

Airglas, Inc. ®
3500 O'Malley Rd.
Anchorage, AK 99507

Airplane Flight Manual Supplement
Cessna 180 Series

DOCUMENT AI-13-180-FM

FAA APPROVED
AIRPLANE FLIGHT MANUAL SUPPLEMENT
FOR CESSNA MODELS:

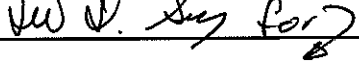
180, 180A, 180B, 180C, 180D, 180E, 180F
180G, 180H, 180J, 180K
Equipped with

AIRGLAS GLH3000-SG HYDRAULIC WHEEL SKI

Registration Number: _____

Serial Number: _____

This supplement must be attached to the aircraft FAA Approved Airplane Flight Manual and must be carried in the airplane when the **Airglas, Inc. ® GLH3000-SG** hydraulic wheel ski is installed in accordance with STC SA02360AK. The information contained in this document supplements or supersedes the basic manual and applicable appendices only in those areas listed. For limitations, procedures, and performance information not contained in this supplement, consult the basic FAA Approved Airplane Flight Manual.

FAA Approved By: 
August A. Asay
Manager, Anchorage Aircraft Certification Office
Federal Aviation Administration
Anchorage, Alaska

Date: NOV 25 2013

LOG OF REVISIONS

Revision	Pages Affected	Description	FAA Approval Signature	Date

INTRODUCTION

This airplane is equipped with **Airglas Inc. ®, GLH3000-SG** hydraulic wheel skis and 8.50 x 6 tires. This ski permits operations on snow as well as hard surface and gravel runways. The skis are operated from inside the cockpit by the pilot via a control switch that commands an electric/hydraulic pump to actuate from wheel position to skis and back to wheel position. Lights on the control panel will indicate the deployment position of the skis. **Visual confirmation of the actual ski position is required before each landing.**

Control and Operation Information: The door for the GLH3000-SG Ski Kit is actuated by the electric/hydraulic pump (preferred) or a previously installed FAA approved manually operated hand pump in the cockpit. The electric/hydraulic pump is controlled via a 3 position toggle switch and indicator lights that are located on the instrument panel. **Note: The ski locked indicator lights are activated when the pump reaches a specific pressure in the position selected, not the actual position of the skis.**

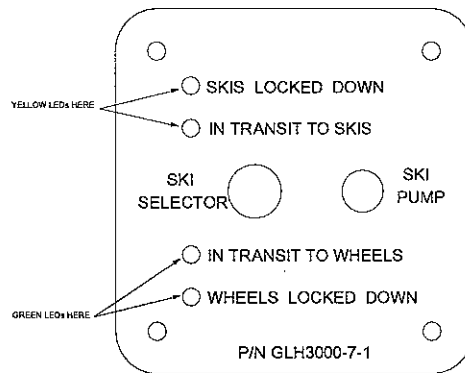
1. When the switch is lifted up, the cylinder will extend and slide the door under the tire. While the switch is held up a yellow transit indicator light will illuminate showing the ski position has been selected and the pump is cycling. When the cycle is complete, a second yellow light (Skis Locked) will illuminate and stay on to confirm full deployment of the skis. As the switch is released the transit indicator light will extinguish, but the skis locked light will remain lit as long as the skis are extended.
2. When the switch is pressed down, the door will retract and expose the tire. While the switch is held down a green transit indicator light will illuminate showing the wheel position has been selected. When the cycle is complete, a second green light (Wheels Locked) will illuminate and stay on to confirm retraction of the skis. When the switch is released the transit indicator light will extinguish, but the wheels locked light will remain lit as long as the skis are retracted.
3. Low speed taxiing and steering may be enhanced by coming to a complete stop and applying one brake during cycling of the door to the open position. Holding the brake will impede the actuation of the door and allow the opposite sliding door to cycle independently. By extending only one wheel at a time, the pilot will have decreased turning radius to the side that has the extended wheel. This would be particularly advantageous during solo operations.

SECTION I. Limitations

- A.) *Airspeeds:* V_{ne} for all models is 172 MPH IAS.
- B.) *Powerplant limits:* NO CHANGE
- C.) *Flight Load Factors:* NO CHANGE
- E.) *Flight Limitations:* NORMAL CATEGORY ONLY
- F.) *Usable Fuel:* NO CHANGE
- G.) *Markings and Placards:*

DO NOT EXCEED 172 MPH IAS WITH
AIRGLAS GLH3000 SKIS INSTALLED

Place Airspeed Restriction Placard on instrument panel immediately adjacent to Airspeed Indicator and **in full view of pilot.** (All Models)



Located at the ski selector switch. (All Models)

CAUTION- IT IS POSSIBLE TO EXCEED THE FORWARD CG LIMITAION WITH AIRGLAS SKIS INSTALLED AND MINIMUM FUEL. OPERATIONS OUTSIDE THE CG LIMITATIONS ARE PROHIBITED.

Place Placard on instrument **in full view of pilot.** (All Models)

CAUTION- IT IS POSSIBLE TO EXCEED THE MAXIMUM WEIGHT LIMITAION WITH AIRGLAS SKIS INSTALLED AND ALL SEATS OCCUPIED. OPERATIONS OUTSIDE THE MAXIMUM WEIGHT LIMITATIONS ARE PROHIBITED.

Place Placard on instrument **in full view of pilot.** (All Models)

AVOID SLIPS WITH FLAPS EXTENDED WHILE ON SKIS

Place Placard on instrument **in full view of pilot.** (All Models)

DO NOT EXTEND OR RETRACT SKIS WHILE IN MOTION ON THE GROUND.

Place Placard on instrument **in full view of pilot.** (All Models)

SECTION II. Normal Procedures

- A.) *Pre-flight:*
1. CHECK – Bungees, cables, clevis pins, cotter pins, nuts, bolts and attach fittings for security.
 2. CHECK – Cylinders for leaks at the seals and fittings.
 3. CHECK – Hydraulic pump fluid level and inspect for leaks, and wiring connections.
 4. CHECK – Ski Kit for cracks, excessive wear, fractures, abrasions, and delamination.
 5. CHECK – Door Guides for wear and security. Lube with silicone spray or wax.
 6. CHECK – Tires for proper pressure- 20 psi minimum.
 7. CHECK – 25 hour servicing has been performed within last 25 hours of operation.
- B.) *Starting the engine:* Hand propping of engine is not recommended.
- C.) *Before Takeoff:* Ensure the skis are locked in the desired configuration. Prepare for longer takeoff distances.
- D.) *Before landing:* Ensure the skis are locked in the desired configuration. Ensure planned landing area is free of logs, rocks, snowdrifts or other obstacles. Prepare for longer landing distances.

SECTION III. Emergency Procedures

If either of the skis does not deploy to the full up or down configuration, avoid landing on non-frozen surfaces. High friction contact on the ski bottoms may cause high drag and reduced control.

SECTION IV. Performance Information

1. *TAKEOFF:* Under the most favorable conditions of smooth packed snow at temperatures approximating 32°F, the ski-plane takeoff distance is approximately 30 percent greater than that shown for the land plane.



Warning

In estimating distances for other conditions, caution should be exercised in making provision for other temperatures or other snow conditions that may **significantly** affect or increase these distances.

SECTION IV. Performance Information-Continued

2. **CLIMB:** Rate of climb performance is decreased approximately 26% below climb performance with eight and one half inch (8.50 x 6) tires.
3. **CRUISE:** Cruise speed may be decreased as much as 3%. Maximum range will also be reduced.
4. **LANDING:** Under the most favorable conditions of smooth packed snow at temperatures approximating 32°F, the ski-plane landing distance is approximately 20% greater than that shown for the land plane on a hard surface.



Warning

In estimating distances for other conditions, caution should be exercised in making provision for other temperatures or other snow conditions that may significantly affect or increase these distances.

SECTION V. Loading Information

The equipment added to this airplane by this modification consists of the GLH3000-SG hydraulic wheel ski kit. The weight of the wheel ski kit is 124 lbs. with a C.G. of 14.75 inches aft of the aircraft datum. The electric pump is 7.5 lbs. located 114 inches aft of the aircraft datum. See the airplane's current weight and balance report for determining exact weight and balance calculations.

SECTION VI. Systems Descriptions

This airplane is equipped with an **Airglas, Inc. ®, GLH3000-SG** hydraulic wheel ski, with associated attachment rigging.

SECTION VII. Servicing and Maintenance

All servicing procedures for this installation are standard. The GLH3000-SG hydraulic wheel ski may be maintained and inspected in accordance with Part 43 of the Federal Aviation Regulations (14 CFR 43). Information on installing, removing, maintaining, and insuring continued airworthiness of the GLH3000-SG hydraulic wheel ski is detailed in the Instructions for Continued Airworthiness *Including* Installation, Maintenance and Service Instructions Manual No. GLH3000-105, Rev F dated September 20, 2013 or later FAA approved revision.

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