Pilot's Operating Handbook and
FAA Approved Airplane Flight Manual
Supplement
for

Ice Protection System

When the Ice Protection System is installed on the Cirrus Design SR22, this POH Supplement is applicable and must be inserted in the Supplements Section (Section 9) of the Cirrus Design SR22 Pilot's Operating Handbook. This document must be carried in the airplane at all times. Information in this supplement adds to, supersedes, or deletes information in the basic SR22 Pilot's Operating Handbook.

• Note •

Noted effectivity "*Serials with G3 Wing*" indicates Serials 2334, 2420, 2438 and subsequent.

Noted effectivity "*Serials before G3 Wing*" indicates Serials 0334 thru 2333, 2335 thru 2419, 2421 thru 2437, and 2439 and subsequent unless otherwise noted.

This POH Supplement Change, dated Revision 05: 03-27-07, supersedes and replaces revision 4 of this POH Supplement dated 07-03-04.

FAA Approved Joseph C Mieso Date Mar 26 2007

for Royace H. Prather, Manager
Chicago Aircraft Certification Office, ACE-115C
Federal Aviation Administration

Section 1 - General

The airplane is equipped with an Ice Protection System. This system allows a pilot who inadvertently enters icing conditions, to initiate de-icing fluid flow along the wing, horizontal stabilizer, and propeller blades.

Section 2 - Limitations

1. Flight into known icing is prohibited.
2. De-icing fluids meeting DTD 406B:
   - AVL (DTD 406B) - Aviation Laboratories
   - AL-5 (DTD 406B) - Canyon Industries
   - Dimax 80 (TKS-80) - Canyon Industries
   - TKS-Fluid (DTD 406B) - D.W. Davies & Co

   • Note •

   The Ice Protection System is certified only as “No Hazard” to normal operations, therefore, no determination has been made as to the capability of this system to remove or prevent ice accumulation

Placards

Serials 0334 thru 2333, 2335 thru 2419, 2421 thru 2437;
LH Fuselage, above de-icing fluid filler cap:
Serials 2334, 2420, 2438 & subs; Left wing, above de-icing fluid filler cap:

DE-ICING FLUID
REFER TO AFM FOR APPROVED
DE-ICING FLUIDS

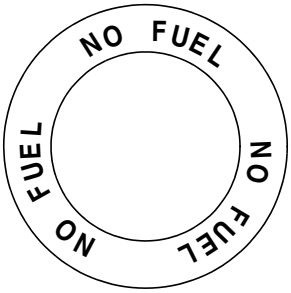

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Figure - 1
Required Placards

Section 3 - Emergency Procedures

Inadvertent Icing Encounter

Flight into known icing conditions is prohibited. However, if icing is inadvertently encountered, determine the most appropriate operating mode:

NORMAL mode is selected when icing conditions are encountered and prior to ice accretion. The maximum system operating time while in NORMAL mode is approximately, S*erials before G3 Wing*, 1 hour or, *Serials with G3 Wing,* 90 minutes.

MAXIMUM mode is selected if ice has accreted to flight surfaces. The maximum system operating time while in MAXIMUM mode is approximately S*erials before G3 Wing*, 30 minutes or, *Serials with G3 Wing,* 45 minutes.

• Caution •

Prolonged operation of the system in clear air, at very high altitudes, and very cold temperatures can result in “flash” evaporation of water and alcohol from the de-icing fluid. This evaporation results in a glycol rich fluid that could become “gel” like on the wing surface until the aircraft enters cloud or descends to warmer temperatures.

• WARNING •

The Ice Protection System may not remove significant accumulations of ice if accretions are permitted to form with the Ice Protection System off.

Ensure system start time and system mode is noted while exiting icing conditions to aid in estimating de-icing fluid reserve.

1. Ice Protection Switch ..... As Required
2. Pitot Heat ..... ON
3. Time ..... NOTED
4. Exit icing conditions. Turn back and/or change altitude.
5. Cabin Heat ..... MAXIMUM

6. Windshield Defrost..... FULL OPEN
7. Alternate Induction Air .....ON
8. When Icing Conditions Cleared, Ice Protection System .....OFF

Section 4 - Normal Procedures

Pre-Flight Inspection

1. Battery Master Switch ..... ON
2. Ice Protection Switch ..... MAXIMUM
3. Anti-Icing Fluid Quantity ..... Check Full
4. Fluid Vent (underside) ..... Unobstructed
5. Porous Panels ..... Condition and Security

• Note •

If allowed to run dry, the system may require maintenance. *Refer to Section 8* for priming procedure.

6. Porous Panels ..... Evidence of De-Icing Fluid
7. Slinger Ring ..... Evidence of De-Icing Fluid
8. Ice Protection Switch ..... OFF
9. Battery Master Switch ..... OFF

Section 5 - Performance

Cruise speed is lower by approximately three knots and range is reduced by a maximum of 2%.

• Note •

Experience with your airplane's power settings may result in more accurate performance numbers than those given above.

1. Reduce KTAS shown on the Cruise Performance tables and the Range/Endurance Profile tables by 3 knots.
2. Reduce range shown on the Range/Endurance Profiles by 2%.

Section 6 - Weight & Balance

Ice Protection System installation adds the optional (Sym = O) equipment at the weight, arm, and moment/1000 shown in the following figure.

ATA/ Item	Description	Sym	Qty	Part Number	Unit Wt	Arm
30-01	Propeller Slinger Ring	O	1	15321-001	1.5	55.0
30-02	De-Icing Fluid Reservoir[a]	O	1	15269-001	4.2	181.0
30-03	Metering Pump[a]	O	1	15165-013	4.5	176.0
30-04	Metering Pump[b]	O	1	17351-102	4.5	176.0
30-05	Priming Pump[b]	O	1	17351-103	0.70	176.0

a. Serials before G3 Wing only. Note: Serials with G3 Wing, reservoir is integral to wing.
b. Serials with G3 Wing.

• Note •

De-icing fluid weight is 9.2 pounds per U.S gallon.

De-Icing Fluid Reservoir, Fuselage			
Weight LB	**Moment/1000 Fluid Reservoir FS 181.0**	**Weight LB**	**Moment/1000 Fluid Reservoir FS 181.0**
0.5	0.09	15.0	2.72
1.0	0.18	16.0	2.90
2.0	0.36	17.0	3.08
3.0	0.54	18.0	3.26
4.0	0.72	19.0	3.44
5.0	0.91	20.0	3.62
6.0	1.09	21.0	3.80
7.0	1.27	22.0	3.98
8.0	1.45	23.0	4.16
9.0	1.63	24.0	4.34
10.0	1.81	25.0	4.53
11.0	1.99	26.0	4.71
12.0	2.17	27.0	4.89
13.0	2.35	28.0[a]	5.07
14.0	2.53		

a. 2.96 U.S. Gallons Capacity

Figure - 2 (Sheet 1 of 2)
Loading Data - Serials before G3 Wing

De-Icing Fluid Reservoir, Wing			
Weight LB	**Moment/1000 Fluid Reservoir FS 148.0**	**Weight LB**	**Moment/1000 Fluid Reservoir FS 148.0**
0.5	0.07	18.0	2.66
1.0	0.15	19.0	2.81
2.0	0.30	20.0	2.96
3.0	0.44	21.0	3.11
4.0	0.59	22.0	3.26
5.0	0.74	23.0	3.40
6.0	0.89	24.0	3.55
7.0	1.04	25.0	3.70
8.0	1.18	26.0	3.85
9.0	1.33	27.0	4.00
10.0	1.48	28.0	4.14
11.0	1.63	29.0	4.29
12.0	1.78	30.0	4.44
13.0	1.92	31.0	4.59
14.0	2.07	32.0	4.74
15.0	2.22	33.0	4.88
16.0	2.37	34.50[a]	5.11
17.0	2.52		

a. 3.75 U.S. Gallons Capacity

Figure - 2 (Sheet 2 of 2)
Loading Data - Serials with G3 Wing

Section 7 - System Description

The Ice Protection System can prevent, and in certain conditions, remove ice accumulation on the flight surfaces by distributing a thin film of glycol-based fluid on the wing, horizontal stabilizer, and propeller. The presence of this fluid lowers the freezing temperature on the flight surface below that of the ambient precipitation preventing the formation and adhesion of ice.

The system consists of wing and horizontal stabilizer porous panels, propeller slinger ring, proportioning units, metering pump, filter, strainer, fluid tank, activation switch, filler cap, system plumbing, and attaching hardware. The system operates on 28 VDC supplied through the 5-amp ICE PROTECTION circuit breaker on Main Bus 1.

De-icing Fluid Tank

Serials before G3 Wing; The de-icing fluid tank is serviced through a filler located on the LH side of the fuselage, just forward of the baggage door. The fluid tank, located behind the rear cabin trim panel, has a total capacity of 2.96 gallons.

Serials with G3 Wing; The de-icing fluid tank is serviced through a filler located on the upper LH wing. The fluid tank, integral to the LH wing, has a total capacity of 3.75 gallons.

Switching

Serials 0334 thru 0434; A three-position switch mounted on the center console panel controls system operation.

Serials 0435 thru 2333, 2335 thru 2419, 2421 thru 2437, and 2439 and subsequent; Two switches are mounted on the bolster panel. The first switch controls system operation through ON and OFF positions, the second switch controls system flow rate through MAXIMUM and NORMAL positions.

Serials with G3 Wing; Two switches are mounted on the bolster panel. The ON/OFF switch energizes both the priming pump and the metering pump simultaneously, the second switch controls system flow rate through MAXIMUM and NORMAL positions.

System Operation

Serials before G3 Wing; Upon activation, a two-speed metering pump supplies fluid pressure to the system. Low pump speed provides the required flow during NORMAL operation and high pump speed during MAXIMUM operation.

Serials with G3 Wing; Upon activation, the metering pump and a priming pump, mounted below the LH passenger seat, energize simultaneously. The priming pump pulls de-icing fluid from the tank, through a series of strainers, through the metering pump, check valve and back to the de-icing fluid tank. Within 10 seconds the metering pump primes, begins circulating de-icing fluid through the system, and the priming pump shuts off. Low pump speed provides the required flow during NORMAL operation and high pump speed during MAXIMUM operation.

All Serials; From the metering pump, mounted below the LH passenger seat, de-icing fluid is pushed through a filter, mounted adjacent to the pump, and then carried to the proportioning units located in the wing (*Serials before G3 Wing only*), empennage, and cabin-floor forward through plastic tubing. Proportioning units regulate flow to the porous panels attached to the leading edges of the wing and horizontal stabilizer and to the propeller slinger ring.

De-icing fluid is carried from the proportioning units to the porous panels where the fluid is discharged at a low, steady flow rate through fine, laser-drilled holes.

De-icing fluid protects the propeller by a slinger ring mounted to the spinner backing plate where the fluid is distributed by centrifugal action onto grooved rubber boots fitted to the root end of the propeller blades.

If icing is inadvertently encountered, the pilot switches the Ice Protection switch to NORMAL or MAXIMUM to initiate de-icing fluid flow along the protected surfaces. Pitot heat is turned ON and the time is noted to aid in estimating de-icing fluid reserve. The pilot then maneuvers to exit the icing conditions, turns cabin heat to maximum, and windshield defrost and alternate induction air ON. Upon exiting the icing conditions, the system is turned OFF.

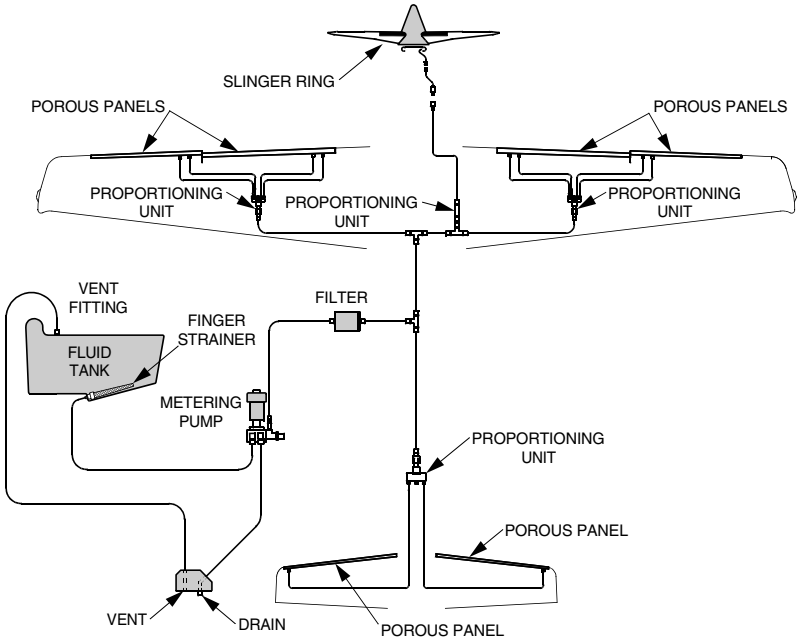

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Figure - 3 (Sheet 1 of 2)
System Schematic - Serials before G3 Wing

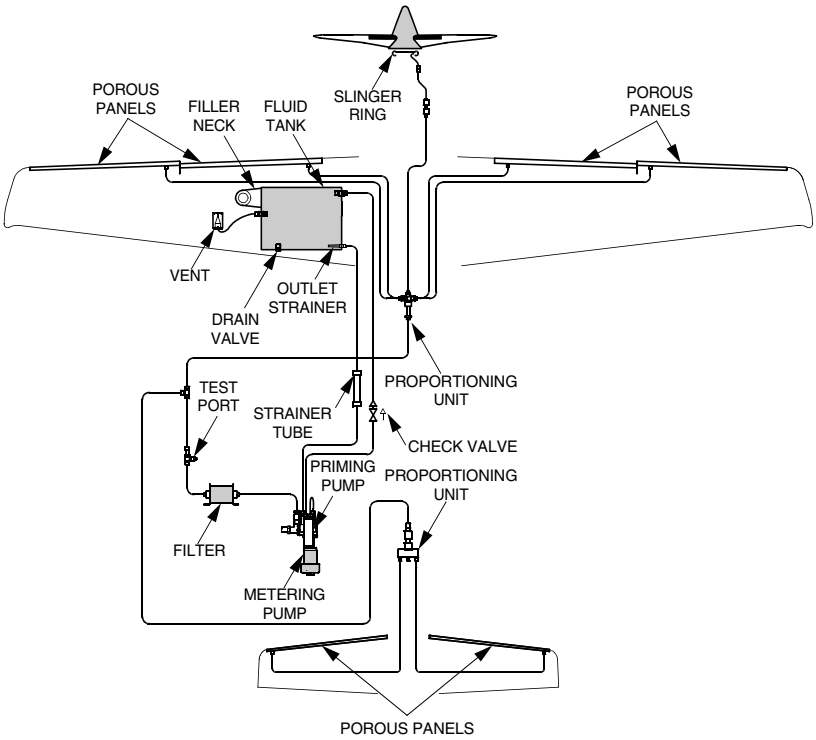

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Figure - 3 (Sheet 1 of 2)
System Schematic - Serials with G3 Wing

Section 8 – Handling, Service, & Maintenance

Storage

• Note •

During long periods of non-use, the porous panel membranes may dry out which could cause uneven fluid flow during subsequent operation. Perform the Pre-Flight Inspection every 30 days to keep porous panel membranes wetted.

To prepare the Ice Protection System for flyable storage, fill the de-icing fluid tank and operate the system on MAXIMUM to ensure all air is completely purged from components and plumbing. Re-fill the de-icing fluid tank after purging.

Servicing

De-Icing Fluid Tank

• Caution •

Use only approved de-icing fluid. See Section 2, Limitations

The de-icing fluid tank is serviced through a filler located on the LH side of the fuselage, just forward of the baggage door or *Serials with G3 Wing* on the upper LH wing. To prevent de-icing fluid contamination, maintain a clean, dedicated measuring container and ensure mouth of fluid container is clean before dispensing. Secure the filler cap immediately after filling.

Porous Panels

• Caution •

Certain solvents may damage the panel membrane. Use only isopropyl alcohol, ethyl alcohol, or industrial methylated spirit to clean panels.

Do not wax leading edge porous panels.

Periodically clean the porous panels with soap and water using a clean, lint-free cloth. Isopropyl Alcohol may be used to remove oil or grease.

System Priming - Serials before G3 Wing only

If allowed to run dry, the metering pump may fail to prime because of air trapped in the system. If no de-icing fluid is evident during the Pre-Flight Inspection, perform the following procedure:

1. Locate de-icing fluid drain on LH side of fuselage belly just forward of fluid tank.

• Caution •

Use a dedicated de-icing fluid sample cup for the following step.

Do not use the fuel sampling cup.

2. Sample de-icing fluid until fluid streams shows no evidence of air bubbles for at least three seconds.
3. Perform Pre-Flight Inspection verifying evidence of de-icing fluid from porous panels and slinger ring.
4. If necessary, repeat steps 2 and 3.
5. If after the above procedure no de-icing fluid is evident, the ice protection system must be purged in accordance with the Airplane Maintenance Manual by an appropriately certified technician.

System Priming - Serials with G3 Wing

1. If no de-icing fluid is evident during the Pre-Flight Inspection, the ice protection system must be purged in accordance with the Airplane Maintenance Manual by an appropriately certified technician.

Section 10 – Safety Information

The Ice Protection System is not intended to remove ice from the aircraft on the ground. Do not attempt to take off with frost, ice, or snow on flying surfaces.

Flight into known icing is prohibited. The Ice Protection System has not been evaluated in known icing conditions. Therefore, the affects of known icing on the system is unknown. Its purpose is to provide some protection from the effects of ice, should an unexpected encounter with icing conditions occur. At the first indication of icing, the most expeditious and safest course of exiting the icing conditions should be taken. The decision should be based on weather briefings, recent pilot reports, ATC observations, and may include course changes or altitude changes.

During simulated icing encounters, stall speed increases of approximately 12 knots in the clean configuration and 3 knots in the landing configuration were observed. In addition, cruise speed was reduced by at least 20 KCAS and the airplanes rate of climb diminished by at least 20%.

Even with the protected flight surfaces totally clear of ice, performance degradation will occur due to ice on unprotected regions. The amount of the degradation cannot be accurately predicted and it is therefore, depending on circumstances, advisable to increase approach and landing speeds while using the Ice Protection System. Use extreme caution during approach and landing, being alert to the first signs of pre-stall buffet and an impending stall.