller failure of the propellers returned to service by BASCO, & possible loss of airplane control	-- Hrs: -- C: --	N/A By Date of MFG.	No	D: -- Hrs: -- C: --	Gryphon Aircraft 2SDR271B/Repair Station Johnny Wildman

Category: Appliance **Position:** **ATP Revision:** 05/14/2021

Manufacturer: Induction Air Filters **P/N:**

Model: PAPER INDUCTION AIRFILTER **S/N:**

Issue Number Effective Date Amendment #	Description	Complied	Method of Compliance	Recur	Next Due	Facility Cert No. / Type Authorized By Signed
84-26-02 01/29/1985	[Recurring] TO PREVENT POSSIBLE ENGINE POWER LOSS OR STOPPAGE CAUSED BY ENGINE INGESTION OF FRAGMENTS, CONTD.	09/09/2019 Hrs: 1010 C: --	Replace every 500 hours.	Yes	D: -- Hrs: -- C: --	Gryphon Aircraft 2SDR271B/Repair Station Johnny Wildman

Airworthiness Directive Compliance Record

AIRCRAFT RECORDS - DO NOT DESTROY **airframe**

Company	
Manufacturer	CIRRUS DESIGN CORPORATION
Model	SR22T
Tail #	273DT
Serial #	22T-0652
Current Time	1111.1 (Hobbs: 1320.3)
Total Time	1111.1
A/C Cert. Date	Nov 2013

12-01-11 **02/29/12** **INDUCTION AIR BOX AND SEALS/**

Method of Compliance D/N/A by ACFT S/N

SB # **Date** **Next Due** N/A

Notes

Signature **Cert. #** Chad Burns 2829180

Prepared by _____ Date _____

Airworthiness Directive Compliance Record

AIRCRAFT RECORDS - DO NOT DESTROY **engine**

Company
Manufacturer TELEDYNE CONTINENTAL MOTORS
Model TSIO-550K 1B
Location Front
Serial # 1009240
TSMOH
Total Time 1111.1

93-10-02 **08/12/93** **CYLINDER VALVE RETAINER KEY/**
Method of Compliance D/N/A by engine model
SB # **Date** **Next Due** N/A
Notes
Signature **Cert. #** Chad Burns 2829180

93-16-15 **12/14/93** **FUEL PUMP DRIVE SHAFT COUPLING/**
Method of Compliance D/N/A by engine model
SB # **Date** **Next Due** N/A
Notes
Signature **Cert. #** Chad Burns 2829180

***96-12-22** **07/31/96** **OIL FILTER ADAPTER ASSEMBLY NUT/**
Method of Compliance D/N/A - p/n not installed
SB # **Date** **Next Due** N/A
Notes
Signature **Cert. #** Chad Burns 2829180

99-09-17 **04/22/99** **SUPERSEDED BY AD 99-19-01/**
Method of Compliance SUPERCEDED BY 99-19-01
SB # **Date** **Next Due** N/A
Notes
Signature **Cert. #** Chad Burns 2829180

99-19-01 **09/30/99** **CRANKSHAFT CHEEK CRACKS/**
Method of Compliance D/N/A - Date of manufacture
SB # **Date** **Next Due** N/A
Notes
Signature **Cert. #** Chad Burns 2829180

00-08-51 **04/28/00** **SUPERSEDED BY AD 2000-23-21/**
Method of Compliance Superceded by 2000-23-21
SB # **Date** **Next Due** N/A
Notes
Signature **Cert. #** Chad Burns 2829180

00-23-21 **12/12/00** **CRANKSHAFT CONNECTING ROD JOURNAL/**
Method of Compliance D/N/A - Dates manufactured
SB # **Date** **Next Due** N/A
Notes
Signature **Cert. #** Chad Burns 2829180

Prepared by _____ Date _____

Airworthiness Directive Compliance Record

04-08-10 **05/05/04** **ENGINE COMPONENTS, INC. STC'D CYLINDERS/**
Method of Compliance D/N/A - ECI cylinders not installed
SB # **Date** **Next Due** N/A
Notes
Signature **Cert. #** Chad Burns 2829180

07-16-10 **08/23/07** **TURBOCHARGER COMPRESSOR ROTOR/**
Method of Compliance D/N/A by engine model
SB # **Date** **Next Due** N/A
Notes
Signature **Cert. #** Chad Burns 2829180

08-08-17 **05/06/08** **TURBINE HOUSING EXHAUST FLANGE/**
Method of Compliance D/N/A - by Kelly Aerospace Turbocharger not installed.
SB # **Date** **Next Due** N/A
Notes
Signature **Cert. #** Chad Burns 2829180

09-24-51 **11/16/09** **SUPERSEDED BY AD 2009-24-52/**
Method of Compliance SUPERCEDED BY AD 2009-24-52
SB # **Date** **Next Due** N/A
Notes
Signature **Cert. #** Chad Burns 2829180

09-24-52 **11/18/09** **SUPERSEDED BY AD 2010-11-04/**
Method of Compliance SUPERCEDED BY 10-11-04
SB # **Date** **Next Due** N/A
Notes
Signature **Cert. #** Chad Burns 2829180

10-11-04 **06/16/10** **HYDRAULIC VALVE LIFTERS/**
Method of Compliance D/N/A - Date of manufacture
SB # **Date** **Next Due** N/A
Notes
Signature **Cert. #** Chad Burns 2829180

11-25-51 **12/28/11** **SUPERSEDED BY AD 2012-10-13/**
Method of Compliance Superceded by 2012-10-13
SB # **Date** **Next Due** N/A
Notes
Signature **Cert. #** Chad Burns 2829180

12-03-06 **02/24/12** **AFS FUEL SERVO DIAPHRAGM/**
Method of Compliance D/N/A - p/n not installed
SB # **Date** **Next Due** N/A
Notes
Signature **Cert. #** Chad Burns 2829180

12-10-13 **06/08/12** **STARTER ADAPTER SHAFT GEAR/**
Method of Compliance D/N/A - Date of manufacture
SB # **Date** **Next Due** N/A
Notes
Signature **Cert. #** Chad Burns 2829180

Prepared by _____ Date _____

Airworthiness Directive Compliance Record

16-16-12 **09/15/16** **ECI CLASS 71 OR CLASS 76 CYLINDER ASSEMBLY FAILURES/**

Method of Compliance D/N/A - ECI cylinders not installed
SB # **Date** **Next Due** N/A
Notes
Signature **Cert. #** Chad Burns 2829180

16-21-04 **11/18/16** **OIL COOLER CROSS FITTING, NIPPLE AND BUSHING INTEGRITY/**

Method of Compliance P/C/W as per AD & SB
SB # CSB 15-7 **Date** 11-18-2015 @ 301.9 **Next Due** N/A
Notes Installed fitting p/n: 658607.
Signature **Cert. #** Chad Burns 2829180

Prepared by _____ Date _____

Airworthiness Directive Compliance Record

AIRCRAFT RECORDS - DO NOT DESTROY **propeller**

Company
Manufacturer HARTZELL
Model PHC-J3Y1F-1N
Location
Tail # 273DT
Serial # NJ816B
Blade N7605B
TSMOH
Total Time 1111.1

77-12-06 **12/21/77** **77-12-06 R2 IS SUPERSEDED BY AD 2002-09-08/**
Method of Compliance Superceded by 2002-09-08
SB # **Date** **Next Due** N/A
Notes
Signature **Cert. #** Chad Burns 2829180

***94-17-13** **09/15/94** **EDDY CURRENT INSPECTION/**
Method of Compliance D/N/A by propeller hub s/n
SB # **Date** **Next Due** N/A
Notes
Signature **Cert. #** Chad Burns 2829180

01-07-03 **06/04/01** **PROPELLERS RETURNED TO SERVICE BY BASCO/**
Method of Compliance DNA - Not Returned to Service by company.
SB # **Date** **Next Due** N/A
Notes
Signature **Cert. #** Chad Burns 2829180

02-09-08 **06/13/02** **SUPERSEDED BY AD 2007-26-09/**
Method of Compliance Superceded by 2007-26-09
SB # **Date** **Next Due** N/A
Notes
Signature **Cert. #** Chad Burns 2829180

03-13-17 **07/18/03** **MAINTENANCE REPAIR BY T AND W PROPELLERS, INC./**
Method of Compliance DNA - Not Returned to Service by company.
SB # **Date** **Next Due** N/A
Notes
Signature **Cert. #** Chad Burns 2829180

05-14-11 **08/17/05** **MAINTENANCE AND REPAIR BY SOUTHERN CALIFORNIA PROPELLER SERVICE/**
Method of Compliance DNA - Not Returned to Service by company.
SB # **Date** **Next Due** N/A
Notes
Signature **Cert. #** Chad Burns 2829180

Prepared by _____ Date _____

Airworthiness Directive Compliance Record

07-26-09 **01/30/08** **PLACARD, PROPELLER BLADE SHANK REWORK/**

Method of Compliance D/N/A - Date of manufacture
SB # **Date** **Next Due** N/A
Notes
Signature **Cert. #** Chad Burns 2829180

***08-13-28** **07/17/08** **PROPELLER HUB LUBRICATION HOLES/**

Method of Compliance D/N/A - Not a left hand turning propeller.
SB # **Date** **Next Due** N/A
Notes
Signature **Cert. #** Chad Burns 2829180

Prepared by _____ Date _____

Airworthiness Directive Compliance Record

AIRCRAFT RECORDS - DO NOT DESTROY **appliances**

Company
Tail # 273DT

74-26-09 **12/24/74** **BENDIX MAGNETOS**

S-20, -200, -1200 SERIES MAGNETOS/
Method of Compliance D/N/A - Magneto p/n
SB # **Date** **Next Due** N/A
Notes
Signature **Cert. #** Chad Burns 2829180

84-02-08 **02/09/84** **SCOTT AVIATION, DIVISION OF ATO INC. OXYGEN CYLINDERS**

OXYGEN CYLINDERS/
Method of Compliance D/N/A - Date of manufacture
SB # **Date** **Next Due** N/A
Notes
Signature **Cert. #** Chad Burns 2829180

***84-26-02** **01/29/85** **INDUCTION AIR FILTERS PAPER AIR FILTERS**

PAPER INDUCTION AIR FILTERS/
Method of Compliance C/W by replacement of filter
SB # **Date** 9-9-2019 @ 1010.0 **Next Due** 1510.0
Notes p/n: 27166-001
Signature **Cert. #** Chad Burns 2829180

94-01-03 R2 **06/28/95** **BENDIX MAGNETOS**

S-20, S-200, S-600, S-1200 SERIES MAGNETOS/
Method of Compliance D/N/A - Magneto s/n
SB # **Date** **Next Due** N/A
Notes
Signature **Cert. #** Chad Burns 2829180

94-06-09 **03/09/94** **BENDIX MAGNETOS**

SC-20, SC-200, S-1200 AND ADDITIONAL MODEL MAGNETOS/
Method of Compliance D/N/A - Magneto s/n
SB # **Date** **Next Due** N/A
Notes
Signature **Cert. #** Chad Burns 2829180

***96-12-07** **07/18/96** **BENDIX MAGNETOS**

SUPERSEDED BY AD 2005-12-06/
Method of Compliance SUPERCEDED BY 2005-12-06
SB # **Date** **Next Due** N/A
Notes
Signature **Cert. #** Chad Burns 2829180

Prepared by _____ Date _____

* Indicates possible recurring inspections

Airworthiness Directive Compliance Record

***05-12-06** **07/19/05** **BENDIX**
S-20, S-1200, D-2000, D-3000
RIVETED OR SNAP-RING IMPULSE COUPLINGS WITH MODEL CHANGES/
Method of Compliance D/N/A - Lycoming engine not installed
SB # **Date** **Next Due** N/A
Notes
Signature **Cert. #** Chad Burns 2829180

11-13-03 **07/13/11** **HARTZELL ENGINE TECHNOLOGIES**
HET T, TA, TE AND TH SERIES
MACHINING DEBRIS IN TURBOCHARGER CAVITIES/
Method of Compliance D/N/A - by Foundry mark "JT" on housing
SB # **Date** **Next Due** N/A
Notes
Signature **Cert. #** Chad Burns 2829180

Prepared by _____ Date _____

Weight & Balance Change

DOUGLAS DUNCAN AVIAITON	**Make**	CIRRUS AIRCRAFT	
A&P 3384163	**Model**	SR22T	
100 TOWER DR HGR 6	**S/N**	652	
GREENVILLE, SC, 29607	**Reg. #**	N273DT	
864-350-0613	**W/O**	6095	

EQUIPMENT CHANGE - WEIGHT & BALANCE

Items: (Description / P/N / S/N)	Weight Pounds	Arm Inches	Moments Inch/Pounds
Previous Aircraft Empty Weight:	2518	140.3	353264
MLG TIRES, BRAKES AXLE (REMOVED)	-48	157.5	-7560
NOSE TIRE WHEEL AXLE (REMOVED)	-11	75	-825
INSTALLED MLG TIRES BRAKES AXLE	44.5	157.5	7008.75
INSTALLED NOSE TIRE WHEEL AXLE	9.5	75	712.5
BRAKE REGULATOR (INSTALLED)	0.25	121.4	30.35
REMOVED MASTER BRAKE CYLINDERS	-2	121.4	-242.8
INSTALLED MASTER BRAKE CYLNDERS	1.5	121.4	182.1
			0
			0
			0
			0
			0
			0
			0
			0
Totals	2512.75		352569.9

A. Old Empty Weight	2518	Pounds
B. Old Empty CG	140.3	Inches
C. Old Empty Weight CG Moment	353264	Inch/Pounds
D. Max Gross Weight	3600	Pounds
E. Old Useful Load	1091	Pounds

A. New Empty Weight	2512.75	Pounds
B. New Empty CG	140.3124	Inches
C. New Empty Weight CG Moment	352569.9	Inch/Pounds
D. Max Gross Weight	3600	Pounds
E. New Useful Load	1087.25	Pounds

This new weight & balance information superseads all previous weight and balance data.
For aircraft loading, see instructions in Weight & Balance Section of Aircraft Flight Manual.

FAA Form 337 Completed?	YES
Equipment List Amended?	YES

Authorized Signature	**Date**	**Cert#**	**Title**
DOUGLAS DUNCAN	**12/17/2014**	3384163	A & P

Notes:

U.S. Department of Transportation
Federal Aviation Administration

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

Form Approved OMB No.2120-0020 11/30/2007 | Electronic Tracking Number

For FAA Use Only

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

1. Aircraft

Nationality and Registration Mark	Serial No.	
N273DT	0652	
Make	**Model**	**Series**
Cirrus	SR22T	G5

2. Owner

Name (As shown on registration certificate): Levine Marc J.

Address (As shown on registration certificate)
Address: 11512 Trafalgar Ave
City: Lubbock State: TX
Zip: 79424-765 Country: United States

3. For FAA Use Only

4. Type		5. Unit Identification			
Repair	Alteration	Unit	Make	Model	Serial No.
☐	☒	AIRFRAME		*(As described in item 1 above)*	
☐	☐	POWERPLANT			
☐	☐	PROPELLER			
☐	☐	APPLIANCE	Type / Manufacturer		

6. Conformity Statement

A. Agency's Name and Address
Name: Daniel Mayo
Address: 511 4th Street
City: Abernathy State: TX
Zip: 79311 Country: United States

B. Kind of Agency

X	U.S. Certificated Mechanic		Manufacturer
	Foreign Certificated Mechanic	C. Certificate No.	
	Certificated Repair Station	3817553 A&P	
	Certificated Maintenance Organization		

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

Extended range fuel per 14 CFR Part 43 App. B ☐

Signature/Date of Authorized Individual: Daniel S Mayo 10/25/2017

7. Approval for Return To Service

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

BY							
	FAA Flt. Standards Inspector		Manufacturer		Maintenance Organization		Person Appoved by Canadian Department of Transport
	FAA Designee		Repair Station	X	Inspection Authorization		Other *(Specify)*

Certificate or Designation No.: 2826822 IA

Signature/Date of Authorized Individual: Arnold Hertel 10-26-2017

FAA Form 337 (10-06)

NOTICE

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

8. Description of Work Accomplished

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

N273DT Cirrus SR22T S/N:0652	10-26-2017
Nationality and Registration Mark	Date

ACFT Flight Hobbs: 649.6, ACTT: 649.6, ETT: 649.6, PTT: 649.6.

STC SA02279AT:

Removed Factory Installed LED Landing light Whelen P/N:01-0771262-00 S/N00637. Installed Lo Presti Landing light Kit, (P/N-LSM-500-082-27, Rev. R.) STC SA02279AT IAW STC installation manual, LSM-500-082, Rev. R. Peformed Landing light operational check. Operational check good. Instructions for Continued Airworthiness are found in LO Presti Installation manual LSM-500-082 Rev R., Page 36. No Change to Weight and Balance.

********** **NOTHING FOLLOWS** **********

☐ Additional Sheets Are Attached

United States of America

Department of Transportation -- Federal Aviation Administration

Supplemental Type Certificate

Number SA02279AT

This certificate issued to LoPresti Speed Mercahnts
2620 Airport North Drive
Vero Beach, Florida 32960

*certifies that the change in the type design for the following product with the limitations and conditions thereof as specified hereon meets the airworthiness requirements of Part * of the * Regulations.*

Original Product - Type Certificate Number. * See attached

Make. FAA Approved Model List (AML)

Model Document LSM-500-025 for a list of Approved Airplane Models

Description of Type Design Change.

Installation of a Boom Beam Bulb, Starter and Ballast in accordance with Master Drawing List Report Number 43, Revision F, dated 15 July 2002, or later FAA Approved Revision.

Limitations and Conditions

This approval should not be extended to other aircraft of this model on which other previously approved modifications are incorporated unless it is determined by the installer that the interrelationship between this change and any of those other previously approved modifications will produce no adverse affect upon the airworthiness of that airplane. If the holder agrees to permit another person to use this certificate to alter the product, the holder shall give the other person written evidence of that permission.

L.O.A. Required

This certificate and the supporting data which is the basis for approval shall remain in effect until surrendered, suspended, revoked or a termination date is established by the Administrator of the Federal Aviation Administration.

Date of application August 15, 2002

Date of issuance February 14, 2001

Date amended April 5, 2001; July 22, 2002, February 14, 2003

By direction of the Administrator

Eugene R. Bollin
(Signature)

for Melvin D. Taylor, Manager,
Atlanta Aircraft Certification Office

(Title)

Any alteration of this certificate is punishable by a fine not exceeding $1,000, or imprisonment not exceeding 3 years, or both.

This certificate is issued in accordance with FAR 21.47.

FAA Form 8110-2 (10-65) PAGE 1 of 1 PAGES

U.S. Department of Transportation
Federal Aviation Administration

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

Form Approved OMB No.2120-0020 11/30/2007 | Electronic Tracking Number

For FAA Use Only

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

1. Aircraft

Nationality and Registration Mark	Serial No.	
N273DT	0652	
Make	**Model**	**Series**
Cirrus	SR22T	G5

2. Owner

Name (As shown on registration certificate): Levine Marc J.

Address (As shown on registration certificate)
Address 11512 Trafalgar Ave
City Lubbock State TX
Zip 79424-765 Country United States

3. For FAA Use Only

4. Type		5. Unit Identification			
Repair	Alteration	Unit	Make	Model	Serial No.
☐	X	AIRFRAME		*(As described in item 1 above)*	
☐	☐	POWERPLANT			
☐	☐	PROPELLER			
☐	☐	APPLIANCE	Type / Manufacturer		

6. Conformity Statement

A. Agency's Name and Address
Name Daniel Mayo
Address 511 4th Street
City Abernathy State TX
Zip 79311 Country United States

B. Kind of Agency

X	U.S. Certificated Mechanic		Manufacturer
	Foreign Certificated Mechanic	C. Certificate No.	
	Certificated Repair Station	3817553 A&P	
	Certificated Maintenance Organization		

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

Extended range fuel per 14 CFR Part 43 App. B ☐

Signature/Date of Authorized Individual: Daniel S Mayo 10/25/2017

7. Approval for Return To Service

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

BY								
		FAA Flt. Standards Inspector		Manufacturer		Maintenance Organization		Person Appoved by Canadian Department of Transport
		FAA Designee		Repair Station	X	Inspection Authorization		Other *(Specify)*

Certificate or Designation No.: 2826822 IA

Signature/Date of Authorized Individual: Arnold Hertel 10-26-2017

FAA Form 337 (10-06)

NOTICE

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

8. Description of Work Accomplished

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

N273DT Cirrus SR22T S/N:0652	10-26-2017
Nationality and Registration Mark	Date

ACFT Flight Hobbs: 649.6, ACTT: 649.6, ETT: 649.6, PTT: 649.6.

STC SA02279AT:

Removed Factory Installed LED Landing light Whelen P/N:01-0771262-00 S/N00637. Installed Lo Presti Landing light Kit, (P/N-LSM-500-082-27, Rev. R.) STC SA02279AT IAW STC installation manual, LSM-500-082, Rev. R. Peformed Landing light operational check. Operational check good. Instructions for Continued Airworthiness are found in LO Presti Installation manual LSM-500-082 Rev R., Page 36. No Change to Weight and Balance.

********** **NOTHING FOLLOWS** **********

☐ Additional Sheets Are Attached

United States of America
Department of Transportation -- Federal Aviation Administration

Supplemental Type Certificate

Number SA02279AT

This certificate issued to LoPresti Speed Mercahnts
2620 Airport North Drive
Vero Beach, Florida 32960

certifies that the change in the type design for the following product with the limitations and conditions therefor as specified hereon meets the airworthiness requirements of Part * of the * Regulations.

Original Product - Type Certificate Number: * See attached

Make: FAA Approved Model List (AML)

Model: Document LSM-500-025 for a list of Approved Airplane Models

Description of Type Design Change:

Installation of a Boom Beam Bulb, Starter and Ballast in accordance with Master Drawing List Report Number 43, Revision F, dated 15 July 2002, or later FAA Approved Revision.

Limitations and Conditions:

This approval should not be extended to other aircraft of this model on which other previously approved modifications are incorporated unless it is determined by the installer that the interrelationship between this change and any of those other previously approved modifications will produce no adverse affect upon the airworthiness of that airplane. If the holder agrees to permit another person to use this certificate to alter the product, the holder shall give the other person written evidence of that permission.

This certificate and the supporting data which is the basis for approval shall remain in effect until surrendered, suspended, revoked or a termination date is established by the Administrator of the Federal Aviation Administration.

L.O.A. Required

Date issued

Date of application: August 15, 2002

Date of issuance: February 14, 2001

Date amended: April 5, 2001; July 22, 2002, February 14, 2003

By direction of the Administrator

Eugene L. Bollini
(Signature)

for Melvin D. Taylor, Manager,
Atlanta Aircraft Certification Office

(Title)

Any alteration of this certificate is punishable by a fine not exceeding $1,000, or imprisonment not exceeding 3 years, or both.

This certificate must be maintained in accordance with FAR 21.47.

FAA Form 8110-2 (10-65) PAGE 1 of 1 PAGES

U.S. Department of Transportation
Federal Aviation Administration

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

Form Approved OMB No.2120-0020 11/30/2007 | Electronic Tracking Number

For FAA Use Only

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

1. Aircraft	Nationality and Registration Mark: N273DT	Serial No.: 0652	
	Make: Cirrus	Model: SR22T	Series: G5
2. Owner	Name (As shown on registration certificate): Levine Marc J.	Address (As shown on registration certificate): Address 11512 Trafalgar Ave; City Lubbock State TX; Zip 79424-765 Country United States	

3. For FAA Use Only

4. Type		5. Unit Identification			
Repair	Alteration	Unit	Make	Model	Serial No.
☐	☒	AIRFRAME		*(As described in item 1 above)*	
☐	☐	POWERPLANT			
☐	☐	PROPELLER			
☐	☐	APPLIANCE	Type / Manufacturer		

6. Conformity Statement

A. Agency's Name and Address

Name: Daniel Mayo
Address: 511 4th Street
City: Abernathy State: TX
Zip: 79311 Country: United States

B. Kind of Agency

X	U.S. Certificated Mechanic		Manufacturer
	Foreign Certificated Mechanic	C. Certificate No.	
	Certificated Repair Station	3817553 A&P	
	Certificated Maintenance Organization		

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

Extended range fuel per 14 CFR Part 43 App. B ☐

Signature/Date of Authorized Individual: Daniel S Mayo 10/25/2017

7. Approval for Return To Service

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

BY	☐	FAA Flt. Standards Inspector	☐	Manufacturer	☐	Maintenance Organization	☐ Person Appoved by Canadian Department of Transport
	☐	FAA Designee	☐	Repair Station	X	Inspection Authorization	Other *(Specify)*

Certificate or Designation No.: 2826822 IA

Signature/Date of Authorized Individual: Arnold Hertel 10-26-2017

FAA Form 337 (10-06)

NOTICE

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

8. Description of Work Accomplished

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

N273DT Cirrus SR22T S/N:0652	10-26-2017
Nationality and Registration Mark	Date

ACFT Flight Hobbs: 649.6, ACTT: 649.6, ETT: 649.6, PTT: 649.6.

STC SA02279AT:

Removed Factory Installed LED Landing light Whelen P/N:01-0771262-00 S/N00637. Installed Lo Presti Landing light Kit, (P/N-LSM-500-082-27, Rev. R.) STC SA02279AT IAW STC installation manual, LSM-500-082, Rev. R. Peformed Landing light operational check. Operational check good. Instructions for Continued Airworthiness are found in LO Presti Installation manual LSM-500-082 Rev R., Page 36. No Change to Weight and Balance.

********** **NOTHING FOLLOWS** **********

☐ Additional Sheets Are Attached

United States of America
Department of Transportation -- Federal Aviation Administration

Supplemental Type Certificate

Number SA02279AT

This certificate issued to LoPresti Speed Mercahnts
2620 Airport North Drive
Vero Beach, Florida 32960

certifies that the change in the type design for the following product with the limitations and conditions thereof as specified hereon meets the airworthiness requirements of Part * of the * Regulations.

Original Product - Type Certificate Number: * See attached
Make: FAA Approved Model List (AML)
Model: Document LSM-500-025 for a list of Approved Airplane Models

Description of Type Design Change:

Installation of a Boom Beam Bulb, Starter and Ballast in accordance with Master Drawing List Report Number 43, Revision F, dated 15 July 2002, or later FAA Approved Revision.

Limitations and Conditions:

This approval should not be extended to other aircraft of this model on which other previously approved modifications are incorporated unless it is determined by the installer that the interrelationship between this change and any of those other previously approved modifications will produce no adverse affect upon the airworthiness of that airplane. If the holder agrees to permit another person to use this certificate to alter the product, the holder shall give the other person written evidence of that permission.

This certificate and the supporting data which is the basis for approval shall remain in effect until surrendered, suspended, revoked or a termination date is otherwise established by the Administrator of the Federal Aviation Administration.

L.O.A. Required

Date of application: August 15, 2002
Date of issuance: February 14, 2001
Date amended: April 5, 2001; July 22, 2002, February 14, 2003

By direction of the Administrator

Eugene L. Bollini
(Signature)
for Melvin D. Taylor, Manager,
Atlanta Aircraft Certification Office

(Title)

Any alteration of this certificate is punishable by a fine not exceeding $1,000, or imprisonment not exceeding 3 years, or both.

This certificate is issued in accordance with FAR 21.47.

FAA Form 8110-2 (10-80) PAGE 1 of 1 PAGES

U.S. Department of Transportation
Federal Aviation Administration

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

Form Approved OMB No. 2120-0020 11/30/2007 | Electronic Tracking Number

For FAA Use Only

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

1. Aircraft	Nationality and Registration Mark: USA N273DT	Serial No.: 0652	
	Make: CIRRUS	Model: SR22T	Series: G5
2. Owner	Name *(As shown on registration certificate)*: MAXWELL GROUP INC.	Address *(As shown on registration certificate)*: 10706 SIKES PLACE STE 200 CHARLOTTE, NC 28277 USA	

3. For FAA Use Only

4. Type		5. Unit Identification			
Repair	Alteration	Unit	Make	Model	Serial No.
☐	☒	AIRFRAME	[redacted]	*(As described in Item 1 above)*	[redacted]
☐	☐	POWERPLANT			
☐	☐	PROPELLER			
☐	☐	APPLIANCE	Type / Manufacturer		

6. Conformity Statement

A. Agency's Name and Address

B. Kind of Agency

☒	U. S. Certified Mechanic	☐	Manufacturer
☐	Foreign Certified Mechanic	C. Certificate No.	
☐	Certified Repair Station	3178678	
☐	Certified Maintenance Organization		

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

Extended range fuel per 14 CFR Part 43 App. B ☐

Signature/Date of Authorized Individual: Brian K Wendt — BRIAN KEITH WENDT — 17-December-2014

7. Approval for Return to Service

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

		FAA Flt. Standards Inspector		Manufacturer		Maintenance Organization	Persons Approved by Canadian Department of Transport
BY		FAA Designee		Repair Station	X	Inspection Authorization	Other (Specify)

Certificate or Designation No.: 3384163

Signature/Date of Authorized Individual: Douglas Duncan — DOUGLAS DUNCAN — 17-December-2014

FAA Form 337 (10-06)

NOTICE

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

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

USA N273DT	Dec-17-2014
Nationality and Registration Mark	Date

C/W INSTALLATION OF STC-004 (REV 2) SN: FO-20140404-08,INSTALTION OF THE BERINGER BRAKE SYSTEM FOR CIRRUS SR20, SR22, SR22T.
REMOVED THE FOLLOWING ITEMS.
*LT & RT TIRE, WHEEL, BRAKE, WHEEL BRAKE LINE, AXLE.
*NOSE TIRE, WHEEL, AXLE
*PILOT & COPILOT MASTER BRAKE CYLINDER
*PILOT & COPILOT BRAKE LINES FROM MASTER CYLINDERS TO PARKING BRAKE.
*REMOVED BRAKE LINES FROM BRAKE RESERVIOR TO COPILOTS MASTER CYLINDERS.

INSTALED THE FOLLOWING ITEMS:
*NLG TIRE PN: 071-311-0 (TUBLES TYPE), NLG WHEEL ASSY RA-002(A), NLG AXLE AV-CIRR-003(A), BEARING SPACER AV-CIRR-004(A), SERVICED TIRE TO 40PSI
*LT & RT MLG TIRES (SPECIALTY) 33032 WHEEL ASSY RF-006(A), BRAKE ASSY EA-003.4N(B),BANJO BOLT HYD-026C (CIRRUS PN 31490-009) FOR GARMIN BRAKE TEMP SENSOR AXLE AV-CIRR-002(A) AXLE NUT ECR-001(C),BRAKE LINES AV-CIRR-001.1, BRAKE TEMP STICKER 300 DEGREES, 51698-004 SERVICED TIRES TO 62PSI
*PILOT & COPILOT MASTER CYLINDERS MP-00132N(A), WASHER RDL-010(A), FROM MASTER CYLINDER BRAKE LINES AV-CIRR-001.4 (1 EA),BRAKE LINES AV-CIRR-001.5 (1 EA) REGULATOR, PILOT MASTER CYLINDER TO COPILOTS MASTER CYLINDER BRAKE LINES AV-CIRR-001.6 (4 EA), FROM RESERVIOR TO COPILOTS MASTER CYLINDER BRAKE LINES AV-CIRR-001.7 (1 EA)
*BRAKE REGULATOR RE-001N,FITTING ADAPTER HYD-006P, REGULATOR FIXING PLATE PTF-004(A), MOUNTING SCREWS V-CHC-012,NUT E-HN-003, BRAKE LINES BRAKE LINES AV-CIRR-001.3, BRAKE LINES AV-CIRR-001.2FROM REGULATOR TO PARKING BRAKE VALVE,
*INSTALLED MIL-PRF-87257 STICKER ON BRAKE RESIVIOR.
*BANJO BOLTS HYD-003P AS NEEDED FOR BRAKE LINE CONNECTIONS,
*FLUSHED MIL-H-5606 BRAKE SYSTEM WITH MIL-PRF-87257 (RED) BRAKE FLUID,
*PERFORMED CONDITIONING BREAK-IN PROCEDURES, CHECKED GOOD & NO LEAKS.
*PLACED TPOH 14-03 WITH THE CHANGES FOR THE BERINGER BRAKES SYSTEM.
*SEE MAINTENANCE AND OVERHAUL MANUAL MM-STC-004 REV 2 DATE 01/20/2014 FOR ICA'S
WEIGHT & BALANCE LESS THAN 2 POUNDS CHANGE NEW BALANCE PLACED IN POH.
----------LAST ITEM----------

☐ ADDITIONAL SHEETS ARE ATTACHED

United States of America

Department of Transportation -- Federal Aviation Administration

Supplemental Type Certificate

(Continuation Sheet)

Number **SA03372NY**

Date of Issuance: February 25, 2014

Limitations and Conditions: (Continued)

2. If the holder agrees to permit another person to use the certification to alter a product, the holder must give the other person written evidence of that permission.
3. Mandatory replacement time and/or inspection intervals are defined in the approved "Airworthiness Limitations" section of Beringer Aero Maintainance and Overhaul Manual document MM-STC-004, revision 2, dated January 20, 2014, or later EASA approved revision.

.....**END**.....

United States of America

Department of Transportation -- Federal Aviation Administration

Supplemental Type Certificate

IMPORT

Number SA03372NY

This certificate issued to Beringer Aero
Aeropole
05130 Tallard
France

certifies that the change in the type design for the following product with the limitations and conditions therefore as specified hereon meets the airworthiness requirements of Part 23 *of the* Federal Aviation *Regulations.*

Original Product Type Certificate Number: Cirrus Design Corportation

Make: A00009CH

Model: SR20, SR22, SR22T

Description of Type Design Change:

1. Installation of RF-006(A) main wheel well and RA-002(A) nose wheel well with EA-003.4N(B) brake system in accordance with, EASA approved, Dossier De Modification, DM-STC-004, Revision 2, dated July 16, 2013, or later EASA approved revisions.
2. The following Beringer Aero document are required with this installation:
   a. Aircraft is to be maintained in accordance with, EASA Approved, Maintenance and Overhaul Manual, MM-STC-004, Revision 2, dated January 20, 2014, or later EASA accepted revisions.

Limitations and Conditions:

1. The installer must determine whether this design change is compatible with previously approved modifications.

(See Continuation Sheet 3 of 3)

This certificate and the supporting data which is the basis for approval shall remain in effect until surrendered, suspended, revoked or a termination date is otherwise established by the Administrator of the Federal Aviation Administration.

Date of application: February 22, 2013

Date of issuance: February 25, 2014

Date reissued:

Date amended:

By direction of the Administrator

FEDERAL AVIATION ADMINISTRATION

FOR (Signature)

Gaetano Sciortino
Manager
New York Aircraft Certification Office

(Title)

Any alteration of this certificate is punishable by a fine of not exceeding $1,000, or imprisonment not exceeding 3 years, or both.

This certificate may be transferred in accordance with FAR 21.47.

US Department of Transportation
Federal Aviation Administration

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

Form Approved OMB No. 2120-0020 2/28/2011 | Electronic Tracking Number

For FAA Use Only

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

1. Aircraft

Nationality and Registration Mark	Serial No.	
N273DT	0652	
Make	**Model**	**Series**
Cirrus	SR22T	

2. Owner

Name *(As shown on registration certificate)*	Address *(As shown on registration certificate)*
Whiskey Girl, LLC.	Address 55 W. Franklin St. City Tucson State AZ Zip 85701 Country USA

3. For FAA Use Only

4. Type		5. Unit Identification			
Repair	Alteration	Unit	Make	Model	Serial No.
☐	☐	AIRFRAME	———	*(As described in Item 1 above)*	———
☐	☑	POWERPLANT	Continental	TSIO-550-K	1009240
☐	☐	PROPELLER			
☐	☐	APPLIANCE	Type / Manufacturer		

6. Conformity Statement

A. Agency's Name and Address	B. Kind of Agency			
Name Glendale Aero Services	✓	U. S. Certificated Mechanic		Manufacturer
Address 6841 N. Glen Harbor Blvd.		Foreign Certificated Mechanic	C. Certificate No.	
City Glendale State AZ		Certificated Repair Station	3546789 A&P	
Zip 85307 Country USA		Certificated Maintenance Organization		

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

Extended range fuel per 14 CFR Part 43 App. B	Signature/Date of Authorized Individual
☐	Ron Scarborough 4/21/2017

7. Approval for Return to Service

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

BY								
	☐	FAA Flt. Standards Inspector	☐	Manufacturer	☐	Maintenance Organization	☐	Persons Approved by Canadian Department of Transport
	☐	FAA Designee	☐	Repair Station	X	Inspection Authorization		Other *(Specify)*

Certificate or Designation No.	Signature/Date of Authorized Individual
2734397 IA	John Fisher 4/21/2017

FAA Form 337 (10-06)

NOTICE

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

N273DT	4/21/2017
Nationality and Registration Mark	Date

8. Description of Work Accomplished

Removed 6 ea. Continental fuel nozzles and installed General Aviation Modifications, Inc. GAMIjectors kit No. TIGT550-19C s/n 26325 STC No. SE09963SC PMA No. PQ821SW per GAMIjectors Installation Procedure No. IP-2001-02 (Rev NC) dated May 25, 2001. No change in weight and balance. A record entry confroming to 14 CFR 43.9 dated 4/25/2017 has been entered in the aircraft logs detailing this installation.

---------- END ----------

[ ] Additional Sheets Are Attached

See the following Continental Sevice Bulletins for further information: M78-11 Fuel Injection System Inspection, M85-19 Fuel Injection System Application Guide, M987-12 Rev. 1 Recommended Fuel and Oil Grades, M89-10 Fuel System Ajustment, and M890-18 EGT Recommendations, or as they may be revised from time to time. A copy of each of those service bulletins should be found in the shipping box containing the *turboGAMIjectors*®. If not, contact GAMI.

10. Complete and submit a Form 337 for the aircraft, referencing installation of the General Aviation Modifications, Inc., Kit Number and this STC No. SE09963SC. There is no change in weight and balance.

Instructions for Continued Airworthiness and Overhaul & Maintenance Procedure:

1) On condition. When there is an abnormal EGT indictation, the nozzle from the affected cylinder should be investigated to determine if it is plugged. A visual examination of the small nozzle oriface by holding the nozzle to a bright light should be performed. Any indication of any irregularity in the oriface or plugging should be corrected as described in 2), below.

2) At 100 hour or annual inspection the nozzles should be cleaned (soaked, one hour) with Gunk® Carburetor Parts Cleaner or Hoppe's® #9 Gun Solvent followed by blowing off with shop air. Perform a visual inspection as in 1), above. Do NOT insert any object in the nozzle for any reason. If any visible obstruction persists or the nozzle does not perform correctly, after this inspection, the affected nozzle and all other nozzles in the set of nozzles, must be retruned to GAMI for service, or to a service facility approved by GAMI.

3) Overhaul or Major Engine Work: Within 25 hours after overhaul or major engine work in which one or more cylinders are replaced, or during which the induction system is dismantled, and subsequent return to service of the engine, new data should be obtained in accordance with the GAMI Lean Test for engines that have nozzles that have been specified based on EGT data. In the event the "Spread" in total engine fuel flow (TEFF) measured during the new GAMI Lean Test (comparing the TEFF when the first cylinder reaches peak EGT and when the last cylinder reaches peak EGT) exceeds 0.6 gph, then the nozzles along with the lean test results should be returned to GAMI (or a service facility authorized by GAMI) for service and recalibration and then re-installed in the engine in accordance with this installation procedure.

General Aviation Modifications, Inc.
Installation Procedure, No. IP-2001-02
(Rev. NC)
Date: March 25, 2001

GAMI Kit No: **TIGT550-19C**
SN: **26325**

turboGAMIjector® Installation Procedure for Turbocharged Continental Engines with "Tuned" Induction

STC No. SE09963SC

1. Remove existing Continental fuel injector nozzle assemblies by disconnecting fuel and air lines at the top with an appropriate wrench. Remove the air lines surrounding each nozzle. Remove the nozzles with a 7/16 or 1/2 inch deep socket.

2. Refer to the number code (1-4 or 1-6 for 4 or 6 cylinder engines accordingly) stamped on each nozzle for placement in corresponding cylinder number. (Note: Nozzles are stamped with both number and letter codes). Cylinders are numbered from rear to front with odd numbered cylinders on the right side.

3. Apply a small amount of "anti-seize" compound to the threads on the injectors and install appropriate *turboGAMIjector*® nozzle in each cylinder and tighten to 55 in-lb. Check to see that the O-Rings are properly installed in the grooves in the nozzles.

4. Reconnect and tighten the fuel and air lines at the top of the *turboGAMIjector*® nozzles.

5. Check installation for crimped lines, loose fittings, etc.

6. Leak check the *turboGAMIjector*® nozzles and associated fuel lines by use of the electric fuel pump, prior to starting the engine. Perform a ground engine run-up and recheck for fuel leaks before flight.

7. Clean a flat 1.5" X 2" area on each cylinder rocker arm cover with acetone or isopropyl alcohol. Apply the correct *turboGAMIjector*® label to the cleaned area with high temperature RTV silicone, such as Permatex "Ultra Copper" P/N101B or equivalent. Allow to cure, thoroughly, prior to operation of the engine. Remove the backing from each fuel line label. Locate the middle of each tag against its corresponding fuel line approximately 5" from the injector nozzle and wrap the label around the fuel line doubling it over onto itself as a tag.

8. Check to insure that the *turboGAMIjectors*® labels have been installed on the proper cylinder and fuel line and that the *turboGAMIjector*® part number in each cylinder corresponds with the part number called out on the labels affixed to its respective cylinder head rocker arm cover and fuel line.

9. This STC does not require alteration of the fuel system metered or un-metered fuel pressures or other re-calibration of the fuel system. In connection with this STC, no further alteration of the fuel system, other than compliance with appropriate Continental Service Bulletins, airworthiness directives, or compatible STC's is authorized.

General Aviation Modifications, Inc.

2800 Airport Road - Hangar A
Ada, OK 74820
580-436-4833
www.gami.com comments@gami.com

MANUFACTURER RELEASE CERTIFICATE **KIT NO. TIGT550-19C**

Product Name: ***turboGAMIjectors®***
Fuel Injection Nozzles

STC No. **SE09963SC**
FAA-PMA

P/N:	19C E	Qty.	1	Installation Location Cylinder:	1
P/N:	19C E	Qty.	1	Installation Location Cylinder:	2
P/N:	19C E	Qty.	1	Installation Location Cylinder:	3
P/N:	19C E	Qty.	1	Installation Location Cylinder:	4
P/N:	19C E	Qty.	1	Installation Location Cylinder:	5
P/N:	19C E	Qty.	1	Installation Location Cylinder:	6

Applicable to:

Engine Manufacturer: **Continental Motors**

Engine Model: **TSIO-550-K**

turboGAMIjectors® Kit No: **TIGT550-19C** S/N: **26325**

THE AERONAUTICAL PRODUCT DESCRIBED HEREON CONFORMS TO APPROVED TYPE DESIGN AND IS IN A CONDITION FOR SAFE OPERATION

Ian Weddle Date: 10-Apr-2017

GAMI AUTHORIZED INSPECTOR

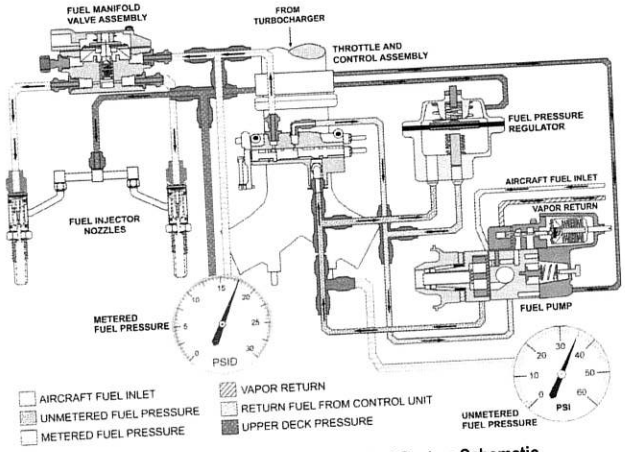

Figure 17. Typical Turbo-Charged Fuel System Schematic (with Fuel Control Unit and Fuel Regulator)

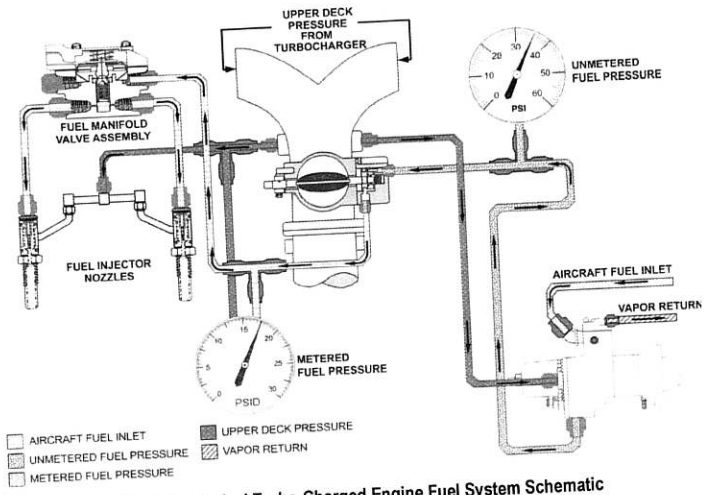

Figure 18. Typical Turbo-Charged Engine Fuel System Schematic (Fuel Pump w/Integral Mixture Control)

OPERATIONAL CHECK FORM

Date | Location: | Elevation: | OAT | Field In. Hg

Aircraft Make & Model: | Aircraft Registration #: | Engine Position: Left Right Front Rear

Engine Model: | Engine Total Time - New - Overhaul

Engine Serial Number:

FUEL SYSTEM ADJUSTMENT (Record engine specifications and actual gauge indications)

*The IDLE MIXTURE RISE is consistent for most engines (25-50 RPM) except for the IO-240-B (50-75 RPM)

Fuel Pressure										Fuel Flow				EGT	TIT	Cylinder Head Temperature °F						Oil				Adjustment (# of turns)	
R.P.M.		M.A.P.		Unmetered		Metered		Fuel Flow		EGT	TIT	1	2	3	4	5	6	PSI	°F	CW	CCW
Spec	Actual	Spec	Actual	Spec	Actual	Spec	Actual	Spec	Actual	°F	°F										

FLIGHT TEST DATA (Record gauge indications)

R.P.M.		M.A.P. (Set altimeter to 29.92 In. Hg)		Fuel Flow		EGT °F		TIT °F		CHT °F		Oil PSI		Oil Temp. °F		I.A.S. (knots)
Spec	Actual	Spec	Actual	Spec	Actual	Spec	Actual	Spec	Actual	Spec	Actual	Spec	Actual	Spec	Actual	

Remarks: (Record IDLE MIXTURE RISE, magneto drop, etc.)

Signature

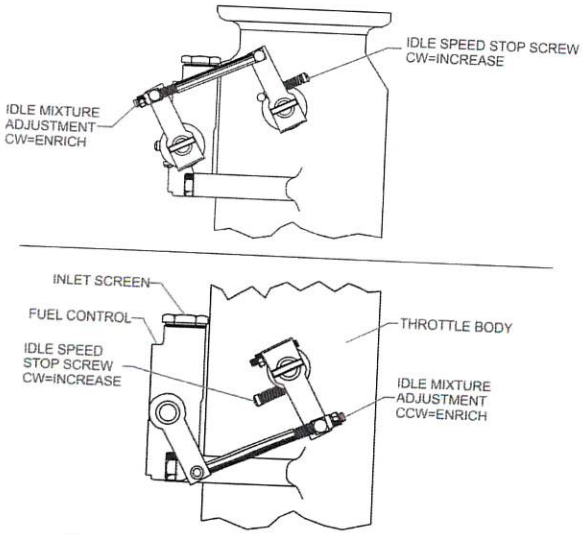

Figure 13. Throttle and Control Assembly, Side View (various orientations)

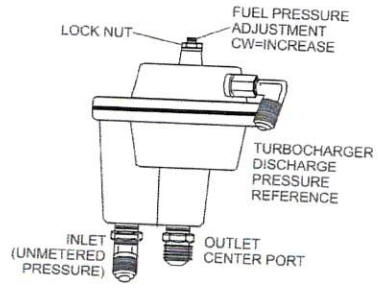

Figure 14. Fuel Pressure Regulator, Turbocharged Engine

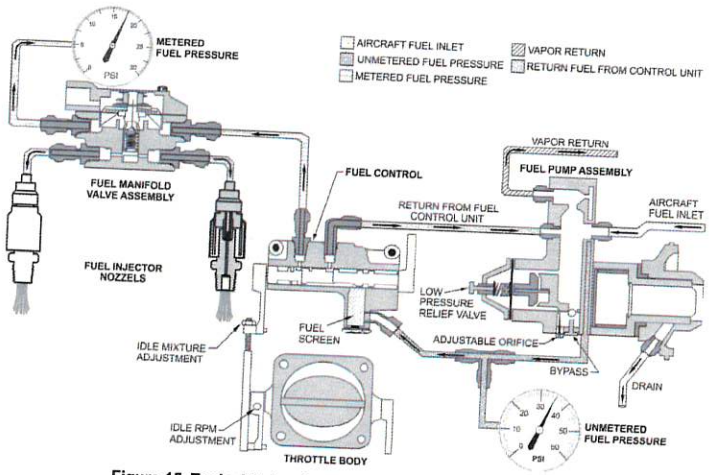

Figure 15. Typical Naturally Aspirated Fuel System Schematic (with Fuel Control Unit)

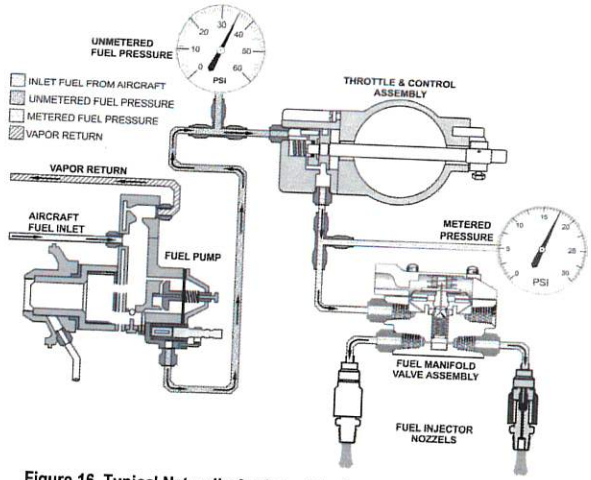

Figure 16. Typical Naturally Aspirated Engine Fuel System Schematic (Fuel Pump w/Integral Mixture Control)

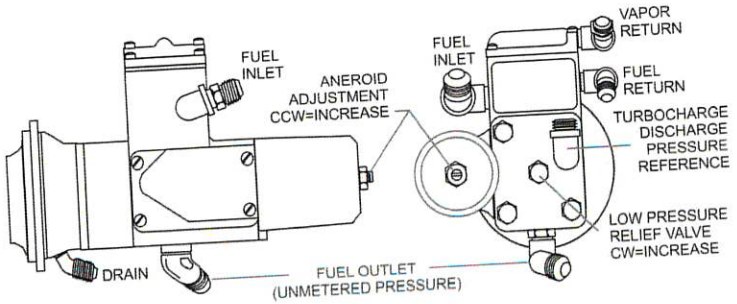

Figure 9. Aneroid Equipped Fuel Pump, Turbocharged Engine

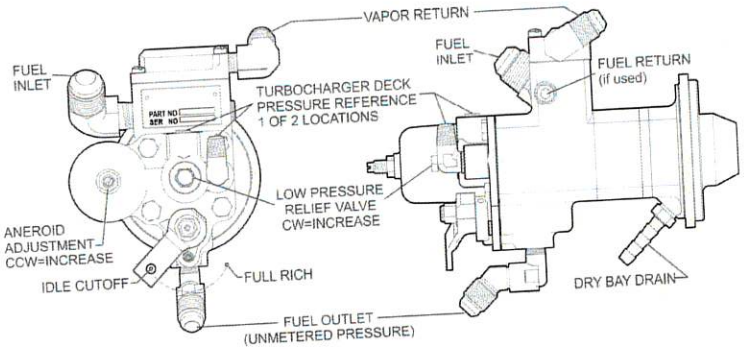

Figure 10. Aneroid and Mixture Control Equipped Fuel Pump, Turbocharged Engine

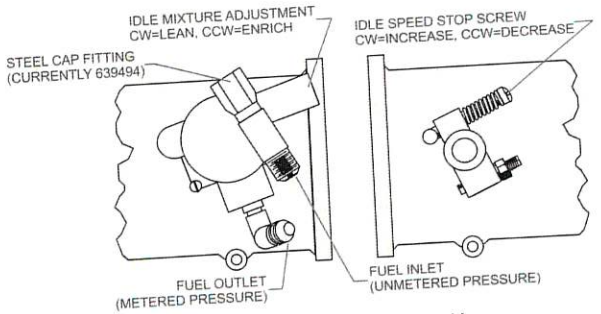

Figure 11. Throttle and Metering Assembly

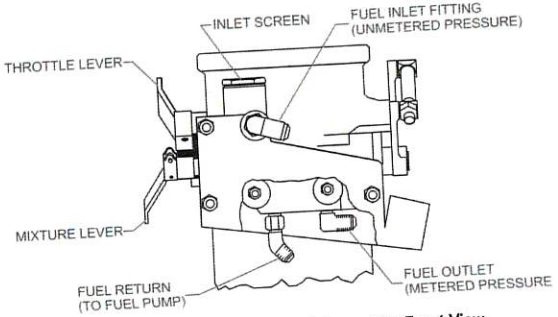

Figure 12. Throttle and Control Assembly, Front View

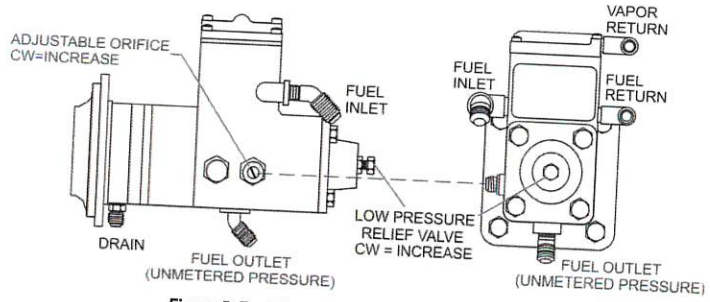

Figure 5. Fuel Pump, Naturally Aspirated Engine

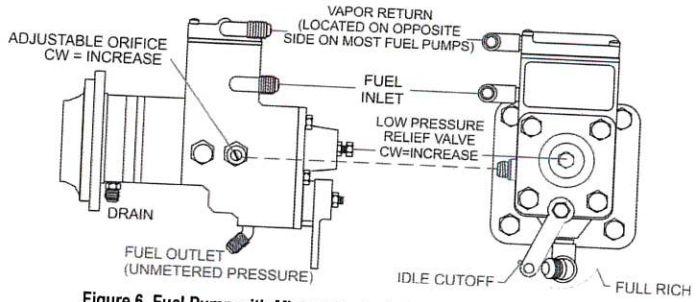

Figure 6. Fuel Pump with Mixture Control, Naturally Aspirated Engine

NOTE: The adjustable orifice screw is a tapered needle and may become damaged if forced against its seat. This adjustment should move freely. Do not continue adjustments if rotational resistance increases suddenly.

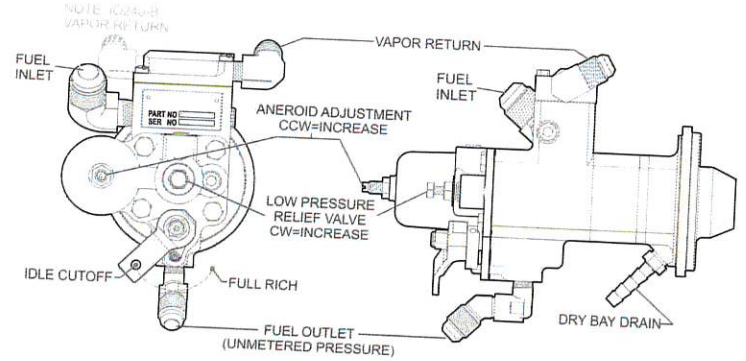

Figure 7. Altitude Compensating Fuel Pump (Auto-Lean), Naturally Aspirated Engine (without adjustable orifice)

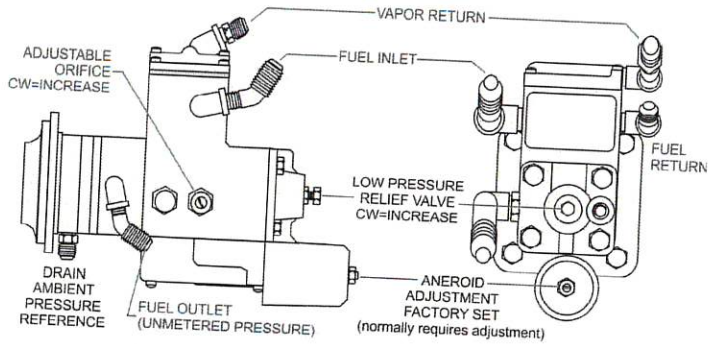

Figure 8. Altitude Compensating Fuel Pump (Auto-Lean), Naturally Aspirated Engine (with adjustable orifice)

NOTE: The adjustable orifice screw is a tapered needle and may become damaged if forced against its seat. This adjustment should move freely. Do not continue adjustments if rotational resistance increases suddenly.

Table 4. IO240-A, B Without Altitude Compensating (Aneroid Equipped) Pump
FULL THROTTLE STATIC RPM METERED FUEL PRESSURE SPECIFICATIONS

Full Throttle Static Engine RPM	Nominal Metered Fuel Pressure (allowed variation ±0.3	Full Throttle Static Engine RPM	Nominal Metered Fuel Pressure (allowed variation ±0.3
1800	7.8	2150	9.6
1850	8.1	2200	9.9
1900	8.3	2250	10.2
1950	8.6	2300	10.5
2000	8.8	2350	10.8
2050	9.1	2400	11.2
2100	9.4		

Table 5. IO550-D, E, F, & L Engine Altitude Fuel Schedule
FULL THROTTLE, FULL RICH MIXTURE 300 BHP @ 2700 RPM

Pressure Altitude (Set Altimeter at 29.92 in. Hg.)	Fuel Flow (lbs/hr)		Fuel Flow (gals/hr)		Metered Fuel Pressure PSID	
	Min.	Max.	Min.	Max.	Min.	Max.
Sea Level	143	155	24.4	26.4	17.2	20.0
1,000	142.5	154.5	24.3	26.3	17.1	19.9
2,000	142	154	24.2	26.2	17.0	19.8
3,000	141	153	24.0	26.1	16.9	19.6
4,000	139	151	23.7	25.7	16.5	19.2
5,000	136	148	23.2	25.2	16.0	18.7
6,000	133	145	22.6	24.7	15.5	18.2
8,000	124	136	21.1	23.2	14.0	16.6
10,000	114	126	19.4	21.5	12.5	15.0
12,000	107	119	18.2	20.3	11.5	13.9
14,000	102	114	17.4	19.4	10.8	13.1

Gasoline = 5.87 lbs per gallon @ 70° F.

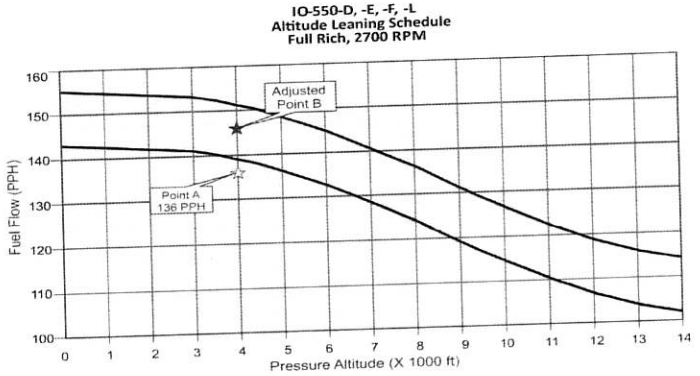

Figure 4. IO550-D, E, F & L Altitude Leaning Schedule

NOTE: Rotating the aneroid adjustment screw (increase/decrease) corrects the altitude offset in the altitude leaning schedule.

Table 3. Fuel System Adjustment Values

Idle and FULL POWER Fuel Pressures and Flows						
Engine[1]	Prop. RPM	Manifold Absolute Pressure (MAP)	Unmetered Pump PSI[2]	Metered Nozzle PSI[3]	Fuel (lbs/hr)[4]	Fuel (gal/hr)[4]
IO-470-VO	600 2625	-	6.5 - 7.5 28.8 - 31.0	- 17.8 - 18.8	- 132 - 137.5	- 22.5 - 23.4
GIO-470-A	450 2400	-	9.0 - 11.0 26.0 - 28.0	- 15.5 - 16.5	- 145 - 155	- 24.7 - 26.4
TSIO-470-B, C, D	600 2600	35.0	5.5 - 6.0 28.0 - 30.0	- 15.0 - 17.0	- 145 - 155	- 24.7 - 26.4
IO-520-A, J	600 2700	-	9.0 - 11.0 29.0 - 32.0	- 15.9 - 18.2	- 136 - 146	- 23.2 - 24.9
IO-520-B, BA, BB C, CB	600 2700	-	9.0 - 11.0 28.0 - 31.0	- 14.9 - 17.2	- 136 - 146	- 23.2 - 24.9
IO-520-D, F, J, K, L	600 2850	-	9.0 - 11.0 30.0 - 33.0	- 17.0 - 19.4	- 143 - 153	- 24.4 - 26.1
IO-520-E	600 2850	-	9.0 - 11.0 29.0 - 32.0	- 16.1 - 18.3	- 143 - 153	- 24.4 - 26.1
IO-520-M, MB	600 2700	-	6.0 - 7.0 29.0 - 32.0	- 16.7 - 19.3	- 136 - 146	- 23.2 - 24.9
IO-520-P, LIO-520-P	600 2500	-	6.0 - 7.0 26.2 - 26.9	- 14.3 - 16.2	- 130 - 140	- 22.1 - 23.9
L/TSIO-520-AE	600 2400	32.5	7.5 - 8.5 34.5 - 38.0	- 15.2 - 16.5	- 160 - 165	- 27.3 - 28.1
TSIO-520-AF	600 2700	35.5	5.5 - 6.5 35.0 - 39.0	- 18.4 - 19.9	- 180 - 186	- 30.7 - 31.7
TSIO-520-B, BB	600 2700	32.0	5.5 - 7.0 29.0 - 32.0	- 16.0 - 17.9	- 165 - 175	- 28.1 - 29.8
TSIO-520-BE	600 2600	38.0	5.5 - 7.0 25.0 - 28.0	- 12.7 - 14.1	- 214 - 224	- 36.5 - 38.2
TSIO-520-C, H	600 2700	32.5	5.5 - 7.0 29.0 - 32.0	- 15.3 - 17.2	- 160 - 170	- 27.3 - 29.0
TSIO-520-CE	600 2700	37.0	5.5 - 6.5 33.0 - 36.0	- 16.2 - 18.0	- 215 - 225	- 36.6 - 38.3
TSIO-520-D, DB	600 2700	32.5	5.5 - 7.0 29.0 - 32.0	- 13.3 - 15.1	- 160 - 170	- 27.3 - 29.0
TSIO-520-E, EB	600 2700	34.5	5.5 - 6.5 31.0 - 34.0	- 15.6 - 17.7	- 175 - 185	- 29.8 - 31.5
TSIO-520-G	600 2700	35.0	5.5 - 6.5 31.0 - 34.0	- 15.8 - 17.6	- 181 - 191	- 30.8 - 32.5
TSIO-520-J, JB	600 2700	36.0	5.5 - 6.5 31.0 - 34.0	- 16.9 - 18.7	- 170 - 178	- 29.0 - 30.3
TSIO-520-K, KB	600 2700	33.0	5.5 - 7.0 29.0 - 32.0	- 15.1 - 17.4	- 163 - 175	- 27.8 - 29.8
TSIO-520-L, LB	600 2700	38.0	25 Minimum 45.0 - 55.0	- MFG[6]	- 180 - 190	- 30.7 - 32.4
TSIO-520-M, R	600 2700	36.5	5.5 - 6.5 33.0 - 37.0	- 16.9 - 19.9	- 170 - 186	- 29.0 - 31.7
TSIO-520-N, NB	600 2700	38.0	5.5 - 6.5 32.0 - 35.0	- 16.9 - 19.9	- 170 - 186	- 28.9 - 31.7

Table 3. Fuel System Adjustment Values

Idle and FULL POWER Fuel Pressures and Flows						
Engine[1]	Prop. RPM	Manifold Absolute Pressure (MAP)	Unmetered Pump PSI[2]	Metered Nozzle PSI[3]	Fuel (lbs/hr)[4]	Fuel (gal/hr)[4]
TSIO-520-P	600 2700	36.5	5.5 - 6.5 33.0 - 37.0	- 18.4 - 19.9	- 180 - 186	- 30.7 - 31.7
TSIO-520-T	600 2700	39.5	5.5 - 6.5 33.0 - 37.0	- 16.3 - 18.1	- 185 - 195	- 31.5 - 33.2
TSIO-520-UB	600 2700	36.0	5.5 - 6.5 33.0 - 37.0	- 14.4 - 16.0	- 195 - 205	- 33.2 - 34.9
TSIO-520-VB	600 2700	40.5	5.6 - 6.5 36.0 - 39.5	- 16.9 - 18.7	- 200 - 210	- 34.1- 35.8
TSIO-520-WB	600 2700	39.5	25 Minimum 45.0 - 55.0	- MFG[7]	- 190 - 200	- 32.4 - 34.1
GTSIO-520-C	525 2400	34.5	4.0 - 7.0 30.0 - 33.0	- 16.5 - 17.5	- 215 - 225	- 36.6 - 38.3
GTSIO-520-D, H	467 2267	39.5	4.0 - 7.0 30.5 - 35.0	- 15.7 - 17.3	- 250 - 260	- 42.6 - 44.3
GTSIO-520-F, K[7]	600 2267	44.5	6.75 - 7.25 38.0 - 41.0	- 17.4 - 18.8	- 300 - 310	- 51.1 - 52.8
GTSIO-520-L, N[7] GTSIO-520-M	467 2234	39.0 40.0	4.0 - 7.0 29.5 - 35.0	- 16.4 - 17.9	- 255 - 265	- 43.4 - 45.1
IO-550-A, B, C, G, N, P, R	See Maintenance and Overhaul Manual M-16					
IO-550-D, E, F, L	600 2700	-	8.0 - 10.0 32.0 - 36.0	- 17.2 - 20.0	- 143 - 155	- 24.4 - 26.4
GIO-550-A	600 2267	-	25 Minimum 45 - 55	- MFG[7]	- 175 - 185	- 29.8 - 31.5
TSIO-550-B, C, E, G, K, N	See Maintenance and Overhaul Manual M-18					
TSIO-550-G MOONEY[8]	600 2500	33.5	7.0-9.0 20.0-23.0	- 10.4-11.6	- 177-180	- 30.0-30.7
TSIOL-550-A	600 2600	35.0	5.5 - 6.5 32.5 - 35.5	- 17.0 - 19.0	- 170 - 180	- 29.0 - 30.7
TSIOL-550-B	600 2700	35.0	6.0 - 8.0 36.0 - 40.0	- 20.0 - 22.5	- 175 - 185	- 29.8 - 31.5
TSIOL-550-C	600 2600	39.5	6.0 - 8.0 37.0 - 40.0	- 15.0 – 16.5	- 204 - 216	- 34.8 – 36.8
6-285 (TIARA)	See latest revision of Continental Motors Service Bulletin M79-4.					

1. The setup procedures contained in this bulletin are only for use on engines that have not been modified from their original configuration as shipped from the factory by Continental Motors Engines which have been modified by the installation of aftermarket components such as turbo-normalizing systems, turbocharging systems, intercoolers, after-coolers, fuel nozzles, etc., whether by STC or field approval, must use the instructions provided by the STC holder or installer. CM will not accept responsibility or liability for any modified engine set up according to the instructions contained in this Service Information Directive.
2. FULL POWER unmetered fuel pump pressure limits are provided for reference only. Use metered fuel pressure specifications for adjustments at full power.
3. Use for full power, maximum RPM adjustment only. All other parameters for reference only, Footnote 2 applies.
4. May be determined using a calibrated in-line flow measuring device. Otherwise use metered fuel pressure specifications. Refer to Aircraft Manufacturer's Maintenance and Overhaul Manual for method of verifying accuracy of fuel flow indicator.
5. Refer to the aircraft manufacturer's instructions for adjustment procedures.
6. Refer to the aircraft manufacturer's instructions for adjustment procedures.
7. Refer to the aircraft manufacturer's instructions for adjustment procedures.
8. TSIO550-G installed in Mooney aircraft has been rated to a power level that is less than the approved Type Certificate Data Sheet. Refer to the Mooney Aircraft Maintenance and Overhaul Manual for setup instructions.

7. Once the adjustments are complete, remove the test equipment in accordance with Section E.
8. Perform a flight check according to instructions in Section F.
9. Repeat procedures until the engine's fuel injection system meets all specifications.

Table 1. Hose End and Cap Fitting Torque Specifications

Brass or Aluminum End Fittings/Caps[1]	
Hose Size	Torque (inch lbs.)
#2 (.31x24)	50 – 80
#3 (.38x24)	70 – 105
#4 (.4375x20)	100 – 140
#5 (.500x20)	130 – 180
#6 (.5625x18)	150 – 195
#8 (.750x16)	270 – 350
#10 (.875x14)	360 – 430
#12 (1.063x12)	460 – 550

Steel Hose End Fittings/Caps[1]	
Hose Size	Torque (inch lbs.)
#2 (.31x24)	75 – 120
#3 (.38x24)	95 – 140
#4 (.4375x20)	135 – 190
#5 (.500x20)	170 – 240
#6 (.5625x18)	215 – 280
#8 (.750x16)	470 – 550
#10 (.875x14)	620 – 745
#12 (1.063x12)	855 – 1055

1. Reference Service Information Letter SIL95-5 for information specific to hose and tubing installation.

Table 2. Static Ground Setup Compensation

Metered Pressure vs. RPM @ 70°F Fuel Temperature[1]			
		Corrected Metered Pressure (Metered Pressure x Correction Factor)	
Static Engine RPM	Correction Factor	Minimum	Maximum
Rated RPM	1		
-20	0.991		
-40	0.982		
-60	0.973		
-80	0.964		
-100	0.955		
-120	0.946		

1. All values are approximate. Variations may occur due to specific engine and installation configurations.

IO520-BB Example: Maximum Rated RPM = 2700, Metered Fuel Pressure Range = 14.9 - 17.2. If the maximum static engine RPM = 2640, (-60 RPM); *use the Correction Factor of* **0.973**

The corrected minimum metered pressure limit @ 2640 RPM is 14.9 x 0.973 = **14.5**
The corrected maximum metered pressure limit @ 2640 RPM is 17.2 x 0.973 = **16.7**
The formula is: *Metered Fuel Pressure Limits x Correction Factor = Corrected Metered Pressure Limits @ Static Engine RPM:*

H. ADJUSTMENT SPECIFICATIONS

Table 3. Fuel System Adjustment Values

Idle and FULL POWER Fuel Pressures and Flows						
Engine[1]	Prop. RPM	Manifold Absolute Pressure (MAP)	Unmetered Pump PSI[2]	Metered Nozzle PSI[3]	Fuel (lbs/hr)[4]	Fuel (gal/hr)[4]
IO-240-A, B	1000 Table 4	29.5 Table 4	9.4- 9.8 Table 4	- Table 4	- -	- -
IO-346-A, B	600 2700	-	7.0 - 7.5 19.0 - 21.0	- 12.5 - 14.0	- 78 - 85	- 13.3 - 14.5
IO-360-A, AB, AF, C CB, D, DB, ES (ES CIRRUS), G, GB, H, HB, J, JB, K, KB	See Maintenance and Overhaul Manual M-7					
TSIO-360-A, AB	600 2800	32.0	6.5- 7.5 27.2 - 31.2	- 15.8 - 16.7	- 119 - 124	- 20.1 - 21.0
TSIO-360-B, BB	600 2800	32.0	6.5 - 7.5 27.2 - 31.2	- 15.8 - 16.7	- 115 - 124	- 20.1 - 21.0
TSIO-360-C, CB	600 2800	37.0	6.5 - 7.5 34.0 - 37.0	- 16.7 - 19.3	- 135 - 145	- 23.0 - 24.7
TSIO-360-D, DB	600 2800	36.0	6.5 - 7.5 34.0 - 37.0	- 16.7 - 19.3	- 135 - 145	- 23.0 - 24.7
L/TSIO-360-E, EB	700 2575	40.0	6.25 - 6.75 43.0 - 46.0	- 15.8 - 18.3	- 130 - 140	- 22.1 - 23.8
TSIO-360-F, FB	700 2575	41.0	6.25 - 6.75 40.0 - 43.0	- 15.8 - 18.3	- 130 - 140	- 22.1 - 23.8
TSIO-360-G, GB	700 2700	40.0	6.25 - 6.75 45.0 - 49.0	- 16.7 - 19.3	- 135 - 145	- 23.0 - 24.7
TSIO-360-H, HB	600 2800	34.5	6.5 - 7.5 29.0 - 33.0	- 14.9 - 17.3	- 125 - 135	- 21.3 - 23.0
TSIO-360-JB	600 2800	37.0	6.5 - 7.5 34.5 - 37.5	- 16.7 - 19.3	- 134 - 145	- 22.8 - 24.7
L/TSIO-360-KB	700 2800	40.0	6.5 - 7.5 36.0 - 39.0	- 17.7 - 21.2	- 140 - 155	- 23.8 - 26.4
TSIO-360-LB	700 2700	40.0	6.25 - 6.75 34.0 - 38.0	- 14.7 - 16.7	- 135 - 145	- 23.0 - 24.7
TSIO-360-MB	700 2700	36.0	6.25 - 6.75 28.0 - 32.0	- 13.6 - 15.3	- 125 - 135	- 21.3 - 23.0
L/TSIO-360-RB	700 2600	38.0	25 Minimum 35.0 - 45.0	MFG[5] -	- 140 - 150	- 23.3 - 25.5
TSIO-360-SB	700 2600	39.0	6.25 - 6.75 31 - 36	- 15.1 - 17.8	- 131 - 151	- 22.3 - 25.7
O-470-GCI	600 2600	-	9.0 - 11.0 23.8 - 25.3	- 14.7 - 16.9	- 122 - 129	- 20.8 - 22.0
IO-470-C, G, P, R	600 2600	-	9.0 - 11.0 24.7 - 27.7	- 14.8 - 17.3	- 123 - 130	- 21.0 - 22.1
IO-470-D, E, F, H, L, M, N, S, U	600 2625	-	9.0 - 11.0 25.0 - 28.0	- 15.0 - 17.5	- 124 - 131	- 21.1 - 22.3
IO-470-J, K	600 2600	-	5.5 - 7.0 24.7 - 27.7	- 14.8 - 17.3	- 123 - 130	- 21.0 - 22.1
IO-470-V	600 2625	-	6.5 - 7.5 28.3 - 29.8	- 17.8 - 18.8	- 123.5 - 131	- 21.0 - 22.3

G. FUEL PUMP AUTO-LEAN SCHEDULE ADJUSTMENT

NOTE: On IO550-D, E, F and L model engines, do not attempt to adjust the auto-leaning schedule if the aircraft is at a field with an altitude greater than 3000 feet.

Refer to Section A of this document for required test equipment setup.

1. If not previously accomplished, adjust the engine fuel injection system according to instructions in Section D of this document using the appropriate table for the engine and aircraft.
2. Adjustments to the altitude compensating fuel pump aneroid adjustment screw will result in a change to the auto-leaning schedule (see Figure 7 through Figure 9). One complete revolution of the aneroid adjustment screw will increase or decrease the auto-leaning schedule approximately 1000 feet. Make adjustment in **small increments** to avoid drastic changes to fuel pump operating characteristics.
3. The altitude compensating fuel pump auto-leaning schedule is a function of the aneroid adjustment screw (see Figure 8). This adjustment properly positions the bellows/rod in the variable orifice housing.
   a. Refer to the CM M-7, "Maintenance and Overhaul Manual" for the auto-leaning schedule adjustments on all IO360 engines

      CAUTION: The aneroid adjustment screw has an extra fine thread; exceeding the jam nut torque will damage either the adjustable aneroid stem or housing threads. Jam nut torque value is 25-30 inch pounds.

   b. For all IO550-D, E, F, & L Altitude Leaning Schedules refer to Figure 4. Adjustment of the aneroid adjustment screw clockwise will decrease the altitude (moves horizontally to the left on the chart) while counterclockwise adjustment will increase the altitude (moves horizontally to the right on the chart) at a given pressure altitude. Adjustments made to the adjustable orifice (see Figure 8) will correct the chart fuel flow output vertically (see Figure 3).

      CAUTION: The adjustable orifice screw is a tapered needle and may become damaged if forced against its seat. This adjustment should move freely. Do not continue adjustments if rotational resistance increases suddenly.

4. Adjustments to the aneroid may affect the FULL POWER unmetered fuel pressure, metered pressure, and fuel flow. **It is important to maintain the balance between these adjustments in order to achieve the specified fuel system parameters.** Further re-adjustment of the adjustable orifice (unmetered fuel pressure) may be necessary after setting the auto-leaning schedule (see Section D.3, step 4.a.):
5. Review the Operational Check Form recorded data to determine if the auto-leaning schedule is set correctly to the "specified limits" for your pressure altitudes (reference Table 5 and Figure 4 for an IO550-D engine). Use the following example to correct altitude offset errors and set the auto-leaning schedule:

   a. Example altitude is 4000 feet with a measured fuel flow of 136 PPH. The optimum fuel flow specified for this pressure altitude should be 144 PPH (the midpoint between 139 PPH to 151 PPH, according to Table 5.) However, this fuel flow example of 136 PPH is located outside "specified limits" and requires manual adjustment to the aneroid adjustment screw to achieve the correct altitude offset.
   b. Plot your initial reference as Point A (Pressure Altitude 4000 ft, Fuel Flow 136 PPH, see Figure 3, bullet point 1).
   c. Draw a single horizontal line directly through Point "A" and both fuel flow curves (see Figure 3, bullet point 2). Plot the intersection of the horizontal line at the midpoint of the fuel flow curve as the new reference coordinate, Point "B").
   d. The horizontal distance between points "A" and "B" is approximately 2750 ft. This value represents the ALTITUDE OFFSET ERROR.

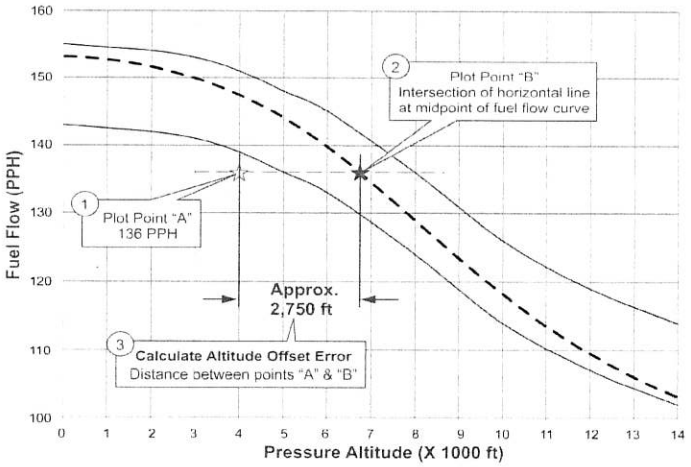

Figure 3. Calculating Altitude Offset Error *(example only)*

   e. In this example, to achieve the correct altitude offset, we must rotate the aneroid adjustment screw *one complete revolution counterclockwise for each 1000 ft of adjustment*. Thus, to make an adjustment of 2750 ft requires rotating the aneroid adjustment screw approximately 2-3/4 turns counterclockwise.
   f. After verifying the aneroid screw adjustment has achieved the correct the altitude offset, torque the jam nut to 25-30 inch pounds.

6. Perform a complete ground run-up and verify the unmetered and metered pressures, IDLE MIXTURE RISE, and fuel flows are within the limits specified for the pressure altitude. If these parameters are not within the limits specified, make adjustments according to the instructions in Section D to achieve the specified values.

E. FOLLOW-ON MAINTENANCE

1. Ensure the master switch, ignition switch and fuel selector are in the **OFF** positions.
2. Remove the engine cowling or cooling shroud in accordance with the aircraft manufacturer's instructions.
3. Remove all test gauges, fittings and hoses that were installed for fuel system setup.
4. Reconnect all fuel hoses and cap fittings to their original locations.
5. Torque all fittings to the value specified in Table 1.
6. Verify cap assembly (P/N 639494, (see Figure 11)) is correctly installed on the inlet tee fitting on throttle body/metering units. Torque the cap to **135-190 inch pounds** according to Table 1. This cap is cadmium plated and yellow chromate treated. DO NOT install any cap other than P/N 639494 on the tee fitting under any circumstance.
7. Perform a complete fuel system leak check according to the aircraft manufacturer's instructions. If the aircraft manufacturer does not provide specific instructions, the instructions below may be used. Correct any discrepancies noted.
   a. Turn aircraft master switch to **ON** position.
   b. Adjust mixture control to **FULL RICH.**
   c. Adjust throttle control to 1/4 inch open.
   d. Activate the aircraft boost pump to **ON.**
   e. Inspect entire fuel system for fuel leakage
   f. Return mixture and throttle to **IDLE/CLOSED** position
   g. Turn aircraft boost pump **OFF**
   h. Turn the aircraft master switch **OFF**
   i. Allow fuel to drain from the cylinders prior to engine start; follow aircraft manufacturer's instructions/ pilot's operating handbook (AFM/POH).
8. Install engine cowling in accordance with the aircraft manufacturer's instructions.
9. Perform a complete operational ground run-up and verify that all fuel system performance specifications are achieved.

F. FLIGHT CHECK

1. All naturally aspirated engines *(except those with an altitude compensating fuel pump)*
   a. Refer to the AFM/POH, supplied by the aircraft manufacturer or Supplemental Type Certificate (STC) holder, for aircraft operating instructions. A Flight Check is required whenever:
      1) an adjustment is made that may affect engine operational characteristics or performance,
      2) if FULL POWER RPM was not obtained during fuel injection system setup or ground run-up adjustment.
   b. Repeat the setup and adjustments as required until the fuel injection system is performing within specifications for the aircraft and engine.
2. Naturally aspirated engines *(with altitude compensating fuel pumps (Auto-lean))*
   a. All naturally aspirated engines utilizing an altitude compensating fuel pump require a Flight Check after:
      1) engine installation, fuel system repairs or adjustments,
      2) significant changes in geographic location from the last operational check,
      3) if the auto-leaning function is suspect,
      4) and at twelve month intervals, in conjunction with the Annual/ 100-hour inspection.

      NOTE: Ensure the accuracy of aircraft fuel flow gauge and tachometer has been verified. These gauges must be accurate or the data recorded during flight check will not be valid.
   b. Record the appropriate fuel flow vs. pressure altitude specifications from the correct **Engine Altitude Leaning Schedules** and **Auto-Leaning Chart** on the Operational Check Form (provided on the last page of this document). *Reference:*
      1) M-7, "Maintenance and Overhaul Manual" for all IO360 engines.
      2) Table 5 and Figure 4 for all other applicable engines.
3. Perform a complete preflight inspection, engine start, and ground run-up according to the AFM/POH.
4. Set the aircraft altimeter to **29.92 In. Hg**.
5. In accordance with the AFM/POH, conduct a normal take-off.
6. Climb must be accomplished using full throttle, FULL RICH mixture, and maximum rated full power RPM.
7. Using the aircraft fuel flow gauge and altimeter, record fuel flows at all pressure altitudes specified.
8. Compare the recorded fuel flows with the specified fuel flows for all pressure altitudes.
   a. If fuel flow is within the minimum and maximum limits at all altitudes, no adjustments are required.
   b. If the fuel flow is not within specified limits at all pressure altitudes, the fuel injection system auto-leaning schedule requires adjustment (see Section G).

4. Slowly advance the throttle control (while monitoring all gauges) to full rated power for the engine and allow the engine to stabilize for 15 seconds. Record all engine and test gauge indications. Return the engine to the specified IDLE RPM.

   CAUTION: DO NOT ALLOW ENGINE TEMPERATURES TO EXCEED 420°F CHT OR 210°F OIL TEMP. *After FULL POWER operation, turbocharged engines must be operated at 800 to 1000 RPM for a minimum of five (5) minutes to allow engine temperatures to stabilize prior to engine shutdown.*

5. Compare the recorded IDLE fuel pressure, IDLE MIXTURE RISE, FULL POWER RPM, manifold pressure (as applicable), unmetered fuel pressure, metered fuel pressure, and fuel flow indications against the specified values.
   a. *If all recorded values are within specifications,* set the IDLE RPM according to Section D.3, step 6.
   b. *If any of the recorded readings are* ***not*** *within specifications,* you must perform **ALL steps** in "Section D.3.
6. Shut down the engine.

D.3. Fuel System Corrective Adjustments

WARNING

Make all corrective adjustments with the engine STOPPED and the IGNITION and MASTER switches in the OFF positions.

NOTE: Install the engine cowling or cooling shroud during all ground operation.

1. To set the specified **IDLE RPM** and unmetered pump pressure:
   a. Loosen the jam nut on the low pressure relief valve (see Figure 5 through Figure 13). Turning the adjustment clockwise (CW) will increase pressure and counterclockwise (CCW) will decrease pressure.
   b. Operate the engine at 1500 to 1800 RPM for 15 seconds after each adjustment to clear the engine, then reduce the throttle to the specified IDLE RPM.
   c. Repeat adjustment (Section D.3, step 1) until pressure is within specified limits.

      NOTE: Maximum part throttle full rich fuel flow will be achieved by setting the idle rpm (low) unmetered fuel pump pressure to the minimum value specified. **With the idle rpm fuel/air mixture properly adjusted (after completing Section D.3, step 2, below) the fuel control metering plate orifices are indexed to the maximum open position.**

2. To adjust the **IDLE fuel/air mixture** to operate within specification:
   a. Identify the correct mixture control assembly that is to be adjusted (see Figure 11 to Figure 13). Make the necessary adjustment and record in the "Remarks" area of the Operational Check form.
   b. Operate the engine at 1500 to 1800 RPM for 15 seconds after each adjustment to clear the engine, then reduce the throttle to the specified IDLE RPM
   c. Repeat this adjustment (Section D.3, step 2) until the specified IDLE MIXTURE RISE is achieved.

3. Recheck IDLE RPM unmetered pump pressure. If pressure is not within limits, repeat step 1 and step 2 until the specified values for both steps are achieved.
4. To set the specified **FULL POWER** metered fuel pressure:
   a. *On naturally aspirated engines with an adjustable orifice screw,* turn the adjustable orifice screw clockwise to increase or counterclockwise to decrease metered fuel pressure (see Figures 5, 6, and 8).

      NOTE: If installed, cut and remove the safety wire from the adjustable orifice. It is not necessary to replace the safety wire to the adjustable orifice housing after adjustment has been completed.

   b. *On naturally aspirated engines without an adjustable orifice screw or on turbocharged engines without a fuel pressure regulator*:
      1) Loosen the aneroid adjustment screw jam nut (see Figures 7, 9, and 10.
      2) Turn the aneroid adjustment screw counterclockwise to increase or clockwise to decrease metered fuel pressure.
      3) After final adjustment is accomplished, torque the jam nut to 25-30 inch pounds. DO NOT EXCEED JAM NUT TORQUE LIMITS. Exceeding the jam nut torque specification will result in damage to the aneroid housing threads and subsequent maladjustment.
   c. *On turbocharged engines equipped with a fuel pressure regulator,* perform a final adjustment to the FULL POWER metered fuel pressure and fuel flow as follows (see Figure 14):
      1) Reconnect the regulator and torque connections to the value specified in Table 1.
      2) Loosen the jam nut on the regulator adjustment set screw.
      3) Turn the regulator adjustment screw clockwise to increase or counterclockwise to decrease metered fuel pressure and fuel flow. **On turbocharged engines equipped with a fuel pressure regulator, the FULL POWER metered fuel pressure and fuel flow must be adjusted to five (5) percent higher than the maximum specified limit when regulator is disconnected.** This is required to ensure adequate part-throttle fuel flow.
      4) After final adjustments are completed, torque the jam nut to 21-25 inch pounds.
5. When FULL POWER metered fuel pressure has been adjusted to the specified values, recheck:
   a. IDLE RPM
   b. Unmetered pump pressure
   c. IDLE fuel/air mixture

   If any values are not within specified limits, repeat adjustment procedures (Section D.3, step 1 through step 5.
6. With the fuel system now set to the specified metered fuel pressure, set the IDLE RPM to the aircraft manufacturer's specified value by adjusting the idle speed stop screw (reference Figure 11 through Figure 13; turn idle speed stop screw clockwise to increase RPM or counterclockwise to decrease RPM).

GAUGE METHOD: If using the 0 to 30 PSID differential gauge pressure fitting, connect to the metered pressure tee fitting using a hose of sufficient length to provide clearance from the aircraft and propeller arc. Connect an equal length of hose to the "suction" side of the gauge and connect the other end to a location to reference turbocharger compressor discharge (upper deck) pressure (see Figure 17 and Figure 18).

Turbocharged engine models (incorporating a fuel pressure regulator) must have the regulator deactivated during the initial fuel system adjustment. (see Figure 14).

a. To deactivate the fuel pressure regulator, loosen and remove the fuel line or hose from the "center" port fitting at the pressure regulator.

b. Install a cap on the "center" port fitting.

c. Install a plug in the removed line.

d. Torque the cap and plug to the values specified in Table 1.

e. Perform a pressurized leak test on the connections prior to proceeding with fuel system adjustments.

11. Position the throttle control in the FULL OPEN position and the mixture control to FULL RICH. Operate the aircraft boost pump in accordance with the aircraft manufacturer's instructions. Following the instructions provided with the *Porta-Test* unit, bleed all air from the test unit and hoses.

GAUGE METHOD: If using the alternative calibrated test gauges, loosen the test connections at each gauge to bleed the lines of any air. Hold the gauge at or slightly above the height of the fuel system component during the bleeding operation. Operate the boost pump only long enough to allow purging of air from the installed test equipment. Verify that all fuel lines, hoses and fittings are securely torqued and that no fuel leaks exist before proceeding. Ensure test hoses have been routed clear of the exhaust system and are securely supported over their entire length to avoid inaccurate gauge readings.

WARNING

Verify all fuel has drained from the induction system prior to attempting engine start. Failure to do so could cause "hydraulic lock" and subsequent engine failure.

12. Install the engine cowling or cooling shroud during ground operation.

D. GROUND ADJUSTMENT PROCEDURES

The Operational Check form (included on the last page of this service bulletin) should be reproduced and will be used to record adjustments and actual test indications. Also, transcribe the applicable (baseline) IDLE and FULL POWER **specified** adjustment points from Table 3 to the Operational Check form:

a. Propeller RPM
b. Manifold Absolute Pressure (MAP)
c. Fuel Pressures (unmetered and metered)
d. Fuel Flow
e. IDLE MIXTURE RISE (recorded in the "Remarks" area)

D.1. Important Setup Notes

CAUTION: For L/TSIO360 and TSIO520 engine models equipped with a fixed (ground adjustable) exhaust bypass, verify that the wastegate is adjusted according to the aircraft manufacturer's instructions. Failure to do so can result in an improperly adjusted fuel system and possible engine damage.

1. Test gauge readings must be taken with the gauges held at the same height above the ground as the fuel system component being measured.
2. Engine driven fuel pump output pressures vary with engine RPM. During ground operation, full power RPM may not be obtained. Use the **Corrected Metered Pressures** found in Table 2 to correct the specified metered pressures if full power RPM cannot be achieved.
3. *On turbocharged engines,* ensure manifold pressure is adjusted according to the aircraft manufacturer's instructions. Engine driven fuel pumps installed on turbocharged engines are referenced to turbocharger compressor discharge pressure (upper deck pressure) to achieve FULL POWER fuel pump pressure.
4. Turbocharged engines equipped with fuel pressure regulators must indicate a full power metered pressure and fuel flow five (5) percent higher than the maximum specified limit **when the regulator is disconnected**. This is required to ensure adequate part-throttle fuel flow.

D.2. Recording Fuel System Performance

WARNING

Ensure the aircraft brakes are set and wheel chocks are properly placed Forward and Aft of the main landing gear tires before engine start. Do not stand or place equipment in the arc of the propeller.

1. Prepare the aircraft for ground run and start the engine in accordance with the aircraft manufacturer's instructions. Advance the throttle to 1500 to 1800 RPM. While monitoring all engine gauges, operate the engine at this power setting until the engine temperatures and pressures have stabilized in the operational range.

CAUTION: Turn aircraft boost pump OFF to prevent adverse affects to the adjustments (these instructions do not supersede or replace the Instructions for Continued Airworthiness (ICAs) provided by the aircraft manufacturer.

2. With the mixture control in the FULL RICH position, reduce the throttle to the **specified IDLE RPM**. Record the unmetered fuel pressure indicated on the gauge.
3. Check the IDLE fuel/air mixture by *slowly* moving the mixture control from the FULL RICH position toward the IDLE CUTOFF position until you've achieved the **maximum IDLE RPM**. Record the IDLE MIXTURE RISE after returning the mixture control back to the FULL RICH position.

NOTE: The IDLE MIXTURE RISE is the difference (or RISE) between the IDLE RPM at FULL RICH and the maximum achievable IDLE RPM. It is generally consistent for most engines (25-50 RPM) except for the IO240-B (50-75 RPM). *Refer and use requirements for mixture checks and values requirements provided in your aircraft manufacturer's instructions.* I.E. More than 50 RPM rise indicates the mixture is too rich and less than 25 RPM or no rise indicates too lean.

3. Locate the idle speed stop screw on the throttle body and turn it counter-clockwise two complete turns (see Figure 11 through Figure 13). During fuel system adjustment, IDLE RPM will be controlled manually using the cockpit throttle control.
4. Ensure all fuel system components are of the correct part number and are installed properly. Correct any discrepancies noted.
5. Remove, inspect, clean, and reinstall or replace the aircraft and **engine fuel screens** according to the aircraft manufacturer's instructions.

B.2. Engine Installation Inspection

WARNING

Use of inaccurate gauges will result in incorrect adjustment of the engine fuel system, possible cylinder wear due to lean operation, pre-ignition, detonation, loss of power and severe engine damage.

1. Before making any checks or adjustments, verify the accuracy of the aircraft tachometer, manifold pressure gauge, and fuel flow gauge. Any gauge found to be inaccurate must be repaired or replaced before adjusting the fuel system.
2. Inspect all lines, hoses, and wire bundles for chafing, loose connections, leaks and stains. Correct any discrepancies noted.

B.3. Induction and Exhaust System Inspection

1. Inspect the exhaust and induction systems for proper installation, security and leaks. Correct any discrepancies noted.
   a. Inspect the aircraft **vapor return system** for proper operation according to the aircraft manufacturer's instructions. Correct any discrepancies noted.
   b. Ensure the fuel **manifold valve vent and fuel pump drain lines** are properly installed, open and free of obstruction. Correct any discrepancies noted.
2. Inspect the aircraft **induction air filter and alternate air system** for condition, operation and cleanliness. Repair or replace any component that is not airworthy according to the aircraft manufacturer's instructions.

B.4. Linkage Inspection and Lubrication

WARNING

Failure to correctly install and maintain engine controls can result in loss of system control and subsequent loss of engine power.

1. Inspect all **engine control rod ends** for wear, freedom of movement, proper installation and security according to the aircraft manufacturer's instructions. Correct any discrepancies noted.
2. Inspect the **throttle and control assembly link rods** (where used) for correct installation, security and wear at the attach points. Correct any discrepancies noted.
3. Ensure all engine controls operate freely throughout their full range of travel and are properly adjusted according to the aircraft manufacturer's instructions.
4. Lubricate all control rod ends and fuel system components according to the latest revision of CM Service Bulletin SB95-2 and the Aircraft Maintenance and Overhaul Manual.

C. SETUP PROCEDURES

WARNING

Failure to properly support and stabilize component fittings can result in fitting and/or component damage and loss of system pressure. Reference the latest revision of SIL95-5.

NOTE: Adjustments to any component of the fuel injection system can affect other system settings. Always verify the performance of the entire fuel injection system whenever any fuel injection system component is adjusted.

1. Loosen and remove the unmetered fuel supply hose from either the fuel pump outlet fitting, the fuel control unit inlet fitting, or the throttle body/metering unit inlet tee (*whichever is most accessible*). Some engine models have a fuel pressure connection fitting in the fuel control inlet screen that may be utilized for unmetered pressure gauge attachment.
2. For engine models with integral throttle body/metering units (see Figure 11), remove and set aside the cap fitting (P/N 639494) from the inlet tee. This cap will be reinstalled after setup is complete.
3. Install the tee fitting (P/N MS51523-B4) directly to the fuel pump outlet fitting or to the fuel control inlet fitting (see Figure 9 through Figure 13 as applicable). Torque the tee fitting to the value specified in Table 1.

   NOTE: Some installations may require combinations of different fittings and hoses to facilitate installation of unmetered and metered test equipment connections.
4. Attach the unmetered fuel supply hose to the straight end of the tee fitting (P/N MS51523-B4) and torque to the value specified in Table 1.
5. Connect the unmetered test hose from the *Porta-Test Unit* to the tee fitting and torque to the value specified in Table 1.

   GAUGE METHOD: If using the 0 to 60 PSI gauge, connect the gauge to the tee fitting using a length of hose which will provide proper clearance from the engine cowling and propeller arc. Torque connections to the value specified in Table 1.
6. Loosen and remove the metered fuel supply hose from the manifold valve inlet fitting.
7. Install and torque the second tee fitting directly to the fuel manifold valve inlet fitting.
8. Attach the metered fuel supply hose to the straight end of the second tee fitting and torque to the value specified in Table 1. On certain models there is an optional capped fitting on the manifold valve in lieu of second tee fitting.
9. Connect the metered pressure test hose from the *Porta-Test Unit* to the second tee fitting and torque to the value specified in Table 1.

   GAUGE METHOD: If using the 0 to 30 PSI gauge, connect to the swivel end of the tee fitting using a hose long enough to provide proper clearance from the engine cowling and propeller arc. Torque all connections to the value specified in Table 1.
10. *On turbocharged engine models;* connect the *Porta-Test* manifold pressure hose and the upper deck pressure hose to the engine following the instructions provided with the *Porta-Test* unit.

GAUGE METHOD: Calibrated gauges may be used as an optional tool to the Model 20 ATM-C *Porta-Test Unit*. Calibrated pressure and differential pressure gauges may be purchased from various suppliers.

CAUTION: Pressure gauges must be accurate within ±1%. Pressure gauges must be checked for accuracy and calibrated in accordance with the manufacturer's instructions.

a. One calibrated 0-60 PSI gauge, graduated in 1 PSI increments. This gauge will be used for unmetered pressure measurement, *and*

b. To perform metered pressure measurements and verification of aircraft fuel flow indications:

   1) *on normally aspirated engines,* one calibrated 0-30 PSI gauge, graduated in 0.2 PSI (maximum) increments, *or*

   2) *on turbocharged engines,* one calibrated differential pressure gauge, 0-30 PSID maximum, graduated in 0.2 PSI (maximum) increments

2. One digital hand-held tachometer capable of verifying aircraft tachometer accuracy prior to fuel system adjustment.

3. Two swivel tees (P/N MS51523-B4). These fittings are typically used to connect fuel lines for unmetered and metered pressure reference.

Figure 2. Tee (P/N MS51523-B4)

4. Hoses of appropriate diameters and sufficient lengths to allow personnel and equipment to provide proper clearance from the propeller arc and blast area. Hose connection requirements will vary by engine model.

5. Common hand tools including: 7/8", 11/16", 9/16", 1/2", 3/8", 7/16", 11/32", and 5/16" wrenches. A 1/4" drive ratchet and sockets, universal swivel, extension, and a 5/32" hex key (Allen) wrench, common screw driver, a calibrated torque wrench, an oil can, mirror and flashlight.

6. Airframe boost pump.

7. General shop equipment and supplies including shop towels and a 2-5 gallon container free of contaminants.

8. Safety equipment including hearing and eye protection must be used.

B. PRE-SETUP REQUIREMENTS

WARNING

Stand clear of the propeller arc prior to proceeding and DO NOT stand or place equipment within the arc of the propeller. Do not smoke or expose the work area to ignition sources while performing this procedure.

B.1. Fuel System Purge and Inspection

1. Remove the engine cowling according to the aircraft manufacturer's instructions.

WARNING

Fuel system contamination may lead to fuel system component damage, erratic engine operation, loss of power, or engine shutdown. Reference Service Bulletin SB08-4, "Fuel Injection System Contamination," anytime a CM continuous flow fuel injection system component is removed for replacement, repair, or maintenance.

NOTE: This procedure is not required for a newly installed factory engine or fully overhauled engine that has been previously ran.

2. During engine installation, purge the fuel system according to the following instructions. The following steps involve utilizing the airframe boost pump to flush and inspect specified quantities of fuel into an uncontaminated container. If contamination exists, always locate the source and correct the issue before proceeding to the next inspection step.

   a. Flush a minimum of one gallon of fuel from the fuel pump inlet fuel line into a clean, dry container. Inspect the flushed fuel. If free from contamination connect the airframe boost pump **outlet fuel line** to the fuel pump at the inlet using the appropriate maintenance instructions. If contamination exists, correct the issue before proceeding.

   b. Flush a minimum of one quart of fuel through the **fuel pump** *(on fuel pumps with integral mixture control)* and outlet fuel line into a clean, dry container while working the mixture control through its full range of operation. Inspect the flushed fuel. If free from contamination, connect to the throttle and control unit using the appropriate maintenance instructions. If contamination is found, correct the issue before proceeding.

   c. Flush the **fuel transducer hose** (where installed) into a clean dry container. Inspect the flushed fuel. If free from contamination, install the fuel transducer according to the aircraft maintenance instructions. If contamination is found, correct the issue before proceeding.

   d. Flush a minimum of one quart of fuel through the **throttle and fuel control unit** into a clean, dry container while working the throttle control through its full range of operation. Inspect the flushed fuel. If free from contamination connect to the **fuel manifold valve** using the appropriate maintenance instructions. If contamination is found, correct the issue before proceeding.

   e. Flush **each fuel injector line** separately into individual clean, dry containers. If the flushed fuel is free from contamination, connect to the fuel injectors using the appropriate maintenance instructions. If contamination is found, correct the issue before proceeding.

CONTINENTAL MOTORS® AIRCRAFT ENGINE

SERVICE INFORMATION DIRECTIVE

Compliance Will Enhance Safety, Maintenance, or Economy of Operation

CATEGORY 4

SID97-3G

Supersedes SID97-3F
TECHNICAL PORTIONS
FAA APPROVED

SUBJECT: Continuous Flow Fuel Injection Systems Adjustment Specifications and Instructions

PURPOSE: Provide specifications and instructions for adjustment of Continental Motors (CM) fuel injection systems.

COMPLIANCE At engine installation, 100 hour/Annual Inspection, fuel system component replacement or as required if operation is not within specifications.

MODELS AFFECTED: All CM Aviation Gasoline (AvGas) engine models equipped with CM continuous flow fuel injection systems except IO520-N, NB; L/TSIO360-RB; TSIO520-L, LB, WB; GTSIO520-D, F, K, N and GIO550-A engine models.

WARNING

The instructions and values provided in this document apply to Continental Motors (CM) gasoline fuel injected engines that conform to the original type design. Refer to the Supplemental Type Certificate (STC) holder's instructions for aircraft that have been modified from the original type design.

I. GENERAL INFORMATION

Fuel injection system components manufactured by CM are adjusted and calibrated to meet engineering specifications. Fuel injection system components installed on factory new and rebuilt engines are adjusted to meet design specifications during operation in the production engine test facility. These tests and adjustments are carried out in an environment of controlled fuel supply pressures and calibrated test equipment.

When engines are installed in aircraft, they are configured with the aircraft manufacturer's induction system, fuel supply system, and are placed in service under varied conditions. These structural and functional differences require scheduled monitoring and adjustment of the fuel injection system to meet operational specifications before flight.

CAUTION: Engine performance, service life and reliability will be compromised if the engine's fuel injection system is neglected. Requirements set forth in this document cover general areas of operation, maintenance, and servicing and do not supersede or replace the Instructions for Continued Airworthiness (ICAs) provided by the aircraft manufacturer(s). Reference the applicable Aircraft Maintenance and Overhaul Manual for detailed fuel system adjustment and maintenance procedures.

Aircraft and engines that have been modified from their original type design must have the fuel injection system maintained in accordance with the Supplemental Type Certificate Holder's FAA approved instructions.

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A fuel system operational check is required after any of the following circumstances: (1) at engine installation, (2) during 100 hour and annual inspections, (3) whenever a fuel system component is replaced or adjusted, (4) when changes occur in the operating environment.

II. ADJUSTMENT PROCEDURES

The following adjustment procedures are presented in a sequential format that must be followed to ensure proper fuel system adjustment. Any fuel system that cannot be adjusted to meet the specified values will require repair or replacement of the affected components prior to further engine operation.

The adjustment procedures provided in this document also apply to engine fuel systems equipped with Continental Motors (CM) Position Tuned Fuel Nozzles. Refer to Publication Number FI-2, *"Position Tuned Fuel Injector Nozzle Installation and Maintenance Manual"* for more detailed information and installation instructions.

A. REQUIRED TOOLS AND EQUIPMENT

CAUTION: Refer to the torque specifications, Table 1, "Hose End and Cap Fitting Torque Specifications," on page 15, when applying torque to hose end fittings.

A complete set of tools and test equipment is essential for correct setup of CM fuel injection systems. Various combinations of these tools and equipment will be used for fuel system adjustment (depending on the engine model), to include the following general items:

1. CM recommends the Model 20 ATM-C *Porta-Test* unit (P/N 630045-20, ATM-C, or equivalent), to ensure the fuel injection system meets all pressure and flow specifications. The Model 20 ATM-C *Porta-Test* unit is available from the following manufacturer:

Approved Aircraft Accessories
29300 Goddard Road
Romulus, Michigan 48174
1-734-946-9000

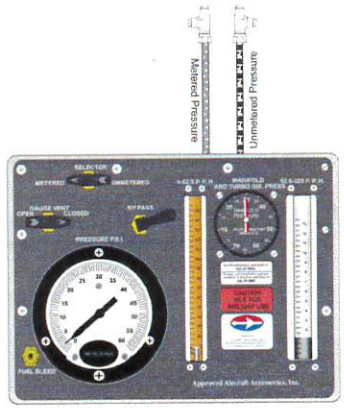

Figure 1. Model 20 ATM-C Porta-Test Unit

General Aviation Modifications, Inc.
2800 Airport Road
Ada OK 74820

PACKING SLIP

Packing Slip	INV000008730
Document Date	4/10/2017
Page	1
Who Printed	kweddle
Date/Time Printed	4/10/2017 9:44:47 AM

Bill To:

GLENDALE AERO SERVICES
JOHN FISHER
6841 N. GLEN HARBOR BLVD.
GLENDALE, AZ 85307

Ship To:

GLENDALE AERO SERVICES
JOHN FISHER
6841 N. GLEN HARBOR BLVD.
GLENDALE, AZ 85307

* Item Shipped Directly from Vendor

Tail #	PO #	Customer ID	Salesperson ID	Shipping Method	Payment Terms	Req Ship Date	Master No.
N273DT	N273DT	GLAE1000		UPS BLUE	Credit Card	4/10/2017	8,875

Ordered	Shipped	B/O	Item Number	Description	Site	UOM
1	1	0	TIGT 550-19C 26325	GAMIJECTOR KIT - TIGT 550-19C - TUNED IND 1	GWC-FLOW	EA

ATTENTION INSTALLERS!!!.....

The letters and numbers stamped on each ***GAMIjector***® will help you install it in the correct cylinder.

GAMIjector® stamped "GA***" should be placed in the Aft Cylinders (#2=Left Aft; #1= Right Aft).

GAMIjector® stamped "GM***" should be placed in the Middle cylinders (#4= Left Middle; #3= Right Middle).

GAMIjector® stamped "GF***" should be placed in the Front cylinders (#^=left Front; #5=Right Front).

GAMIjector® **are interchangeable left to right.**

A ***GAMIjector***® labeled "GA***" could be installed in either the Aft left or the Aft Right cylinder, but should NOT be installed in any other location.

****

FUEL LINE FLAGS.....Installation Instructions

The enclosed gold colored aluminum labels are designed to wrap around each cylinder's fuel line to identify the cylinder number and ***GAMIjector***® required. First ensure proper cylinder number, then remove paper backing from label and wrap around line approximately five inches from nozzle. The label is sized to wrap the fuel line and stick to itself forming a neat flag with printing visible to the mechanic.

Thank You...

BIAGGI

N ______________

FLIGHT TEST DATA FORM

1-888-359-4264
FAX 1-580-436-6622

DATE		ENGINE START TIME		TEST START TIME		MP	RPM	PRESS. ALT		OAT		GEM/JPI MODEL		
Fuel Flow	EGT 1	CHT 1	EGT 2	CHT 2	EGT 3	CHT 3	EGT 4	CHT 4	EGT 5	CHT 5	EGT 6	CHT 6	TIT	IAS

NAME ____________________ A/C TYPE __________________ ENG. MODEL ______________ EST. GROSS WT. __________

PHONE NUMBER OR EMAIL ADDRESS ____

N________________ FLIGHT TEST DATA FORM 1-888-359-4264

FAX 1-580-436-6622

DATE		ENGINE START TIME		TEST START TIME		MP	RPM	PRESS. ALT		OAT		GEM/JPI MODEL		
Fuel Flow	EGT 1	CHT 1	EGT 2	CHT 2	EGT 3	CHT 3	EGT 4	CHT 4	EGT 5	CHT 5	EGT 6	CHT 6	TIT	IAS

NAME ________________ A/C TYPE ________________ ENG. MODEL ________________ EST. GROSS WT. ____________

PHONE NUMBER OR EMAIL ADDRESS ____

Longhand method: This method is more complete, but more time consuming than the shorthand method. With this method, you record EGTs (and CHTs optionally) at small increments of fuel flow adjustment from around 2 gph rich of peak EGT to some point lean of peak EGT. You want these lines of data to be in the smallest practical fuel flow increments – 0.2 to 0.3 gph works well. You will also want to use the smallest EGT resolution possible. For many monitors this means 1°F, though 5 or 10°F is the smallest for some monitors. 1°C resolution works fine, also. It may be necessary to use the monitor's "lean find" or "lean assist" function to find the 2 gph rich of peak starting point. The reason for starting 2 gph rich of peak is to prevent you from either taking much more data than necessary, or starting the data collection too late to capture enough information.

Here is a sample of what your data might look like before and after "fine tuning" of the injectors:

N# FLIGHT TEST DATA FORM FAX 1-888-359-4264 1-580-436-6622

DATE		ENGINE START TIME	0921	TEST START TIME	0958	MP 23.2	RPM 2300	PRESS. ALT 10500		OAT -7 °C		GEM/JPI MODEL	EDM-800-6C	
Fuel Flow	EGT 1	CHT 1	EGT 2	CHT 2	EGT 3	CHT 3	EGT 4	CHT 4	EGT 5	CHT 5	EGT 6	CHT 6	TIT	IAS
13.8	1504	307	1535	315	1549	309	1553	309	1557	279	1503	270	1602	136
13.6	1508	304	1539	313	**1555**	306	1555	307	1558	277	1504	268	1605	136
13.4	1517	302	1542	311	1552	306	1558	307	1564	277	1505	268	1609	136
13.2	1519	302	1544	309	1551	302	1559	306	1567	275	**1506**	266	1612	135
13.0	**1524**	304	**1546**	311	1549	306	**1562**	307	**1573**	275	1502	268	1614	133
12.8	1522	300	1542	307	1545	306	1560	302	1571	270	1503	262	1612	133
12.6	1521	297	1537	302	1537	300	1555	298	1566	259	1490	259	1607	132

NAME: A/C TYPE: ENG. MODEL: EST. GROSS WT.: 3245 LB

N# FLIGHT TEST DATA FORM FAX 1-888-359-4264 1-580-436-6622

DATE		ENGINE START TIME	0921	TEST START TIME	0958	MP 23.2	RPM 2300	PRESS. ALT 10500		OAT -7 °C		GEM/JPI MODEL	EDM-800-6C	
Fuel Flow	EGT 1	CHT 1	EGT 2	CHT 2	EGT 3	CHT 3	EGT 4	CHT 4	EGT 5	CHT 5	EGT 6	CHT 6	TIT	IAS
13.8	1500	306	1535	314	1546	305	1550	310	1558	278	1500	270	1603	136
13.6	1509	302	1537	313	1549	305	1552	308	1562	277	1501	270	1606	136
13.4	1516	300	1541	310	1551	306	1556	308	1568	277	1505	270	1610	135
13.2	1517	301	1543	310	**1553**	304	1562	307	1571	276	**1507**	269	1614	135
13.0	**1525**	302	**1544**	311	1550	305	**1562**	307	**1574**	276	1506	268	1613	133
12.8	1523	301	1542	309	1549	302	1562	305	1570	272	1501	268	1611	133
12.6	1519	296	1534	303	1544	299	1553	300	1566	270	1487	267	1608	133

NAME: A/C TYPE: ENG. MODEL: EST. GROSS WT.: 3245 LB

You can download blank copies of this test form at www.gami.com or create your own.

Data analysis: Once you have performed this GAMI Lean Test, email the results to flightdata@gami.com or fax the data to 580-436-6622. Afterwards, please give us a call toll free to discuss the results. **888-359-4264**.

Questions? If you have any questions about the lean test procedure or using your particular engine monitor system for the test, please feel free to call us toll free – **888-359-4264**.

General Aviation Modifications, Inc.
2800 Airport Rd – Hangar A
Ada, OK 74820
888-359-4264 Fax: 580 436-6622

General Aviation Modifications, Inc.
2800 Airport Rd – Hangar A
Ada, OK 74820
888-359-4264 Fax: 580 436-6622

GAMI LEAN TEST

Purpose: The purpose of the GAMI Lean Test is to quantify the fuel/air ratio balance in the engine either before or after installing the ***GAMIjector***® fuel injectors. Knowing this balance, and the value we call the **"GAMI Spread"** is important because it will tell you how much you can benefit from ***GAMIjectors***® if your engine is not already equipped with them, and it will tell us if we need to adjust your engine balance if you are already equipped with ***GAMIjectors***®.

The **GAMI Spread** is calculated by determining at what total engine fuel flow each cylinder reaches peak exhaust gas temperature (EGT) and subtracting the lowest flow from the highest flow. Most engines are considered to have good fuel/air ratio balance if the **GAMI Spread** is less than 0.5 gph.

There are three basic methods for performing the GAMI Lean Test which work well. The following methods assume that you have some instrumentation to measure the EGT on each cylinder and the total engine fuel flow (this may be digital or analog).

While following these test methods, GAMI highly recommends a safety pilot accompany you. We also recommend you keep the cowl flaps open, if so equipped, and you perform the test at 65% power. It may be necessary to use a lower power setting, as required, to keep the CHT under 400°F and/or the Turbine Inlet Temp (TIT) under your max continuous redline (**Note:** All turbochargers allow for short term exceedances of the TIT limit for leaning purposes – usually one minute or less).

Download method: If your engine monitor has integral fuel flow and downloading capabilities, this is probably the easiest method. In flight at around 65% power at your typical cruise RPM, you should lean very slowly from some point rich of peak EGT to some point where all EGTs are lean of peak. You will know that you are lean of peak EGT on all cylinders once the exhaust temperature of each cylinder continues to drop as you reduce the fuel flow. Once the flight is complete, you should download the monitor and email the file in its native format to flightdata@gami.com.

Shorthand method: Most engine monitors will allow you to view all of your EGTs at the same time in a graphical format as individual columns. As you slowly adjust the mixture from rich to lean those columns will rise as each individual EGT nears its own peak. The columns will then fall as each cylinder reaches peak EGT and becomes lean of peak. Some monitors make determining peak EGT easier by inverting the EGT columns, making them flash, or changing the color of the bar when that particular cylinder peaks. Once you identify that a cylinder or number of cylinders has reached peak EGT, you can write down which cylinder or cylinders has peaked and at what total engine fuel flow. Continue in this fashion until you have recorded the total engine fuel flow for the peak EGT of each cylinder in the order which they reach peak. You can email these numbers to flightdata@gami.com or fax them to 580-436-6622.

temperature spread isn't very important. We want the EGTs to reach their peaks at close to the same fuel flow, or same time as you lean the mixture, but the absolute value of the temperatures is not very important. However, we want to keep the CHTs under 400°F, and ideally even 380°F or less. We also want to keep the TIT under the typical 1650°F TIT limitation (some engine TIT limits are higher). There is no maximum for EGT.

How RICH or LEAN of peak EGT should I set my mixture? This is the second most common question we receive! Pilots tend to try and over-complicate this part. While the science of engine operation is fascinating, and the intricacies can take years to fully understand, setting the mixture in actual practice is fairly simple. In most normally-aspirated (i.e. non-turbocharged) engines, setting the mixture ~100°F RICH of peak EGT, or richer; or ~20°F LEAN of peak EGT, or leaner will produce pretty good results. In turbocharged engines, or higher-than-stock compression engines at higher power settings (75% and up), you need to be a little richer (125°F ROP) or a little leaner (50°F LOP).

If running RICH of peak, you want to use the FIRST cylinder to peak as you lean from the rich side, and if running LEAN of peak, you want to use the LAST cylinder to peak as you lean from the rich side as your reference cylinder.

Please feel free at any time to call us here at **GAMI**. We are here to support you and your ***GAMIjectors***® fuel injectors equipped airplane. Be sure to use the toll free number. Our technical support staff is dedicated to you as an individual and always loves to talk to owners about flying, airplanes, aviation history, and any other favorite topic you might have!

From all of us at **GAMI:** Once again, **CONGRATULATIONS** on the purchase of this excellent product. We know you are going to experience many enjoyable hours in the air flying ***GAMIjectors***® fuel injectors.

The whole team at **GAMI**

YOUR ENGINE WILL SIMPLY RUN BETTER! ™

Toll Free: 888-FLY-GAMI (888-359-4264)
comments@gami.com www.gami.com

Dear GAMI Customer,

We would like to be the first to congratulate you on your purchase of ***GAMIjectors***® fuel injectors. You have just purchased the finest *and only* precisely tuned set of fuel injectors in the General Aviation industry. We know that you will be very happy with our products' performance when you feel that smoother engine, and see the difference the ***GAMIjectors***® fuel injectors make in the way your engine performs.

Please take a moment and review the three brief bullet points below:

After installation, you should see new GAMI plates on your engine's valve covers and GAMI tags on your injector fuel lines. These are an essential part of the kit. They will ensure that wherever you should have any maintenance performed, any removed nozzles will always get back to the correct cylinder.

- **Cleaning:**

  If you have an engine monitor, and can tell the injectors are working properly, it isn't strictly necessary to remove them for cleaning. The fuel running through them is a pretty good cleaner, and more nozzles seem to get clogged as a result of removal and installation than during routine operation. However, should you need to have them cleaned, use a high quality solvent that won't eat the brass. Afterward, blow them out with air. NEVER allow anyone to insert any kind of instrument, wire, needle, pipe-cleaner, etc. into the nozzle. This WILL damage the precision orifice inside the nozzle. Please review the "Installation Instructions" for your kit for details. That document is enclosed. You may also find it on our website (www.gami.com).

- **Lean Test:**

  Also enclosed is the "GAMI Lean Test." This is an excellent way for you to get to know the ***GAMIjectors***® fuel injectors and what they are doing for your engine. The test will take approximately 30 minutes, but that time is absorbed if you perform it the next time you fly somewhere (please use a safety pilot). *Please take the time to perform this test!* If the test results show the injector balance isn't as good as we'd like it to be, this test will give us the information we need to improve that balance ensure the engine runs smoothly. This service is included in the cost of the injector kit for one year (international shipping charges may apply, if applicable). After the one year period expires, there will be a $99 charge for further fine-tuning.

- **Operational FAQ:**

  What should my temperature spread (EGT or CHT) be? This question, or some variation of it, is the most common question we receive. The truth is the

FAA APPROVED MODEL LIST (AML)

STC No. SE09963SC

General Aviation Modifications, Inc.
2800 Airport Road, Hangar A
Ada, OK 74820

Date of Issuance: November 6, 2001
Date Amended: June 26, 2015, Rev. 1

Item	Aircraft Make	Aircraft Model	Original Type Certificate Number	Regulation / Part
1	Continental Motors	IO-240-A, B	E7SO	FAR 33
2	Continental Motors	IO-360-ES	E1CE	FAR 33
3	Continental Motors	TSIO-360-MB, RB, SB LTSIO-360-RB	E9CE	FAR 33
4	Continental Motors	TSIO-520-BE	E8CE	CAR 13
5	Continental Motors	IO-550-G, N, P, R	E3SO	FAR 33
6	Continental Motors	TSIO-550-B, C, E, G, K, N	E5SO	FAR 33
7	Continental Motors	GTSIO-520-D, H, L, N	E7CE	CAR 13
8	Continental Motors	IO-550-N modifed per STC SE10589SC	E3SO	FAR 33
9	Continental Motors	IO-550-P modifed per STC SA02918CH	E3SO	FAR 33

FAA Approved:

Scott A. Horn, Manager
Aircraft Certification Office
Southwest Region
Date: June 26, 2015

Persuant to Title 49 United States Code § 44704 (B) (3) (effective October 19, 1996) the signature below constitutes the agreement and permission of General Aviation Modifications, Inc., allowing the registered owner of **N273DT**, to alter that certain Continental Motors engine:

Model **TSIO-550-K**, SN **1009240**, and ONLY that serial number, by application of STC No. SE9963SC, to that specific engine, for the purpose of installing the fuel injector nozzles which are the subject of that STC.

General Aviation Modification, Inc.

By Tim Roehl, President
Or George W. Braly, CEO

[SEAL]

10-Apr-2017
Date

United States Of America

Department of Transportation – Federal Aviation Administration

Supplemental Type Certificate

Number SE09963SC

This Certificate issued to General Aviation Modifications, Inc.
2800 Airport Road
Hangar A
Ada, OK 74820

*certifies that the change in the type design for the following product with the limitations and conditions therefor as specified hereon meets the airworthiness requirements of Part * of the * Regulations.*

Original Product Type Certificate Number : *[see attached FAA Approved Model List (AML)

Make : for list of Approved models and applicable airworthiness

Model : regulations]

Description of Type Design Change: Installation of modified fuel injector nozzles in accordance with General Aviation Modifications, Inc. "Data List", Revision NC, dated September 12, 2001, and "GAMIjector Installation Procedure for Continental engines with 'Tuned' Induction," IP-2001-01, dated May 25, 2001, or "turboGAMIjector Installation Procedure for Turbocharged Continental engines with 'Tuned' Induction," IP-2001-02, dated May 25, 2001, or later FAA approved revisions.

Limitations and Conditions: Compatibility of this design change with previously approved modifications must be determined by the installer. If the holder agrees to permit another person to use this certificate to alter the product, the holder shall give the other person written evidence of that permission. This STC only applies to Teledyne Continental Motors (TCM) engine models listed on the FAA approved model list ont eh attached continuation sheet.

This certificate and the supporting data which is the basis for the approval shall remain in effect until surrendered, suspended, revoked or a termination date is otherwise established by the Adminstrator of the Federal Aviation Administration.

Date of application : July 13, 2001

Date of issuance : November 6, 2001

Date reissued :

Date ammended :

By direction of the Administrator

(Signature)

S. Frances Cox
Manager, Special Certification Office
Southwest Region

(Title)

Any alteration of this certificate is punishable by a fine of not exceeding $1,000, or imprisonment not exceeding 3 years, or both.

 This certificate may be transferred in accordance with FAR 21.47.

United States of America

Department of Transportation Federal Aviation Administration

Supplemental Type Certificate

Number SA01708SE

This certificate, issued to: **Precise Flight, Inc.**
63354 Powell Butte Road
Bend, OR 97760

certifies that the change in the type design for the following product with the limitations and conditions therefore as specified hereon meets the airworthiness requirements of Part **23** *of the* **Federal Aviation Regulations.**

Original Product—Type Certificate Number: A00009CH
Make: Cirrus Design Corporation
Model: SR22, SR22T

Description of the Type Design Change: Fabrication of the fixed oxygen system in accordance with Precise Flight Engineering Drawing Lists:

102N0000	Revision F	100N0000	Revision AH	051A0000	Revision B
027N0000	Revision E	026N0000	Revision E	020N0000	Revision G
010N0000	Revision H	016N0000	Revision C	012N0000	Revision IR
011N0000	Revision A	010A0000	Revision IR	009N0000	Revision C

or later FAA-approved revisions. Installation in accordance with Precise Flight Engineering Drawing List 102N0000, Revision F, or later FAA-approved revision. Maintained in accordance with the Instructions for Continued Airworthiness (ICA) Precise Flight Document 102NMAN0003, Revision E, dated February 23, 2010, or later FAA-approved revision or document.

Limitations and Conditions: Approval of this change in type design applies to the above model aircraft only. This approval should not be extended to other aircraft of these models on which other previously approved modifications are incorporated unless it is determined that the relationship between this change and any of those other previously approved modifications, including changes in type design, will introduce no adverse effect upon the airworthiness of that aircraft.

(See Continuation Sheet on Page 3)

This certificate and the supporting data which is the basis for approval shall remain in effect until surrendered, suspended, revoked, or a termination date is otherwise established by the Administrator of the Federal Aviation Administration.

Date of application: August 01, 2006
Date of issuance: October 04, 2006
Date reissued:
Date amended: October 12, 2007; May 30, 2008; April 13, 2010

By direction of the Administrator

(Signature)
Acting Manager, Seattle Aircraft Certification Office
(Title)

Any alteration of this certificate is punishable by a fine of not exceeding $1,000, or imprisonment not exceeding 3 years, or both.

This certificate may be transferred in accordance with FAR 21.47

PRECISE FLIGHT
Essentials for Safety and Performance.

63354 POWELL BUTTE ROAD
BEND, OR 97701, USA
800- 547-2558
www.precsieflight.com

Document Number: 102NMAN0003
Revision Number: E
Aircraft Serial Number: 0652

Instructions for Continued Airworthiness
Cirrus SR22/SR22T Built-In Oxygen System

STC Number SA01708SE

NOTICE

The Airworthiness Limitations Section (Section 2.0) is FAA Approved and specifies maintenance required under Sections 43.16 and 91.403 of the Federal Aviation Regulations, unless an alternative program has been FAA Approved.

These documents must be kept with the aircraft records.

THIS DOCUMENT CONTAINS PROPRIETARY INFORMATION OF THE PRECISE FLIGHT, INC. (PFI) COMPANY, AND ITS RECEIPT OR POSSESSION DOES NOT CONVEY ANY RIGHTS TO REPRODUCE, DISCLOSE ITS CONTENTS, OR TO MANUFACTURE, USE, OR SELL ANYTHING IT MAY CONTAIN OR DESCRIBE IN ANY WAY. REPORDUCTION, DISCLOSURE, OR USE WITHOUT SPECIFIC PRIOR WRITTEN CONSENT OF PFI IS STRICTLY PROHIBITED.

FAA Approval Date: MAR 10 2010

REVISION HISTORY

Rev.	DESCRIPTION OF CHANGES	Author	Date	Approved By	Approved Date
-	Original Release	STP	9/7/2006	JNS	9/7/2006
A	Revised document to include remote filler, and final oxygen system wire routing.	JNS	9/27/2006	JNS FAA	9/27/2006 10/3/2006
B	Revised document to include the A5 constant flowmeter, the PreciseFlow® Oxygen Conserver, added Section 2.7.1 inspection checklist for ease of maintenance, updated wire schematics adding the remote Annunciator option, added Section 3.0 IPC to this document for ease of maintenance for Cirrus Customers and Service Centers.	JNS	4/27/2007	JNS/FAA	7/23/2007
C	Added section 2.4.7 for either ground or flight testing of the O2 Required Pressure Sensor, added a ground test procedure for sensor test, allowed the owner/pilot to perform the 50, 200, and 500hr inspections on the breathing equipment. Corrected typo on item 1, Figure 19 for the Bottle Assembly. Added Trouble Shooting Flow Charts figures 5-11.	JNS	2/8/2008	JNS	2/8/2008
D	Removed owner/pilot notes for 50, 200, and 500hr inspections on the breathing equipment as required per the FAA. Corrected page numbering error do to formatting.	JNS	3/21/2008	JNS	3/21/2008
E	Updated ICA for Cirrus Perspective Installations; Added new SR22T model throughout document; changed Hydrostatic pressure test to every 5 yrs (was 3 yrs).	W. Ashforth W Ashforth	2/22/10 2/22/10	[signature]	2/23/10

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Cirrus Design SR22/SR22T Built-In Oxygen System

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1.0 Overview

1.1 Purpose

The Built-In Oxygen System ("Oxygen System" or "System"), is installed to provide supplemental oxygen for the pilot and passengers. The System consists of the following:

1. A 77 cu ft composite wrapped cylinder mounted in the aft fuselage of the aircraft
2. An oxygen regulator which is connected to the bottle and contains:
   a. An overpressure discharge
   b. A high pressure transducer
3. A Remote Filler Assembly located in the aft center of the baggage compartment and contains:
   a. A service port for filling the Oxygen System
   b. A manual pressure gauge
4. Associated plumbing and fittings
5. A center console panel display and System actuation switch
6. An overhead distribution manifold with low pressure transducer and integrated interior LED dome light
7. Breathing devices and flowmeters with cannulas, or masks

Setting the oxygen switch to ON illuminates the display showing oxygen quantity and energizes the System to allow oxygen to reach the overhead distribution manifold. Additionally the System annunciates if oxygen should be used in the aircraft as well as oxygen pressure or electrical faults. Four (4) manually operated oxygen flowmeters can be connected to the oxygen distribution manifold. The flow controls are calibrated and adjustable for altitude by the user. The following flow controls can be one of the following:

- A4 Flowmeters and Standard or Oxygen Conserving Cannulas -- Up to 18,000 Ft
- A4 Flowmeters and Masks (Standard and Microphone) -- Up to 25,000 Ft
- A5 Flowmeters and Standard or Oxygen Conserving Cannulas – Up to 18,000ft
- A5 Flowmeters and Masks (Standard and Microphone) – Up to 25,000 Ft
- PreciseFlow® Oxygen Conserver with Dual Lumen Cannula – Up to 18,000ft
- PreciseFlow® Oxygen Conserver with Masks (Standard and Microphone) – Up to 25,000ft

1.2 ICA Revisions

To ensure the maintenance of your existing aircraft, possible revisions to Section 2.0 Instructions for Continued Airworthiness may require updating over the life of the aircraft. Per the applicable Federal Aviation Regulations, an update process is required to properly maintain these instructions in addition to the aircraft itself. Because of this, it is imperative to complete the registration card for the aircraft once the System has been installed.

Revisions can be made by a service letter from Precise Flight Inc., an Airworthiness Directive as issued by the Administrator, by single page updates, or by a complete replacement of all pages of the manual. It must be clearly noted as to the revision level of the pages listed in the List of Active Pages. If a single sheet(s) is replaced, replace the List of Active Pages with the new one provided, or update the list manually and initial and date the list.

2.0 Instructions for Continued Airworthiness

2.1 Introduction

The contents of this section provide the instructions for continued airworthiness for the Cirrus SR22/SR22T Built-In Oxygen System. The majority of the installation does not affect the standard airworthiness of the aircraft; only the key Oxygen System items that exist different are noted in this section. All structure and general maintenance must be performed in accordance with existing approved maintenance practices, the aircraft maintenance manual or other FAA Approved document(s).

2.2 System Description

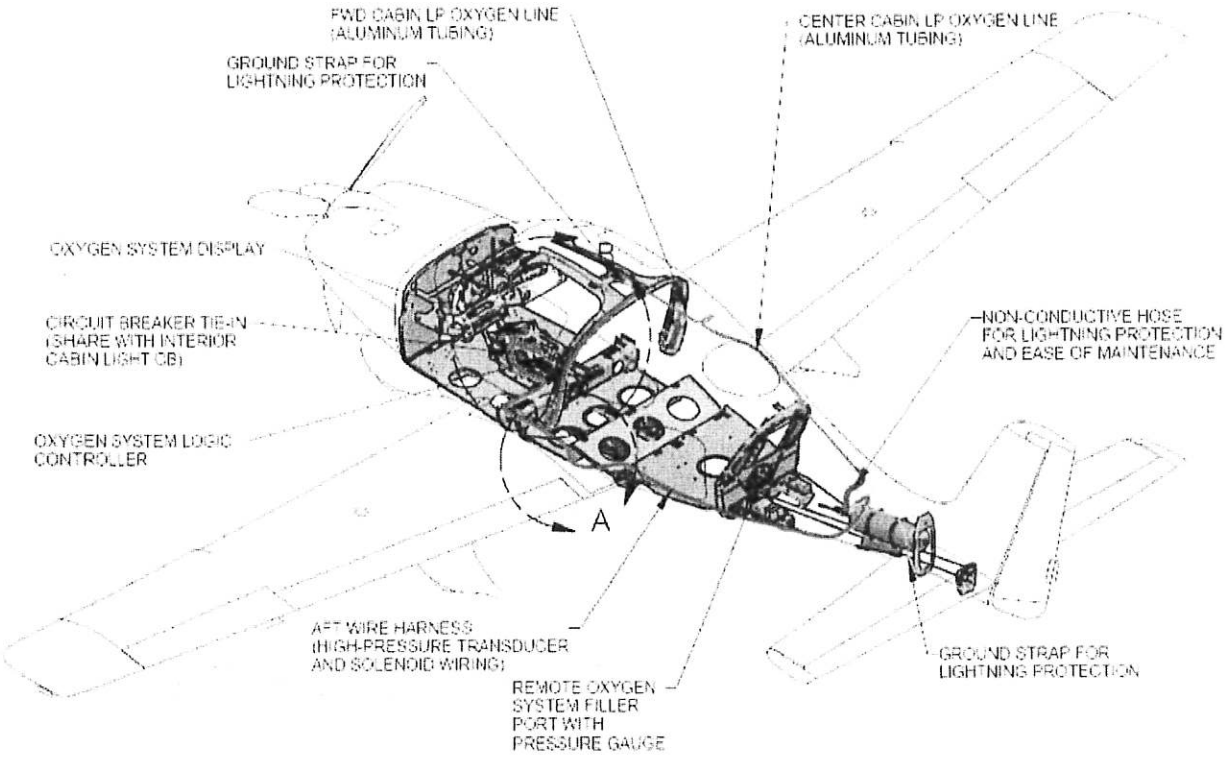

Figure 1 - SR22/SR22T Built-In Oxygen System Overivew

INSTRUCTIONS FOR CONTINUED AIRWORTHINESS – STC SA01708SE
Cirrus Design SR22/SR22T Built-In Oxygen System

The Built-In Oxygen System consists of a few simple components for supplying sufficient oxygen to the crew and passengers of the Cirrus SR22/SR22T aircraft. These components follow:

Oxygen Bottle
- Stores 77 cu ft of Oxygen at 1800 psig

Regulator Assembly
- Converts the high bottle pressure to a usable 70 psig for cabin distribution. This is actuated through a latching solenoid assembly with an electrical connection to the aircraft cockpit. The regulator assembly allows the bottle to be filled through a separate fill port and a fill gage. The fill gage allows the maintenance personnel to monitor the fill operation. An overpressure burst disc is incorporated to dissipate excess pressure and protect the bottle. A high pressure transducer electrically transmits bottle pressure to the cockpit display.

Oxygen Remote Filler Station
- Allows for easy filling of the oxygen system and incorporates a manual pressure gage for filling, and preflight. Located for convenient access through the baggage door on the left hand side of the aircraft, just above the floor on the center of the baggage compartment aft wall. An easy access door covers the filler port to prevent damage to the filler from shifting baggage.

Oxygen Distribution Lines and Electrical Wiring Connections
- The oxygen distribution lines allow oxygen to safely enter the aircraft cabin. The electrical connections allow the bottle and oxygen cabin pressure to be transmitted to the cockpit and for cockpit selection of oxygen in the aircraft cabin.

Oxygen Distribution Manifold
- Allows the crew and passengers to connect to the Oxygen System with four (4) quick disconnect fittings with the capability of sealing oxygen flow to the cabin when disconnected.

Oxygen System Display and Display-Logic Controller (DLA)
- The Oxygen System display provides control over the oxygen delivery to the aircraft cabin. This display supports an Annunciator to indicate when oxygen is to be used (above 12,000 ft PA) and an indication of cabin oxygen or electrical actuation fault. The cabin oxygen flashing fault illuminates if cabin oxygen is not – between 60 psig and 85 psig. The electrical actuation fault illuminates if there is an electrical short or open circuit to the latching solenoid at the regulator. The oxygen controller supports these functions and ensures a short duration signal to drive the latching solenoid.

Breathing Equipment
- The breathing equipment can consist of either constant flow and/or demand flow regulator breathing stations. Both use a connection to the distribution manifold. Precise Flight A4 or A5 constant flow devices or "Flowmeters" indicate the flow of oxygen with an integral valve to control the quantity of oxygen reaching the crew or passenger. The PreciseFlow® demand flow conservers are calibrated and adjusted by the user for altitude to supply oxygen to either dual lumen cannulas up to 18,000ft, or dual sensing masks. The flow indicator on this flow device is labeled with appropriate oxygen flow for increasing aircraft altitude. The constant flowmeter or demand regulator is attached to the appropriate approved mask or cannula to deliver oxygen to the crew or passengers.

2.3 Special Tools Required

-Plastic reservoir hand pump
-Chemical-resistant gloves
-Protective eyewear with side shields

Refer to the installation instructions, or drawings for the Precise Flight Built-In Oxygen System.

2.4 Maintenance Instructions

CAUTION: INSTALL PROTECTIVE COVERS ON ALL OPEN LINES AND COMPONENT FITTINGS IMMEADIATELY AFTER THEY ARE DISCONNECTED.

Maintain aircraft structure and wiring in accordance with aircraft maintenance manual and FAA AC43.13.

Precise Flight Inc., www.preciseflight.com, is the approved Overhaul Facility

2.4.1 Bottle Removal and Replacement

The Built-In Oxygen System bottle removal and replacement procedure follows:

WARNING: OXYGEN SYSTEM MUST BE BLED TO ZERO PSI BEFORE ANY MAINTENANCE.

Bleeding Procedure:

1. Aircraft battery power ON, oxygen display panel ON.
2. Connect Flowmeter breathing device to overhead distribution panel and turn Flowmeter to full flow until oxygen is purged from the System and the flashing red 200 PSI quantity LED has been illuminated for 10 minutes and no more oxygen is flowing through the breathing device.
3. Oxygen panel display OFF, aircraft power OFF.

Bottle Removal Procedure:

1. Remove aft fuselage access panel fasteners.
2. Remove and store access panel in a safe location.
3. Detach flexible oxygen line and cap both lines.
4. Disconnect electrical harness.
5. Release the two band clamp restraints.
6. Remove bottle and regulator assembly by first moving the assembly forward and to the left. Remove bottle and regulator assembly aft end of the bottle first.
7. Installation is opposite of removal – Tighten wing nuts until snug and then two more turns to ensure proper tension on clamp bolt.
8. Perform a functional system check following installation (purging per next step can be accomplished during the functional test).
9. Purge the oxygen system by filling the main tank to a minimum of 500psig and bleeding the system down between 50-100psig by following the bleeding procedure prior to filling the system for use.

2.4.2 Filler Station Cleaning

The filler port requires cleaning periodically, and prior to filling, to keep clean of dirt, dust, and oils to prevent fire.

2.4.3 Line Cleaning

Line Cleaning Procedure:

1. Preparation
    a. Obtain a suitable container for collecting fluid waste.
    b. Wear protective gloves and eyewear.
    c. Assemble a reservoir pump and drain line, see Fig 1.
2. Flushing
    a. Fill 2 qt reservoir with 1% Alconox or Liquinox detergent solution. www.alconox.com
    b. Attach reservoir pump to cabin oxygen line.
    c. Pump 2 qt Alconox or Liquinox through oxygen line.
    d. Undo pump connection and rinse pump with clear water.
    e. Fill 2 qt reservoir with clear tap water.
    f. Attach reservoir pump to cabin oxygen line.
    g. Pump 2 qt water through oxygen line.
    h. Repeat steps A through D, rinsing the pump with the next cleaning material.
    i. Pump 1 qt Methyl Alcohol through oxygen line.
    j. Pump 1 qt ASAHIKLIN AK-225 through oxygen line. www.agcchem.com
    k. Purge the line of AK-225 by passing clean dry air through the line.
    l. With the air still flowing, sniff the air exiting the drain line. The absence of odors will verify the line is free of AK-225.
    m. Reconnect lines and restore System to service.

2.4.4 Functional Test

The following test procedure will evaluate the Built-In Oxygen System installation in the aircraft:

1. Check wiring and connections before applying aircraft battery power.
2. Fill Oxygen System with aviators oxygen (see Maintenance Manual or Flight Manual Supplement), leave access panel open.
3. Switch the Oxygen System ON at the oxygen control panel and verify that the Oxygen System quantity display indicates the same oxygen pressure shown at the aft fill port gauge.
4. Connect Flowmeter breathing device to overhead distribution panel.
5. Ensure oxygen flow through a breathing device.
6. Switch the Oxygen System OFF at the oxygen control panel.
7. Turn aircraft battery power off.

2.4.5 Oxygen System Installation

Refer to Precise Flight Inc. drawing list 102N0000 Cirrus Design Built-In Oxygen System for installation and removal of the oxygen system components.

2.4.6 Oxygen System Bleed-Down (Purging)

Use the following procedure to bleed-down the oxygen system should any of the hard lines, non-conductive line be opened, or bottle removed and re-installed/replaced. This procedure is required to prevent contamination, or moisture inside the system.

1. Attach the filler line to the filler port, making sure to purge the line prior to attaching to the aircraft.
2. With the System ON, and flowmeters (or open Connectors) installed in the distribution ports, initiate flow for 1-2min.
3. Removed the flowmeters from the distribution port, and turn the oxygen System OFF, and fill to 650psig.
4. Perform leak checks as required.
5. Turn the System ON and using flowmeters (or open connectors) installed in the distribution ports; bleed the system down to below 50psig (but above 0psig).
6. Repeat steps 3-5 once. (Leak check not required on second purge)
7. Removed the flowmeters from the distribution port, and turn the oxygen System OFF, and fill to 1500psig.
8. Perform Final leak check.
9. Fill System to 1800-2000psig as required.

2.4.7 Oxygen Required Pressure Calibration Check

The Precise Flight, Inc. Fixed Oxygen System is designed with an additional safety feature to indicate O2 is required if the system is off, or there is no pressure at the outlet, when the cabin pressure is at 12,000ft Pressure Altitude (PA). This pressure sensor is internal to the Display Logic Controller (DLA). To ensure this safety feature is functioning properly a check of its function is required during the annual inspection. This may be done by a flight test to altitude, or by a ground test.

Note:	**The Altitude Sensor in the Oxygen System Display Logic Assembly is NOT connected to the aircraft static system.**

Note:	**Not All aircraft are equipped with a Display Logic Assembly where a test port is available. In these cases the flight test is the only approved method for testing the calibration.**

2.4.7.1 Flight Test (Method A)

Method A of checking the calibration is by flight test. This flight is intended to be done during the maintenance release flight following the annual inspection. The procedure is to fly to 11,000ft PA (alt setting of 29.92inHg) and during the climb to 12,500ft PA with the oxygen system OFF, note the altitude which the O2 Required Amber light begins to flash. This should occur between 11,500ft PA and 12,500ft PA if the system is operating normally.

2.4.7.2 Ground Test (Method B)

Method B for checking the calibration is by ground test. The ground test requires the removal of pilots side Aft Trim Panel to gain access to the Display Logic it Controller (DLA), and is recommended that this be performed with the seats removed, and the LH (Pilots) side Aft Trim Panel must be removed.

Note:	**This should be performed during the Cabin Group Inspection as part of the Annual inspections. In the case of a progressive Maintenance Program, this test should be accomplished as close to once every year, not to exceed 18months.**

Use the flowing procedure for the ground test method for the DLA pressure calibration check:

1. Remove the Pilot Seat if not already removed as part of the annual maintenance check, cabin group.
2. Remove the LH Aft Trim Panel if not already removed as part of the annual maintenance check, cabin group to gain access to the DLA. (See Figure 2)

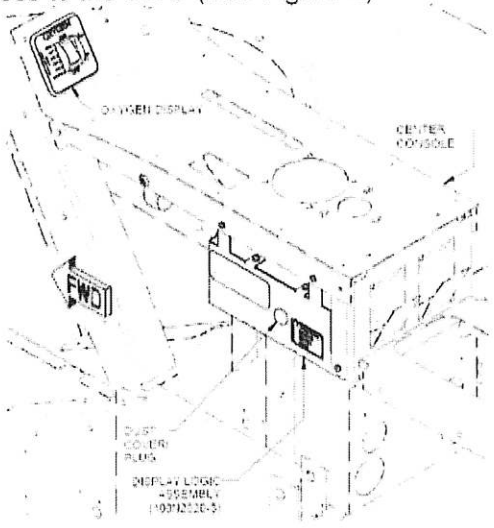

Figure 2 - Location of Oxygen System Display Logic Controler

3. Check general condition of the wiring, and DLA.
4. Remove the Dust Cover/Plug. (See Figure 3)

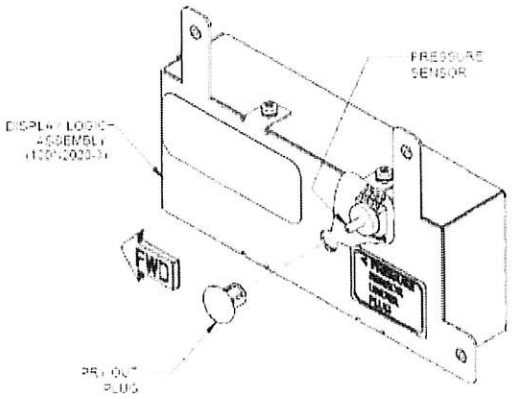

Figure 3 - Removal of the Dust Cover Plug

5. Using a soft rubber or simulate tube with and Inside Diameter (ID) of 7/16in, connect one end to the pressure sensor nipple, and the other to the static line on a Pitot-Static Test system with pump.

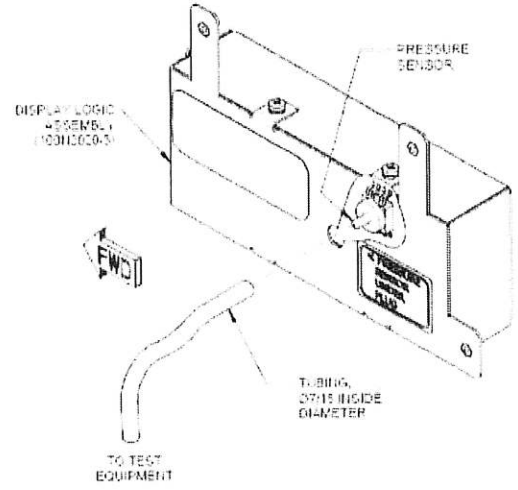

Figure 4 - Attachment of the Static Test Hose

CAUTION: CARE MUST BE TAKEN DURING THE INSTALLATION AND REMOVAL OF THE 7/16DIA INSIDE DIAMETER TUBING TO PREVENT DAMAGE TO THE SENSOR AND/OR THE CONTROLER CIRCUIT. DO NOT YANK, OR PULL EXCESSIVLY DURING THE REMOVAL OR DAMAGE WILL OCCUR AND THE UNIT MUST BE REPLACED.

6. With the aircraft in a safe condition to power up the Main Bus 2, turn ON the main bus 2 with the oxygen system off.
7. Cycle the system ON and OFF to ensure the system is functioning, use a breathing device to ensure flow is present. With the system OFF, let the oxygen 'bleed down' prior to removing the breathing device.

8. Using the static portion of the Pitot-Static tester, increase the static altitude slowly to 11,000ft PA. Continue increasing the altitude and note when the display indicates "O2 required" as signified on the display by the flashing amber LED. Note the altitude which this occurred.
9. Verify the altitude where the indication first occurred:
    a. If indication is between 11,500ft PA and 12,500ft PA, then proceed to the next step.
    b. If the indication is outside of this range, re-verify the indication. If the DLA fails a second time, remove the DLA and replace, or contact PFI for re-adjustment.
10. Turn Aircraft power off.
11. Remove the pressure tubing taking extra care not to damage the DLA pressure transducer.
12. Re-install the dust cover/plug.
13. Note passing test as required.

2.5 Trouble Shooting Guide

2.5.1 Oxygen System Fails to Operate

a. Check circuit breaker.
b. Check connector plugs for security and contact insertion.
c. Check wiring diagram against aircraft installation. See Section 2.8.
d. Check the system function per section 2.5.2.

2.5.2 Oxygen System Trouble Shooting Flow Chart

This section is for reference when troubleshooting the PFI Fixed Oxygen System, if used, and parts returned, please copy steps taken for reference.

CAUTION: Pressures above 105psig on the Low-Pressure side will damage the Low-Pressure Transducer and will Require the Transducer to be Replaced.

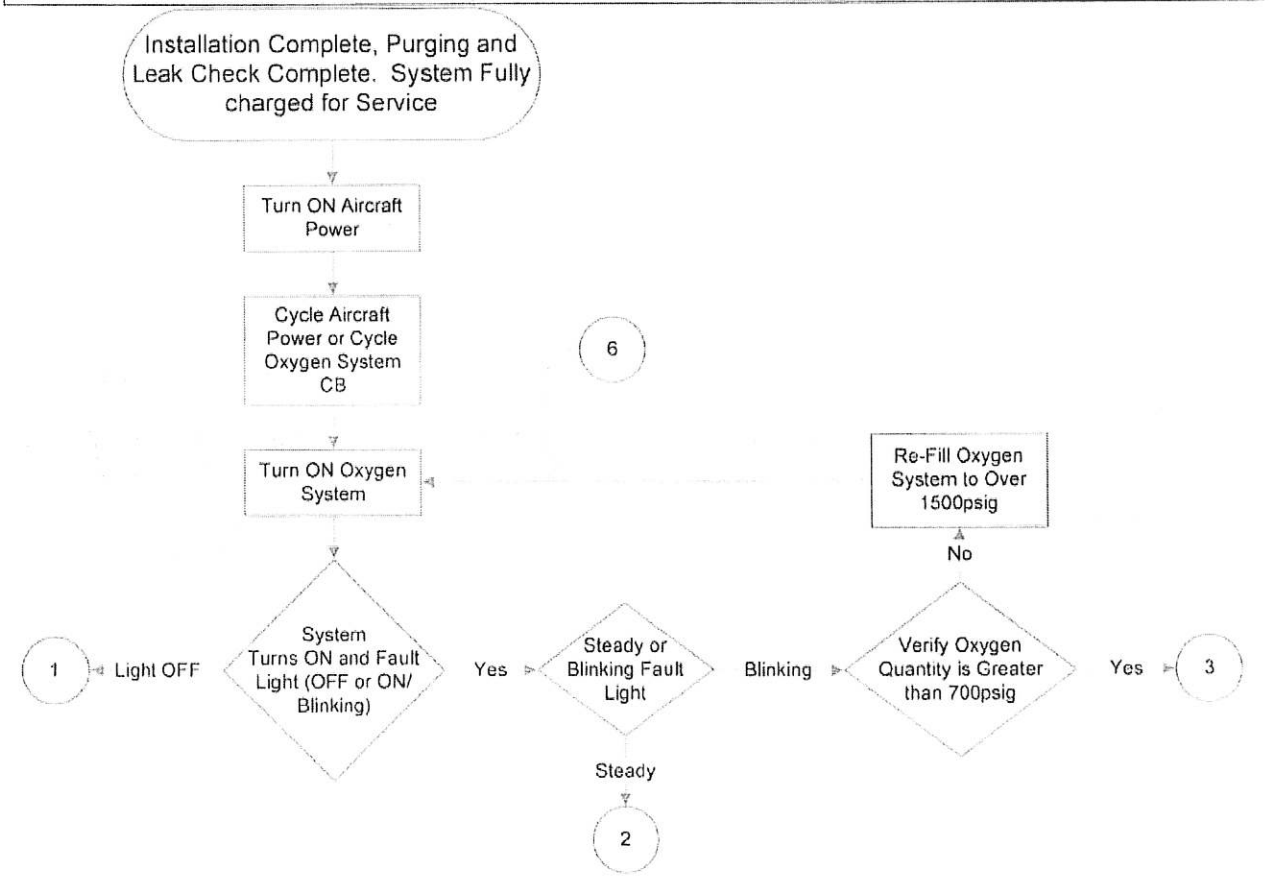

Figure 5 –Trouble Shooting FlowChart (6)

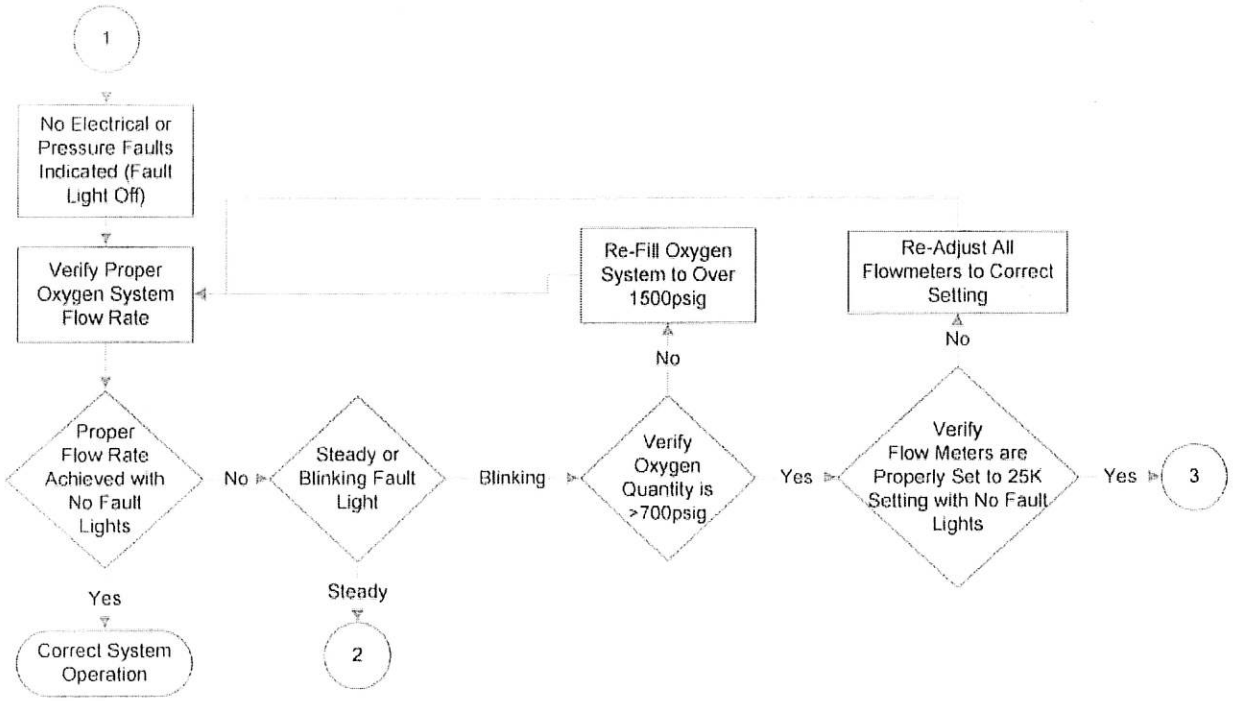

Figure 6 - Trouble Shooting Flow Chart (1)

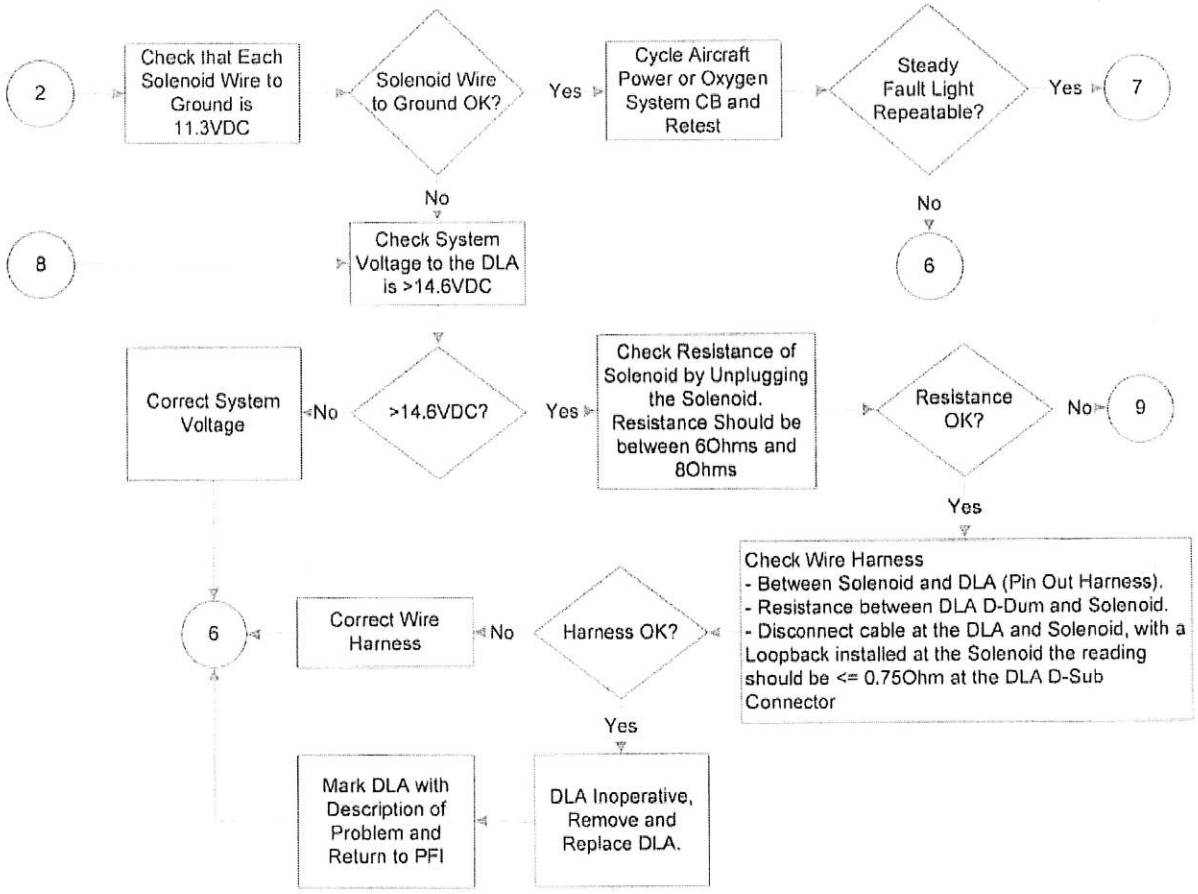

Figure 7 - Trouble Shooting Flow Chart (2 & 8)

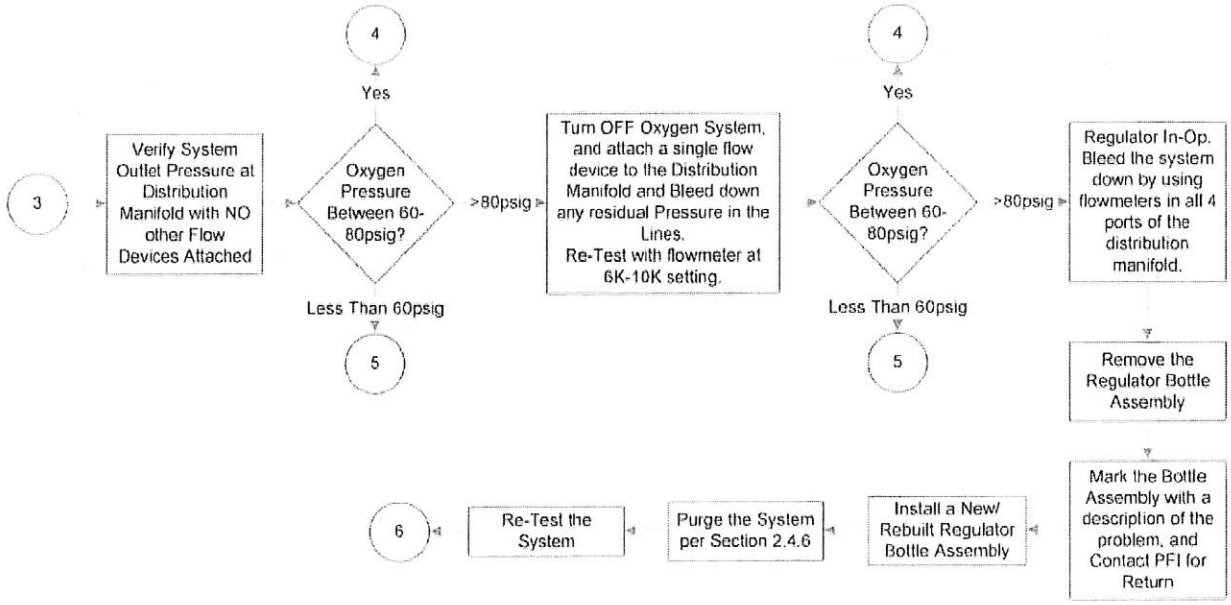

Figure 8 - Trouble Shooting Flow Chart (3)

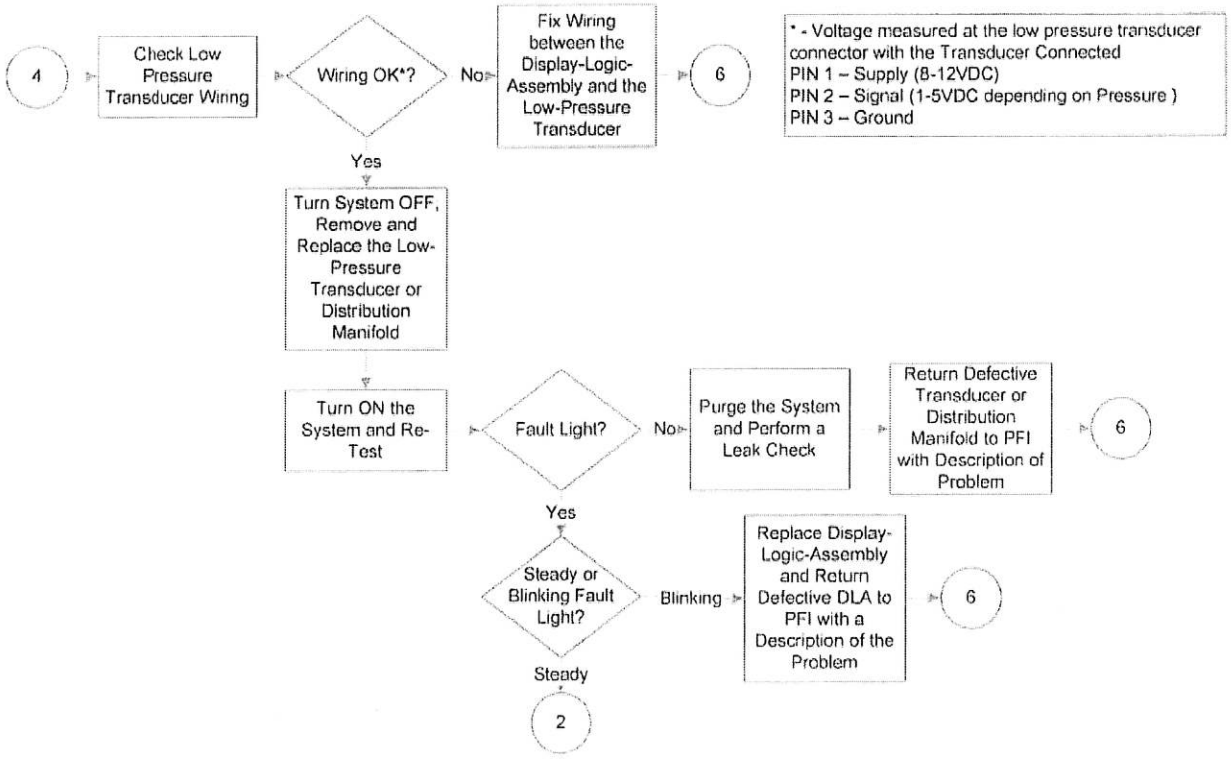

Figure 9 - Trouble Shooting Flow Chart (4)

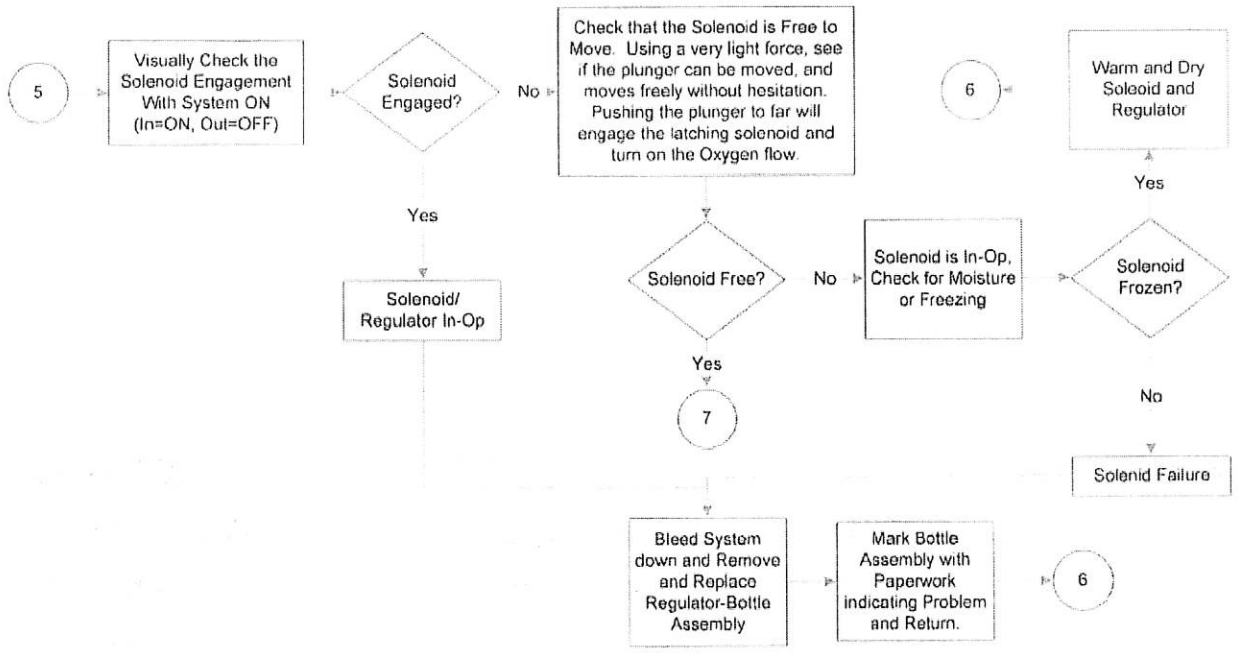

Figure 10 - Trouble Shooting Flow Chart (5)

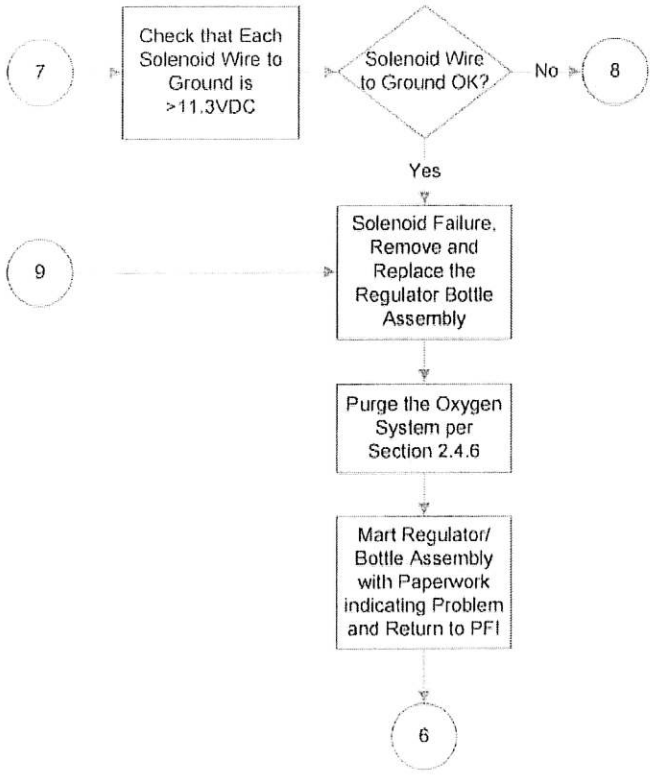

Figure 11 - Trouble Shooting Flow Chart (7 & 9)

2.5.3 Additional Technical Assistance

Please call Precise Flight, Inc., www.preciseflight.com, 800-547-2558 or 541-382-8684.

2.6 AIRWORTHINESS LIMITATIONS

This Airworthiness Limitations Section is FAA Approved and Specifies maintenance required under Sections 43.16 and 91.403 of the Federal Aviation Regulations, unless an alternative program has been FAA Approved.

None – The operation of the Built-In Oxygen System does not impact the airworthiness limitations, and is not required for normal flight.

Note:	**To maintain the altitude capability of the aircraft, the Scheduled Maintenance Intervals and Inspections must be maintained.**

2.7 Scheduled Maintenance Intervals and Overhaul Intervals for Inspections for Continued Airworthiness

For this section, the 50hr, 200hr, and 500hr are time of oxygen system in use. Annual and yearly inspection intervals are calendar intervals. Section 2.7.1 and Table 2 provides a checklist version of this for maintenance work.

Table 1 - Scheduled Maintenance Intervals and Inspections

Cirrus Design SR22/SR22T BUILT-IN OXYGEN SYSTEM		15 YEARS	5 YEARS	3 YEARS	ANNUALLY	EACH 500 HOURS OF USE	EACH 200 HOURS OF USE	EACH 50 HOURS OF USE
1.	Check flexible lines for security of connections, kinks or tube discoloration.				•			•
2.	Replace oxygen cannulas and/or oxygen masks.						•	
3.	Replace or overhaul microphone oxygen mask.					•		
4.	Perform functional test per Section 2.4.3. Follow Cirrus Maintenance Manual and this document for general aircraft wiring system checks and headliner removal. Oxygen Wiring Diagram is in the Appendix. Check security of oxygen bottle mounting; re-torque wing nuts to snug and two turns tight. If contamination is found, clean oxygen lines. See 2.4.2. Check security of oxygen lines, and check bonding continuity on cabin oxygen line to ensure resistance to aircraft ground is no more than 0.0025Ω (2.5mΩ) between any metal to metal connections on the System. Clean and check condition of the filler port and insure filler cap is present. Confirm that "O2 REQ"D" annunciator illuminates at 12,000 ft + 500 ft Pressure Altitude					•		
5.	Replace O-Ring in CPC Connector Assembly on the breathing stations						•	
6.	Purge Oxygen System. See Maintenance Manual. Remove and hydrostatically test the oxygen cylinders from date marked on cylinder. Overhaul regulator/valve assembly – replace O-Rings, verify regulator pressure setting. If contamination is found, clean oxygen lines. See 2.4.2. Inspect oxygen lines and fittings for leaks, cracks or damage. Leak check with Snoop or equivalent. wwww.swagelok.com. Replace flexible oxygen lines on breathing stations. Replace O-Ring in CPC connector assembly identified on the breathing stations. Overhaul A4 and/or A5 Constant Flowmeters.						•	
7.	Replace composite wrapped oxygen cylinder. Overhaul regulator/valve assembly – replace O-Rings, verify regulator pressure setting. Replace non-conductive low-pressure oxygen line between the regulator and the AL hard-lines. Inspect oxygen lines and fittings for cracks, leaks or damage. Leak check with Snoop or equivalent. wwww.swagelok.com. Purge Oxygen System. Replace flexible oxygen lines on breathing stations. Replace O-Ring in CPC connector assembly identified on the breathing stations. Overhaul A4, and/or A5 Constant Flowmeters and PreciseFlow® Demand Conservers.							•

Notes:

1. Applicable to aircraft with Solid Green (Kevlar) Oxygen Bottle (PFI P/N 026N2001-3)
2. Applicable to aircraft with Striped Green (Carbon) Oxygen Bottle (PFI P/N 026N2003-3)

2.7.1 Scheduled Maintenance Checklist

For this section, the 50hr, 200hr, and 500hr are time of oxygen system in use. Annual and yearly inspection intervals are calendar intervals.

Aircraft Registration Number	Aircraft Serial Number	Total Time	Hobbs Time	Inspection Completion Date

Table 2 - Scheduled Maintainance Checklist

Item	Inspection Criteria	50hr	200hr	500hr	Annual	3 Year	5 Year	15 Year
	Breathing Station Group							
1	Check Breathing Stations a) Check tubing connections for security b) Check tubing for kinks or discoloration and general cleanliness c) Check condition of flowmeters or PreciseFlow® d) Check flow indicator on PreciseFlow® for cracks, stickiness, general condition e) Check Cannulas and Masks for general condition, cleanliness, or discoloration Initials:_____ Date:_____	•						
2	Replace Oxygen Cannulas and Standard (Clear) Masks a) Replace Standard Cannula as required and mark in-service date on new part. b) Replace Oxymizer Cannula as required and mark in-service date on new part. c) Replace PrecieFlow® Dual Lumen Cannula as required and mark in-service date on new part. d) Replace Standard (Clear) Facemask as required and mark in-service date on new part. e) Replace Standard (Clear) PreciseFlow® Facemask as required and mark in-service date on new part. Initials:_____ Date:_____		•					
3	Replace/Overhaul Oxygen Facemasks with Microphone (Blue) a) Replace or Overhaul Facemask with Microphone (Blue) as required and mark in-service date on New or Overhauled part. b) Replace or Overhaul PreciseFlow® Facemask with Microphone (Blue) as required and mark in-service date on New or Overhauled part. Initials:_____ Date:_____			•				
4	Replace O-Rings in CPC connectors on Breathing Stations. Initials:_____ Date:_____					•		
5	Replace/ Overhaul A4 and or A5 Constant Flowmeters and PreciseFlow® Oxygen Conservers						•	

Item	Inspection Criteria	50hr	200hr	500hr	Annual	3 Year	5 Year	15 Year
	a) Replace or Overhaul A4 or A5 Constant Flowmeters as required and mark in-service date on New or Overhauled part. b) Replace or Overhaul PreciseFlow® Oxygen Conservers as required and mark in-service date on New or Overhauled part. c) Replace flexible oxygen lines on breathing stations, part of replacement or overhaul. Initials:_____ Date:_____							
	Oxygen System Installation Group							
5	Functional Check a) Perform a functional check per section 2.4.4 of this document. Initials:_____ Date:_____				•			
6	Check Wiring a) Using the Cirrus Maintenance Manual and this document, check the general wiring system including the portion of the oxygen system behind interior panels. b) See section 2.8 for oxygen system wiring schematic. Initials:_____ Date:_____				•			
7	Check Oxygen System a) Check the security and condition of the oxygen bottle assembly in the tail of the aircraft. If contamination is found in oxygen lines, clean oxygen lines per section 2.4.3. Normal checks do not required the oxygen lines to be opened for inspection. b) Re-torque nuts for bottle mounting to 8in-lbs as required c) Check the security of oxygen lines and verify electrical continuity. Must be less than 0.0025Ω (2.5mΩ) between any connections. IE: tube to fitting, fitting to tube. d) Clean and check filler port and insure filler cap is present. Initials:_____ Date:_____				•			
8	Check Altitude Annunciator (Refer to Section 2.4.7) a) Verify that the "O2 REQ'D" indicator light on the display and if present the "OXYGEN REQUIRED" panel mount illuminate if the oxygen system is in the OFF position and the aircraft 12,000ft +- 500ft Pressure Altitude. Initials:_____ Date:_____				•			
	Aircraft with Solid Green (Kevlar) Oxygen Bottle (PFI P/N 026N2001-3)							
9	Hydrostatic Test Oxygen Bottle a) Remove Oxygen Bottle Assembly and return to Precise Flight Inc for Bottle Hydrostatic test and Regulator Overhaul. a. Overhaul regulator/valve assembly – Clean regulator, replace O-Rings, and verify regulator pressure. b. Hydrostatic test the bottle and replace as required.						•	

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Item	Inspection Criteria	50hr	200hr	500hr	Annual	3 Year	5 Year	15 Year
	b) Cap oxygen lines to prevent contamination. If oxygen lines become contaminated, or contamination found, clean lines per Section 2.4.3 of this report. c) Re-Install Overhauled Regulator Valve Assembly and New Bottle. d) Bleed Down (Purge) Oxygen System per Section 2.4.6. e) Perform a functional check per section 2.4.4 of this document. Initials:_____ Date:_____							
	Aircraft with Striped Green (Carbon) Oxygen Bottle (PFI P/N 026N2003-3)							
12	Hydrostatic Test Oxygen Bottle a) Remove Oxygen Bottle Assembly and return to Precise Flight Inc for Bottle Hydrostatic test and Regulator Overhaul. a. Overhaul regulator/valve assembly – Clean regulator, replace O-Rings, and verify regulator pressure. b. Hydrostatic test the bottle and replace as required b) Cap oxygen lines to prevent contamination. If oxygen lines become contaminated, or contamination found, clean lines per Section 2.4.3 of this report. c) Re-Install Overhauled Regulator Valve Assembly and New Bottle. d) Bleed Down (Purge) Oxygen System per Section 2.4.6. e) Perform a functional check per section 2.4.4 of this document. Initials:_____ Date:_____						•	

- Checklist Continued -

	All Aircraft							
15	Replace Oxygen Bottle a) Remove Oxygen Bottle Assembly and return to Precise Flight Inc for Bottle replacement and Regulator Overhaul. a. Overhaul regulator/valve assembly – Clean regulator, replace O-Rings, and verify regulator pressure. b) Cap oxygen lines to prevent contamination. If oxygen lines become contaminated, or contamination found, clean lines per Section 2.4.3 of this report. c) Re-Install Overhauled Regulator Valve Assembly and New Bottle. d) Bleed Down (Purge) Oxygen System per Section 2.4.6. e) Perform a functional check per section 2.4.4 of this document. Initials:_____ Date:_____							•

- End of Checklist -

2.8 System Wiring Diagram

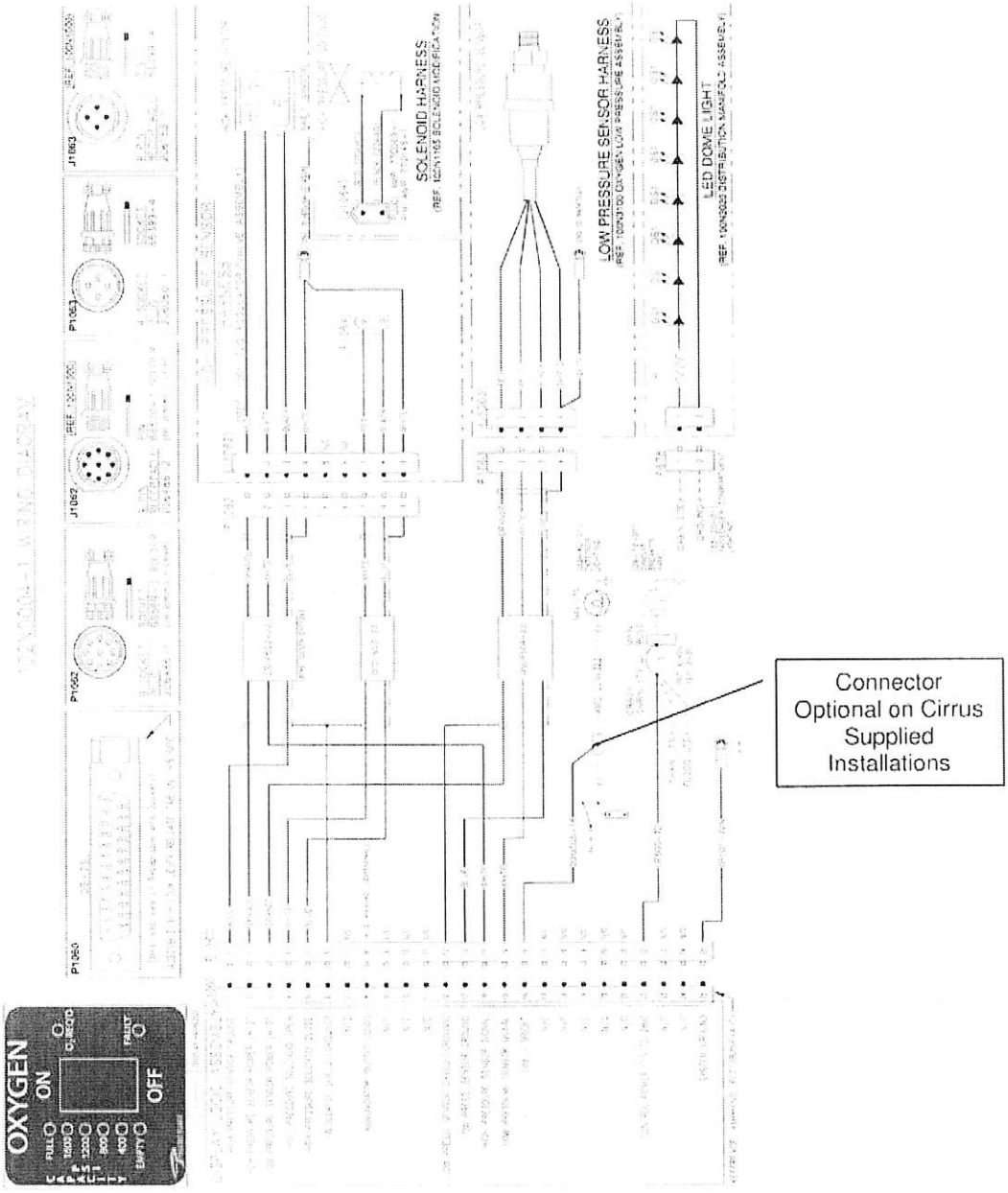

Figure 12 - System Wire Diagram

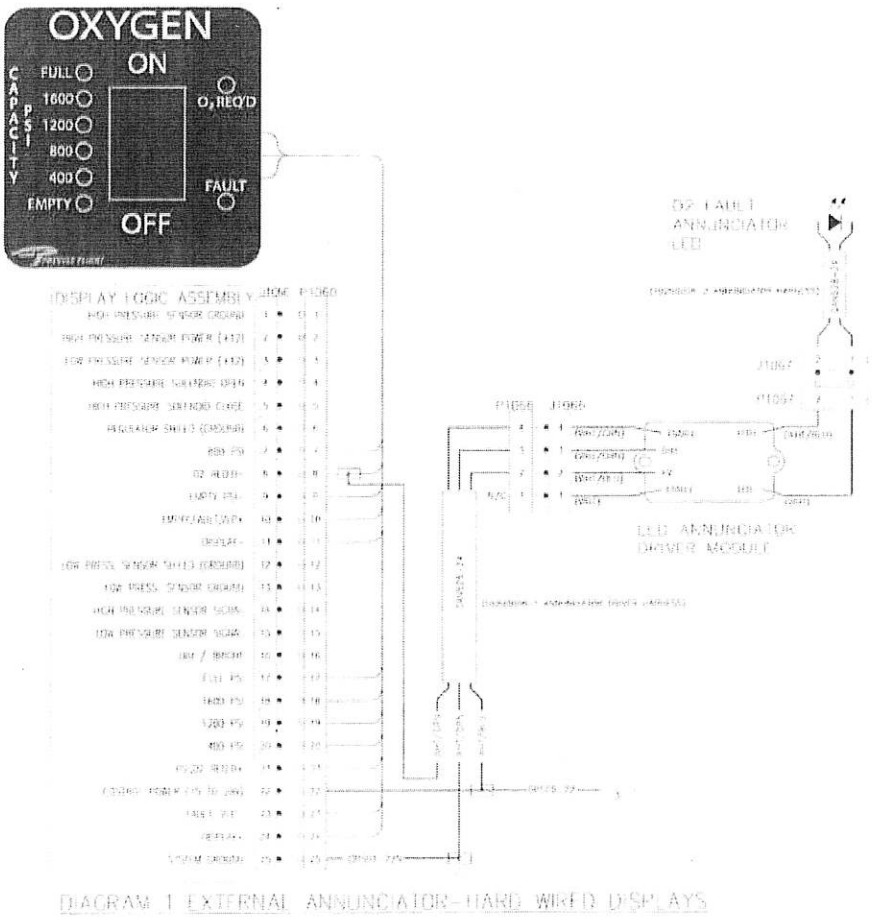

Figure 13 - OPTIONAL - Remote Annunciator Wire Diagram

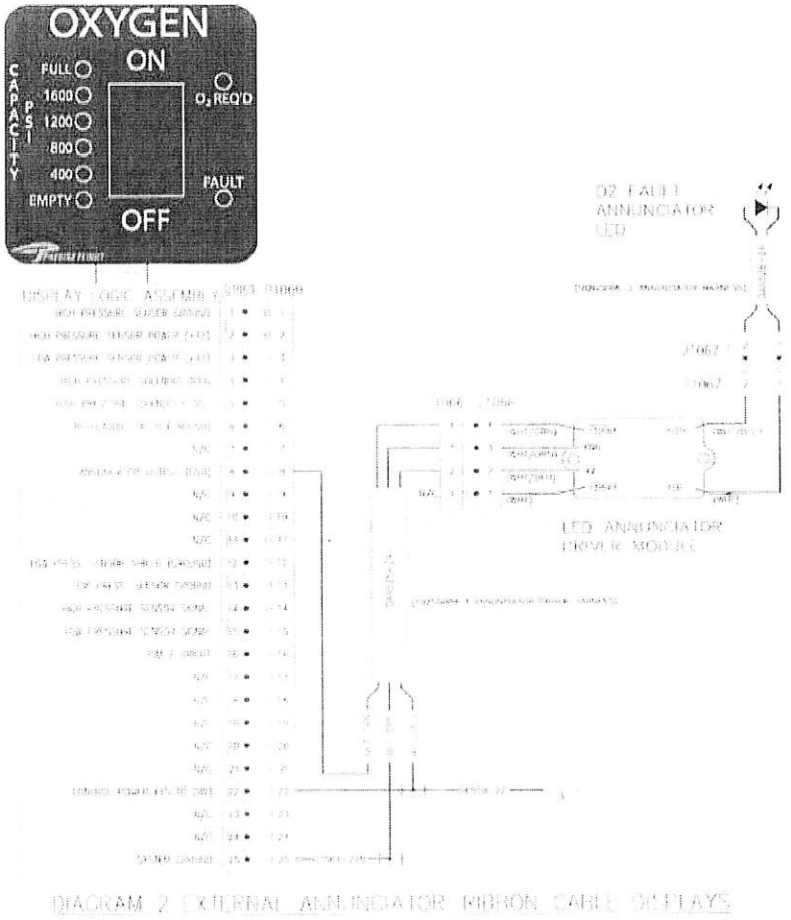

Figure 14 - OPTINAL - Remote Annunciator Wirediagram (Ribbon Cable Installations)

3.0 Illustrated Parts Catalog

3.1 Purpose

This section is not FAA accepted or FAA Approved and is for information only to aid in the maintenance and ordering replacement parts for the Precise Flight Built-In Oxygen System.

3.2 Overview

See Figure 1 for system overview picture.

3.3 Breathing Stations

This section lists the replacement breathing station equipment available for the Cirrus SR22/SR22T Built-In Oxygen System.

3.3.1 Constant Flow Breathing Equipment

NOTE

The original Precise Flight, Inc. A4 Constant Flowmeter has been replaced by the A5 Constant Flowmeter for replacement parts. The Masks and Cannulas are interchangeable between the Constant Flow Meters Only.

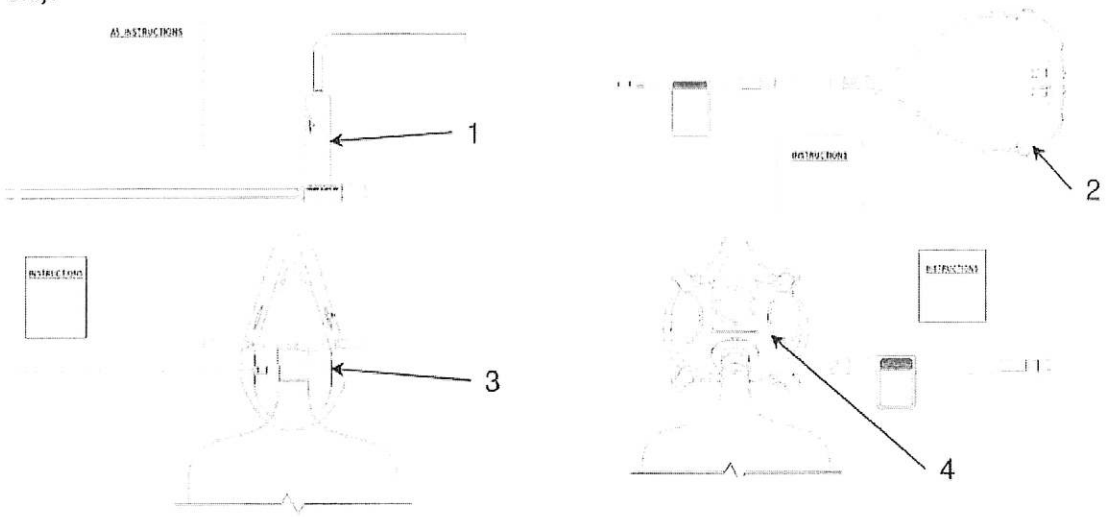

Figure 15 - Replacement Constant Flow Breathing Equipment

Fig.	Item	PFI Part Number	Nomenclature	Effective
Figure 15	1	027N0003-1	A5 Flowmeter with CPC Connector	All
Figure 15	2	020N0001-1	Oxymizer Cannula	All
Figure 15	3	020N0002-1	Face Mask	All
Figure 15	4	020N0005-1	Face Mask with Microphone "Blue"	All

PFI Kit Part Number	Fig.	Item	Qty.	PFI Part Number	Nomenclature
027N0305-1	-	-	-	-	A5 Assembly with Cannula - Face Mask, CPC, Kit
	Figure 15	*1*	*1*	*027N0003-1*	*A5 Flowmeter with CPC Connector*
	Figure 15	*2*	*1*	*020N0001-1*	*Oxymizer Cannula*
	Figure 15	*3*	*1*	*020N0002-1*	*Face Mask*
027N0306-1	-	-	-	-	A5 Assembly with Cannula – Face Mask with Microphone, CPC, Kit
	Figure 15	*1*	*1*	*027N0003-1*	*A5 Flowmeter with CPC Connector*
	Figure 15	*2*	*1*	*020N0001-1*	*Oxymizer Cannula*
	Figure 15	*4*	*1*	*020N0005-1*	*Face Mask with Microphone "Blue"*

3.3.2 PreciseFlow Demand Flow Breathing Equipment

NOTE

The Cirrus Built-In Oxygen System requires the PreciseFlow with CPC and In-Line Regulator. The PFI Semi-portable oxygen systems use a different pressure and are not compatible with the Built-In Oxygen System.

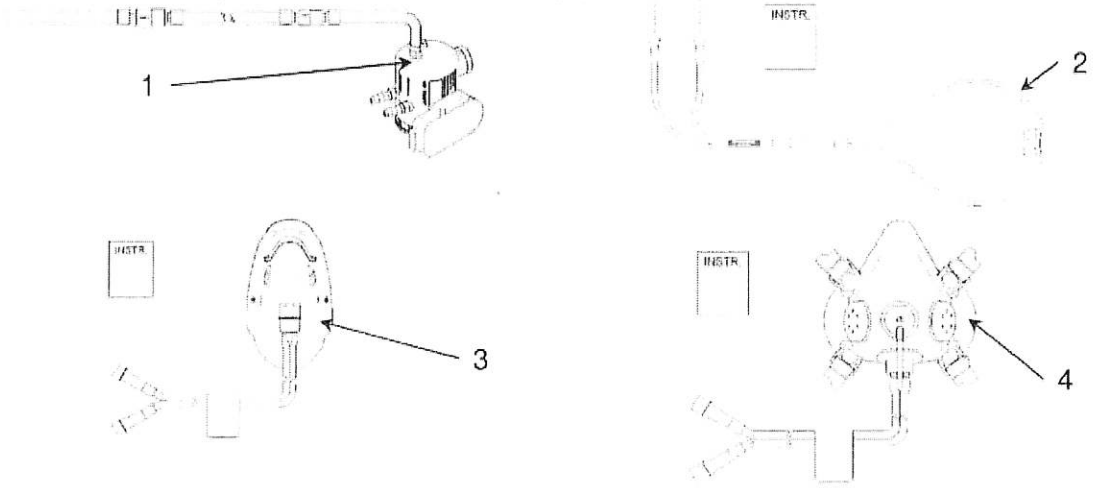

Figure 16 - Replacement PreciseFlow Demand Breathing Equipment

Fig.	Item	PFI Part Number	Nomenclature	Effective
Figure 16	1	027N1002-1	PFOC, Inline Regulator Assembly, CPC	All
Figure 16	2	020N0050-1	PFOC (Dual Lumen) Cannula	All
Figure 16	3	020N0060-1	PreciseFlow Face Mask	All
Figure 16	4	020N0070-1	PreciseFlow Face Mask with Microphone	All

PFI Kit Part Number	Fig.	Item	Qty.	PFI Part Number	Nomenclature
027N1101-6	-	-	-	-	PFOC with PFOC Cannula/Face Mask, Inline Regulator Kit
	Figure 16	*1*	*1*	*027N1002-1*	*PFOC, Inline Regulator Assembly, CPC*
	Figure 16	*2*	*1*	*020N0050-1*	*PFOC (Dual Lumen) Cannula*
	Figure 16	*3*	*1*	*020N0060-1*	*PreciseFlow Face Mask*
027N1102-6	-	-	-	-	PFOC with PFOC Cannula/Face Mask with Microphone, Inline Regulator, Kit
	Figure 16	*1*	*1*	*027N1002-1*	*PFOC, Inline Regulator Assembly, CPC*
	Figure 16	*2*	*1*	*020N0050-1*	*PFOC (Dual Lumen) Cannula*
	Figure 16	*4*	*1*	*020N0070-1*	*PreciseFlow Face Mask with Microphone*

3.4 Overhead Distribution Manifold Installation

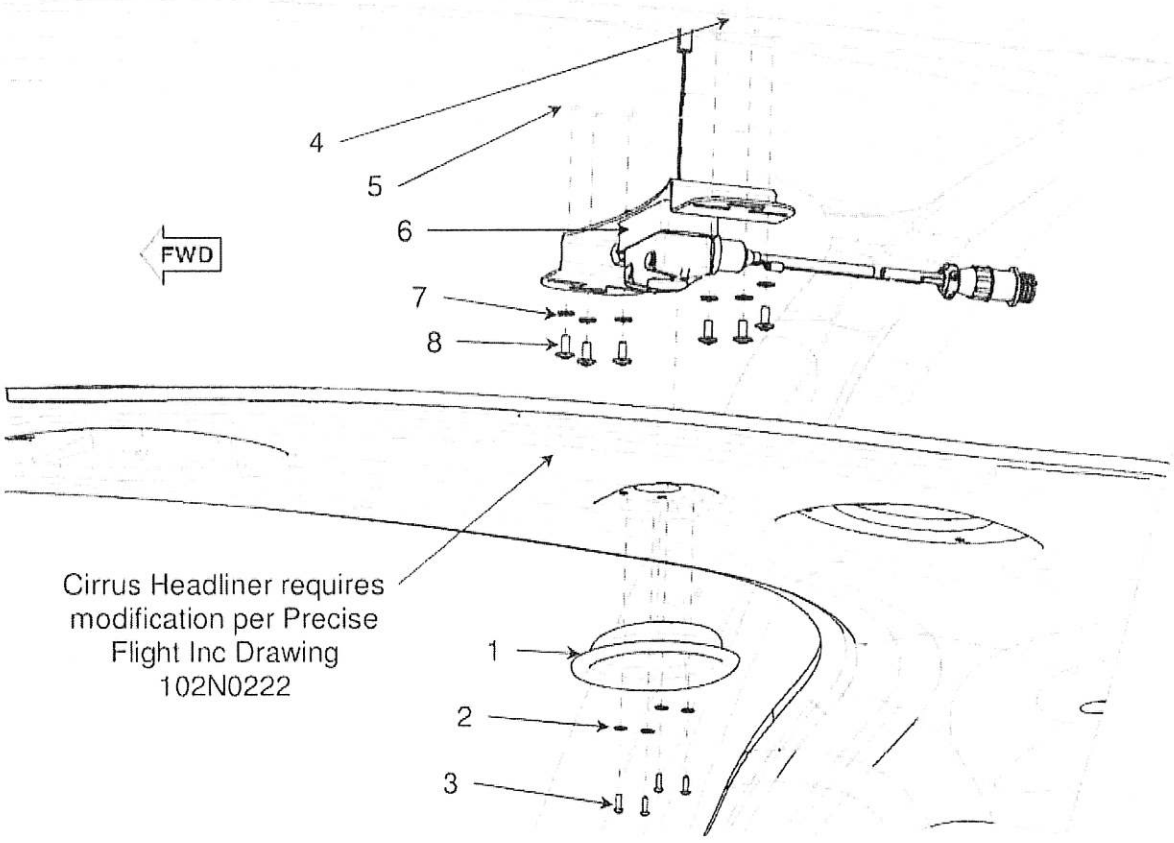

Figure 17 – Overhead Distribution Manifold

Fig.	Item	PFI Part Number	Nomenclature	Effective
Figure 17	1	102N0221-1	Manifold Trim Ring	All
Figure 17	2	HD 07091	#4 Black Oxide Washer	All
Figure 17	3	HD 07090	4-40 x 3/8 Button Head Cap Screw, Black Oxide	All
Figure 17	4	EL 03046 CDC 50379-002	Copper Foil Tape, Tin Plated 4"	All
Figure 17	5	NAS1329A3-80	Insert	All
Figure 17	6	102N0232-1	Manifold and Bracket Assembly	All
Figure 17	7	MS 35335-32	#10 Ext. Star Lock Washer	All
Figure 17	8	AN525-10R7	10-32 x 0.4375L Washer Head Machine Screw	All

3.5 Oxygen Low Pressure Line Installation

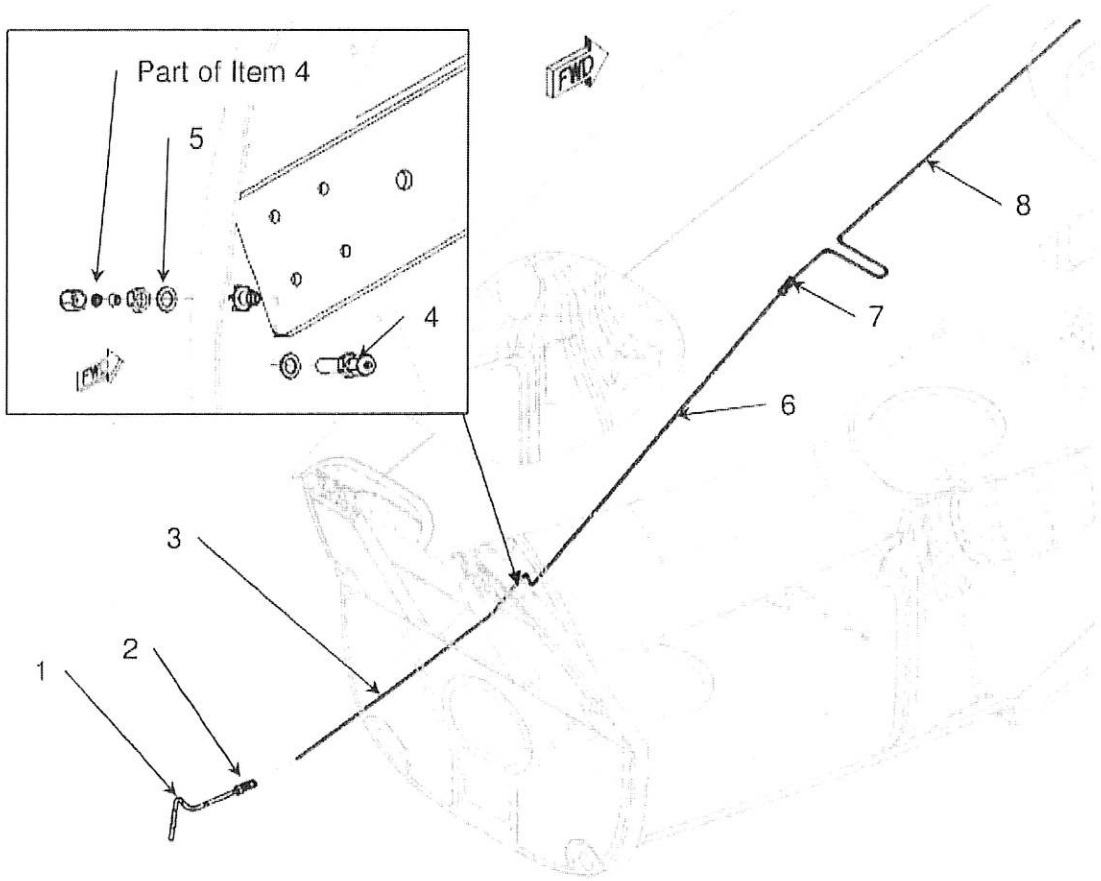

Figure 18 - Low Pressure Line Installation

Fig.	Item	PFI Part Number	Nomenclature	Effective
Figure 18	1	102N0253-1	Flexible Tubing Sub-Assembly	All
Figure 18	2	HD 07107	Fitting, Reducing Union	All
Figure 18	3	102N0252-1	Aft Fuselage Low Pressure Line	All
Figure 18	4	HD 06057	Bulkhead Union Fitting	All
Figure 18	5	NAS1149F0632P	3/8ID x 5/8OD Washer	All
Figure 18	6	102N0251-2	Aft Cabin Low Pressure Line	All
Figure 18	7	HD 07094	Fitting, OX Coupler	All
Figure 18	8	102N0251-1	Forward Cabin Low Pressure Line	All

3.6 Oxygen Bottle Installation

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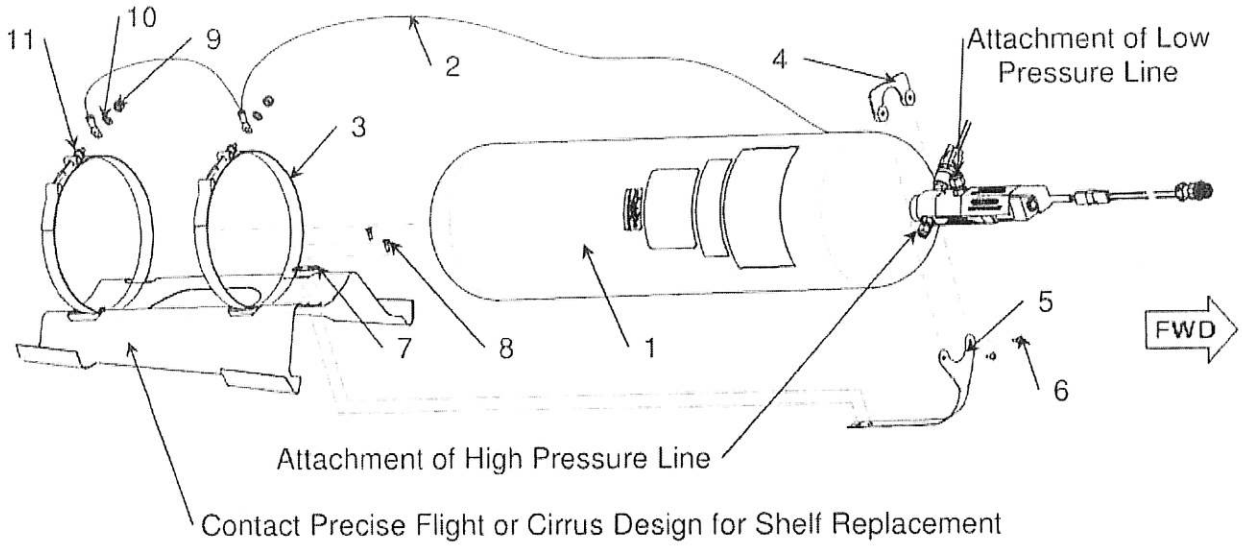

Figure 19 - Bottle Installation

Fig.	Item	Part Number	Nomenclature	Effective
Figure 19	1	100N0020-4	Bottle Assembly, 77cuft, Remote Fill, 70psig	All
		100N0020-5	Bottle Assembly, 77cuft, Remote Fill, SAE, 70psig[1]	
Figure 19	2	102N0006-1	Cirrus Fixed Oxygen System – Ground Strap	All
Figure 19	3	102N0120-1	Band Clamp Assembly, 77cuft Bottle	All
Figure 19	4	CDC 16524-002	U-Clamp, Oxygen Bottle	All
Figure 19	5	CDC 16523-001	Strap, Oxygen Bottle	All
Figure 19	6	MS27039-0805	Screw, Pan Head Structural #8-32	All
		NAS1149FN832P	Washer, 0.32" Thick	
Figure 19	7	CDC 16522-001	Pad, Aluminum, Oxygen Bottle	All
Figure 19	8	MS24694S5	Screw, Counter Sunk, Structural #8-32	All
		MS21083N08	Nut, #8-32	
		NAS1149FN832P	Washer, 0.32" Thick	
Figure 19	9	(Part of item 3)	¼-28 Nylock Nut	All
Figure 19	10	(Part of item 3)	AN960-4R – ¼ Washer	All
Figure 19	11	(Part of item 3)	AN316-4R - ¼-28 Nut	All

Notes: 1 – Bottle assembly is available in NPT or SAE ports for the filler line and low pressure outlet connections. Verify part number prior to ordering a replacement.

3.7 Display/Logic Assembly Installation

NOTE

The Cirrus Built-In Oxygen System has three (3) display/controller configurations. When replacing components take extra care to make sure the correct part is ordered or replaced per the Precise Flight, Inc. installation drawings.

3.7.1 Display and Controller Installations - Standard Installation

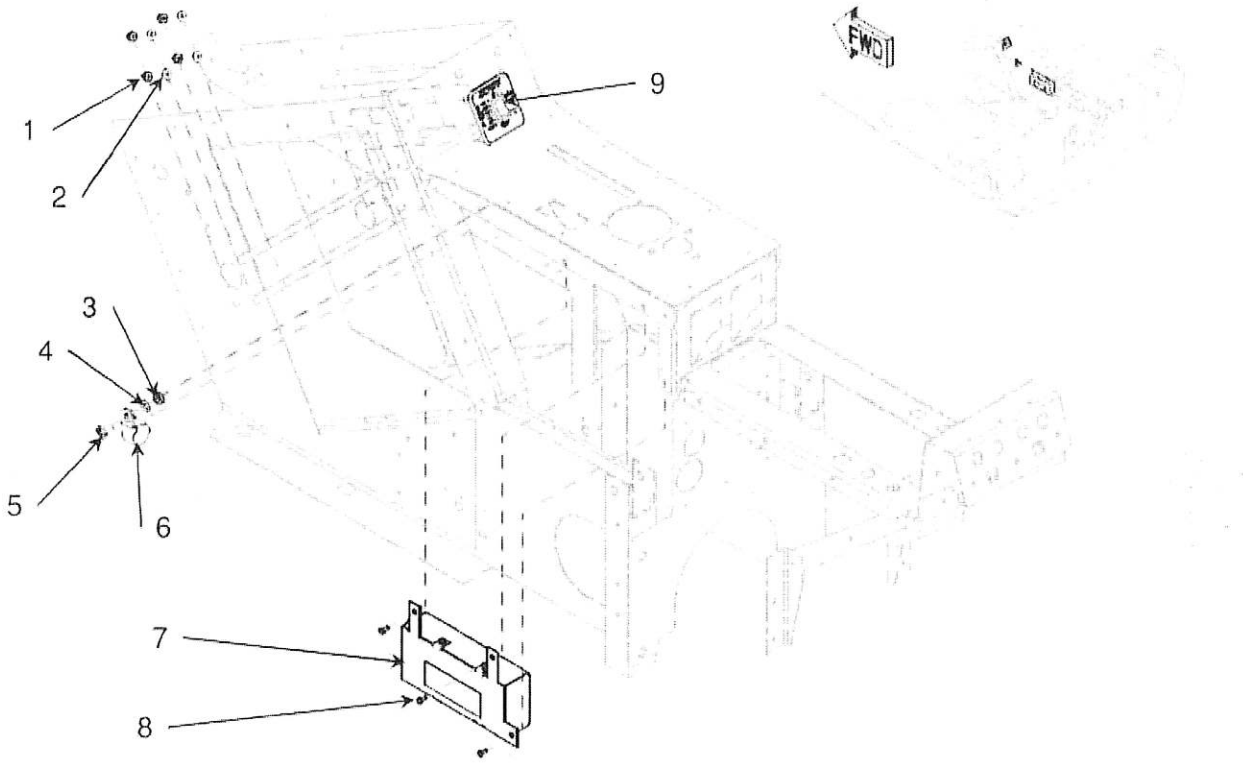

Figure 20 - Display and Logic Assembly Installation

Fig.	Item	PFI Part Number	Nomenclature	Effective
Figure 20	1	AN365-632A	6-32 Nylock Nut	All
Figure 20	2	AN960-6	#6 Flat Washer	All
Figure 20	3	AN365-1032A	10-32 Nylock Nut	All
Figure 20	4	AN960-10L	#10 Flat Washer 0.032 THK.	All
Figure 20	5	AN525-10R7	10-32 x 0.4375L Washer Head Machine Screw	All
Figure 20	6	MS21919-DG6	#6 Adel Clamp With Cushion	All
Figure 20	7	100N2020-3	Display Logic Assembly, Remote – Low Profile	All
Figure 20	8	MS35206-213	Screw 4-40 x ¼ PH HD	All
Figure 20	9	100N2120-2	Display Assembly, Low Resolution	All

Notes: Special care must be taken when replacing the Display Logic Assembly, and/or the Display Assembly to make sure they are compatible with the wire harness.

3.7.2 Display and Controller Installations - Ribbon Cable

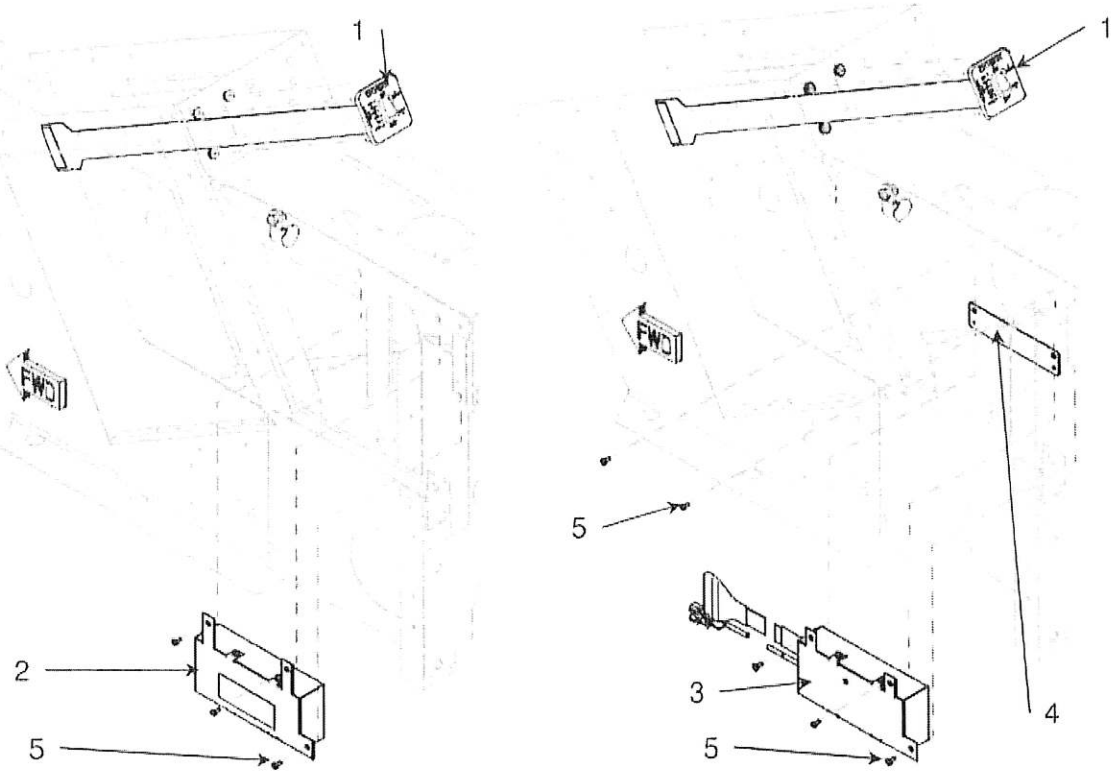

Figure 21 - Alternate Display and Logic Assembly Installations

Fig.	Item	PFI Part Number	Nomenclature	Effective
Figure 21	1	100N2120-1	Display Assy, Low Resolution, with Ribbon Cable	All
Figure 21	2	100N2020-3	Display Logic Assy, Remote – Low Profile	All
Figure 21	3	100N2020-1	Display Logic Assy, Remote – Low Profile, Slide Lock	All
Figure 21	4	102N0320-1	Spacer Plate Adapter	All
Figure 21	5	MS35206-213	Screw, 4-40 x ¼ PH HD	All

Notes: Special care must be taken when replacing the Display Logic Assembly, and/or the Display Assembly to make sure they are compatible with the wire harness. If a direct part number replacement is not available, contact Precise Flight Inc. with part numbers for the Wire Harness, Display, and Display Logic Assembly. (New installations are in the Figure 20 configuration)

3.7.3 Display and Controller Installation – Cirrus Perspective

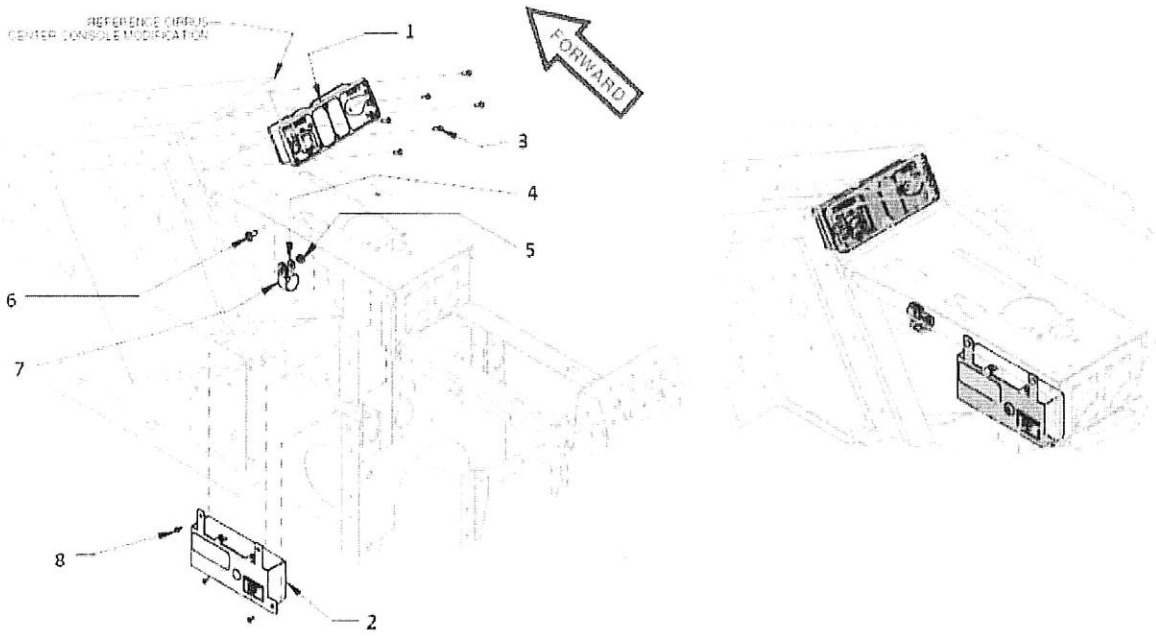

Figure 22 - Display and Logic Assembly Installations – Cirrus Perspective

Fig.	Item	PFI Part Number	Nomenclature	Effective
Figure 22	1	051A0330-1	IFS Panel Assy. – Flap, Oxygen	All
Figure 22	2	100N2030-1	Display Logic Assembly, MFD	All
Figure 22	3	MS24693BB28	6-32 x ½" 100° Black Machine Screw	All
Figure 22	4	AN960-10L	#10 Flat Washer 0.32 Thk.	All
Figure 22	5	AN364-1032A	10-32 Nylock Nut	All
Figure 22	6	AN525-10R7	Screw, 10-32 x 7/16 Washer HD	All
Figure 22	7	NAS1712D4-19S	Clamp, Cushioned Loop	All
Figure 22	8	MS35206-213	Screw, 4-40 x ¼ PN HD	All

Notes: Special care must be taken when replacing the Display Logic Assembly, and/or the Display Assembly to make sure they are compatible with the wire harness. If a direct part number replacement is not available, contact Precise Flight Inc. with part numbers for the Wire Harness, Display, and Display Logic Assembly.

3.7.4 OPTIONAL – REMOTE ANNUNCIATOR (OPTIONAL)

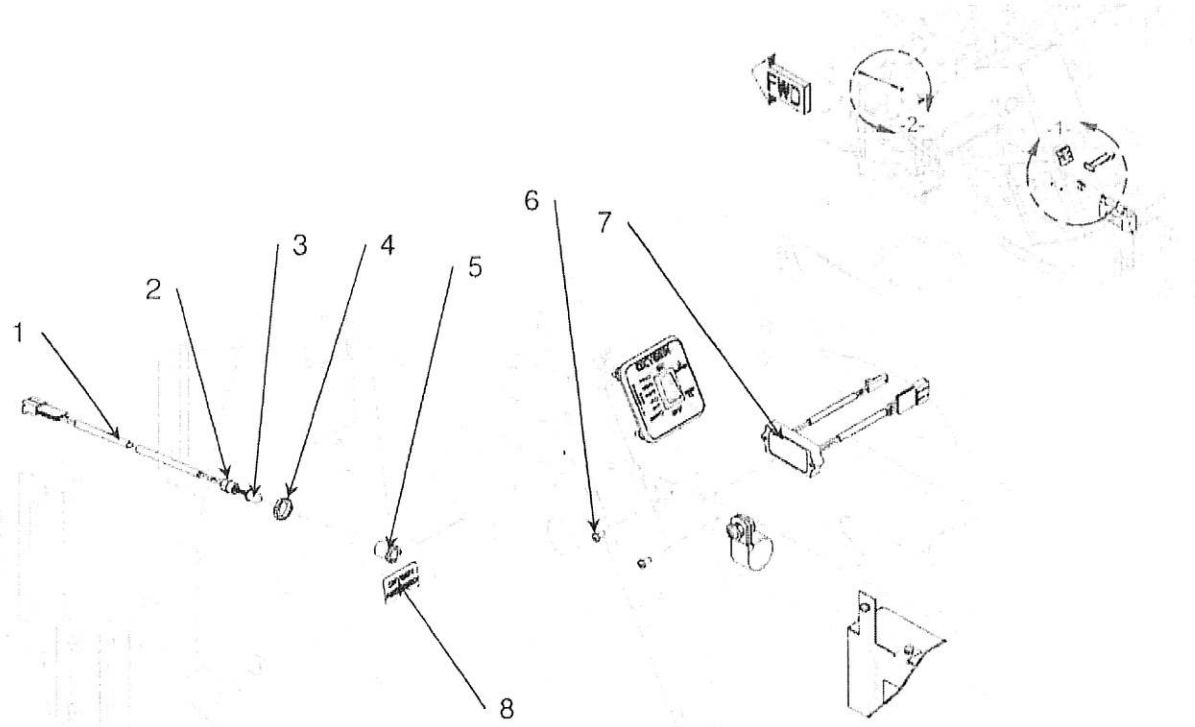

Figure 23 - Remote Annuciator

Fig.	Item	PFI Part Number	Nomenclature	Effective
Figure 23	1	102N0008-2	Annunciator Wire Harness	All
Figure 23	2	Part of Item 1	LED Lamp Holder, Black, Holder Retainer	All
Figure 23	3	Part of Item 1	LED, Amber (EL03021)	All
Figure 23	4	Part of Item 1	LED Lamp Holder, Black, Nut	All
Figure 23	5	Part of Item 1	LED Lamp Holder, Black, Bezel	All
Figure 23	6	MS 35206-213	Screw, 4-40 x ¼ PN HD	All
Figure 23	7	010A0101-1	LED Annuncaitor, Driver Assembly	All
Figure 23	8	102N0051-1	Placard, Annunciator Dash, Oxygen Required	All
Figure 23	-	010A0101-1	Annunciator Driver Wire Harness (NOT SHOWN)	All

3.8 Filler Port and Line Installation

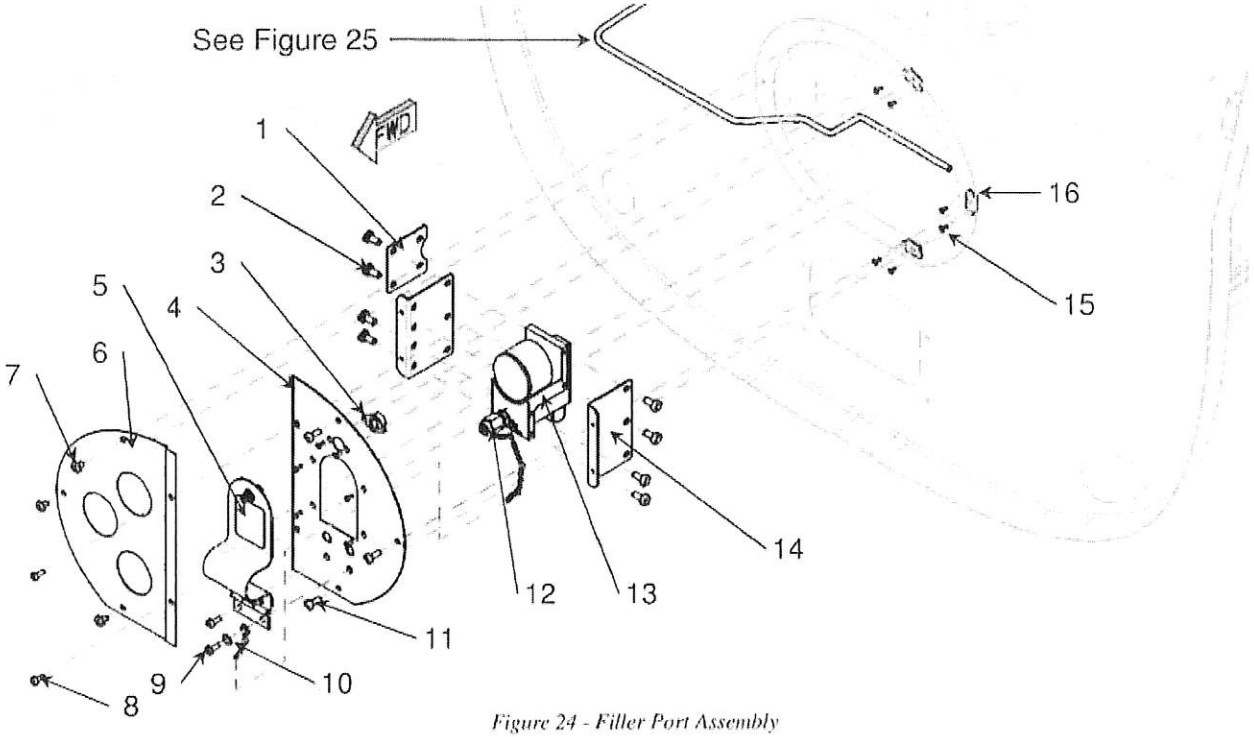

Figure 24 - Filler Port Assembly

Fig.	Item	PFI Part Number	Nomenclature	Effective
Figure 24	1	102N0414-1	Bracket, TKS Proportioning Valve (OPTIONAL)	All
Figure 24	2	AN525-10-R6	Screw, 10-32 x 3/8 WH	All
Figure 24	3	HS 07104	Camlock Receptacle, Plan (212-12N)	All
Figure 24	4	102N0412-1	Access Panel Oxygen	All
Figure 24	5	102N0415-1	Door Assembly, Oxygen Filler	All
Figure 24	6	102N0411-1	Access Panel, Modification	All
Figure 24	7	-	See Cirrus IPC for Access Panel Screws	All
Figure 24	8	MS35206-228	Screw, 6-32 x 3/8 RDH	All
Figure 24	9	MS35206-228	Screw, 6-32 x 3/8 RDH	All
Figure 24	10	AN960-6	#6 Flat Washer	All
Figure 24	11	AN525-832R8	Screw, 8-32 x ½ Washer Head	All
Figure 24	12	OX MI124	Filler Check Valve (MS22066-3 Cleaned for Oxygen)	All
Figure 24	13	102N0450-1	Remote Filler with Pressure Gage Assembly	All
Figure 24	14	102N0413-1	Bracket, Remote Filler (Attached with AN426AD-3-4 Rivets)	All
Figure 24	15	CCR264xS-3-0x	Rivet	All
Figure 24	16	MS21059-L08	Nutplate, 8-32 Floating Nutplate	All

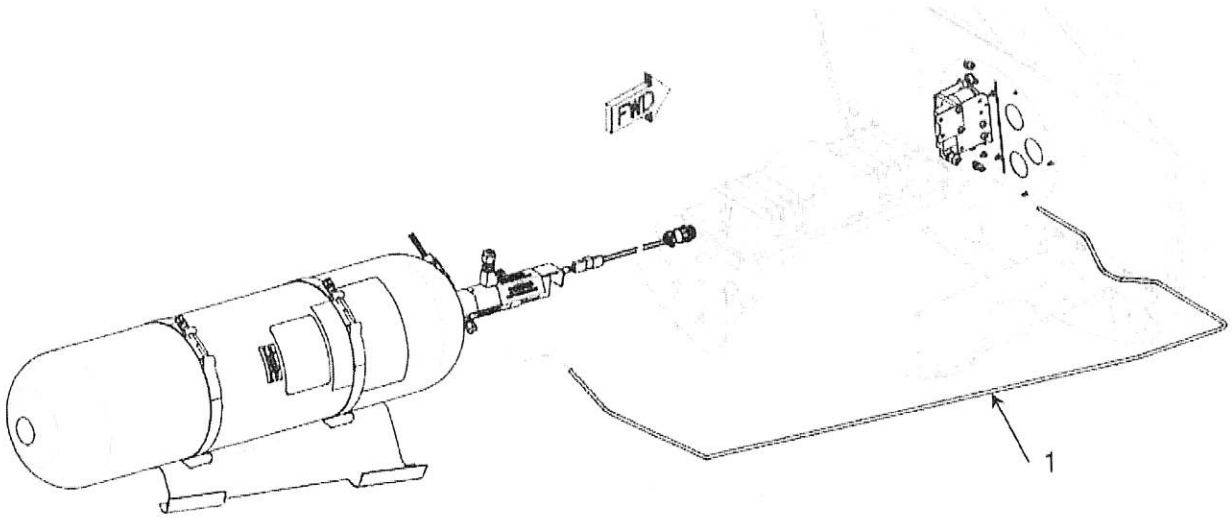

Figure 25 - High-Pressure Line Installation

Fig.	Item	PFI Part Number	Nomenclature	Effective
Figure 25	1	102N0420-1	High Pressure Oxygen Line	All

SUREFLY
ELECTRONIC IGNITION

SureFly Ignition Module

SIM6C

6 Cylinder Continental Magneto Replacement

INSTALLATION INSTRUCTIONS

Document No. SF1003, Revision B

Revision History

Revision:	Date:	Description:	Approved By:
IR	05/21/2018	Initial release.	JDH
A	06/18/2018	Added page numbers, revised section 3, included drawings SIM6C & SIM6C-INSTALL.	JDH
B	07/26/2018	Reformatted for clarity & added illustrations.	RVC

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AIRFRAME

INSTALLATION INSTRUCTIONS

Document No. SF2001, Revision IR

Revision History

Revision:	Date:	Description:	Approved By:
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AIRFRAME
STC