INSTALLATION
MAINTENANCE, SERVICE
&
INSPECTION

Model **L2700-0H58D** Ski Kit

for

Bell OH-58D Helicopter

Cage Code No. 17564

Description

Since 1966, ***Airglas, Inc.*** has designed and manufactured a full length composite ski that dramatically increases the load distribution of the helicopter skids on snow, sand, tundra, marsh, swamps, muskeg, or other soft surfaces. Not only does it allow the aircraft to land on deep snow with full support of the aircraft; it also allows for "run-on" landings and takeoffs.

The skis add a marginal weight and have no adverse affects on the flight characteristics of the aircraft. The center of gravity changes are negligible.

Through years of flight time; no indications of negative effect on flight have been reported. Vibration analysis has typically shown the skis to work without adverse harmonic vibration.

The skis are attached on virtually all models in the same way. A series of stainless steel straps that wrap around the skid tube secure the skis. Typical installation takes 2-4 man hours depending on the crew, environment, and size of aircraft. There is a cutout area that provides clearance for the ground handling wheels to be installed with no interference from the skis.

Since the skis are very simple and have no moving parts; they are very easy to maintain and inspect. This manual will detail the installation, inspection procedures and intervals along with maintenance and repair instructions.

SKI SPECIFICATION

Gross weight aircraft of 5500 lbs with the Airglas L2700-OH58D ski kit installed will impose a footprint of 4.8 PSI on the ground.

AIRGLAS P/N L2700-OH58D

Dimensions ---------- 117.3 x 13.75

Approx. Calculated Area per Ski ---------- 1150² Inches

Approx. Weight per Ski ---------- 35.0 lbs.

C.G. of Ski (Standard Gear) : The installation of P/N 2700-OH58D on Standard Gear adds 70 lbs. at F.S. 111.75.

C.G. of Ski (MPLH Gear) : The installation of P/N 2700-OH58D on MPLH Gear adds 71 lbs. at F.S. 112.6.

MPLH ADAPTER - Airglas P/N L2700-058D-6

(Only used with MPLH Gear - NOT for use with Standard Skid Gear.)

INITIAL INSTALLATION INSTRUCTIONS

(See L2700-OH58D STD and L2700-OH58D MPLH Installation Drawings for details)

1. Remove skid skis from packaging.

   a) Remove outer wrap material. Use caution to prevent damage to ski surface.

   b) Remove shrink wrap and foam from around skid ski.

Do not to cut through the foam.

2. Remove installation manual/drawing for use in installing the skid ski.

   a) Remove upper nuts from each attach bolt using care not to damage parts. They will be used to install ski on helicopter.

   b) Remove straps from ski and inventory straps for use in final installation.

Note: Front strap (L2700-206A-3) may be doubled and located with strap in front of cut out. Double strap (L2700-206A-2) can be removed (and installed) by hand. Use care in removing aft 8 holed strap (L2700-OH58D-6). This may require the use a pry bar which is cushioned by a suitable material to protect against any possible damage to the ski.

3. Using US Army approved maintenance procedure, refer to:

   [Manual TM-1-1520-248-23, Task 1-6-8, pg 1-117]

   Jack up the OH58D Helicopter and remove the skid abrasion plates [TM 1-1520-248-23, Task 3-1-15, Page 3-44] (forward plate NSN 1630-01-098-7493, center plate NSN 3040-00-136-2345, aft plate 1620-01-225-6599) Remove all skid plates and plug holes with flush set screws or a removable sealant (NSN 8030-00-723-2746, Pro Seal) to prevent the introduction of water or contaminants to skid tube.

3.1 Alternative Method — Lift Helicopter with Ground Handling Wheels and remove skid plates as described above.

4. Replace the original screws with 10-32 x 7/16. (NSN 5305-00-781-9057)

(Ski wrapped for shipping)

(Ski with shipping 2x3 attached)

MPLH Gear ONLY

1. Clean any excess dirt or foreign material around skid cone at the back of the MPLH Gear to prepare for adapter installation. (The adapter requires a precision fit.)
2. Position ski behind the skid in preparation to slide ski between ground handling wheels.
   a) Lift tail of ski up to the point that the tip of the ski will slide under the skid.
   b) Slide ski between tires with a forward motion. The ski will have to be twisted in order to miss the tires as the front shovel section passes the wheels.
   c) Lift each ski into place on the skid tube, making sure to have adequate personnel to hold the ski in place while other personnel place the straps across the skid tube.
   d) Place straps in the appropriate locations across skid tube and on to the ski attach studs. (See Installation Drawing)
   e) Place thin bead of sealant (NSN 8030-00-723-2746, Pro Seal) around the perimeter of the skid cone.
   f) Immediately place adapter over back of MPLH Gear taking care to get a precision fit. A mallet may be required to install fully
   g) Apply a thin layer of sealant around the small gap at adapter and skid tube.
   h) Attach and <u>Hand Tighten Only</u> the hardware on the studs.

ii) The long 8- hole L2700-OH58D-2 adapter strap may need to be squeezed by appropriate mechanical means and positioned on the ski. It may require the use of a mallet to **lightly tap** one side of the adapter onto the screws.

a) Put washer and nut on each screw.

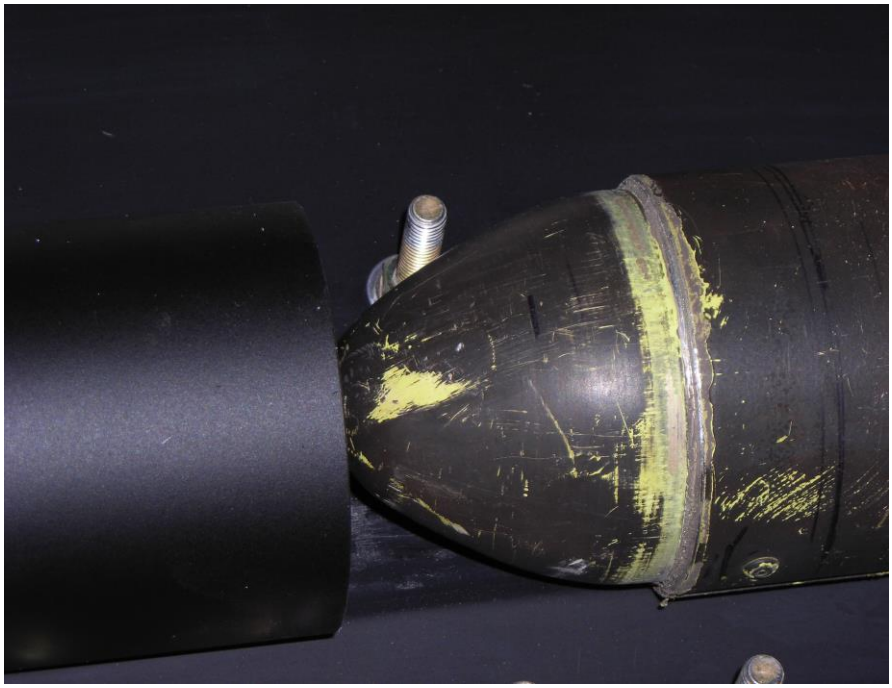
b) Lower aircraft onto skis when all straps/clamps are in place and torque to prescribed value.

c) For Airglas Single and Double Straps (PN 2700-206A-2 & 2700-206A-2) tighten nuts to 36 (+/- 5) ip. (See note #2 on either drawing)

d) For Airglas Adapter Strap L2700-OH58D-2 tighten each nut to 45 (+/- 5) ip. (See note #8 on either drawing)

(Ski tail lifted up for installation)

(Ski tilted to get clearance from ground handling wheel)



(Adapter installed onto skid tube)

(Adapter installed onto skid tube)

(L2700-OH58D-6 Adapter installed onto skid)

(Example of squeezing the L2700-OH58D-2 Strap, to install onto ski)

Note: There should be no less than 1/16th of an inch between the double strap and the skid saddle. If necessary, a thinner piece of rubber bushing can be used to move the ski forward of the saddle.

STRAP SADDLE INTERFACE DETAIL

Standard Gear Installation

1. Using US Army approved maintenance procedure, refer to:

   [Manual TM-1-1520-248-23, Task 1-6-8, pg 1-117]

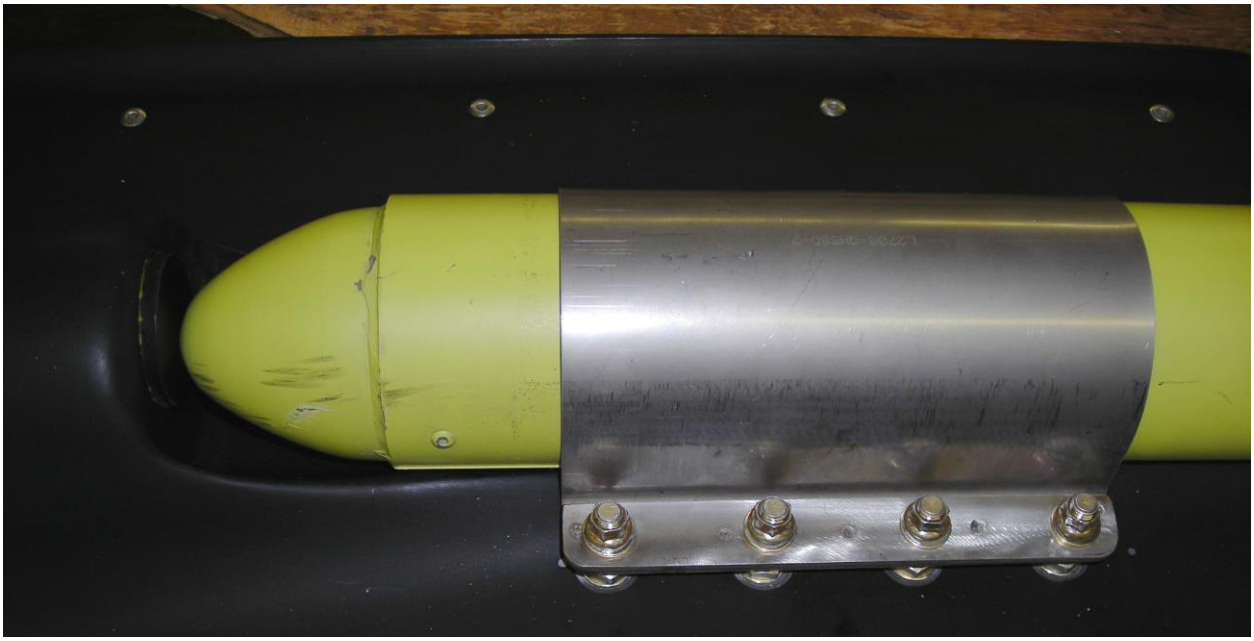
   Jack up the OH58D Helicopter and remove the skid abrasion plates [TM 1-1520-248-23, Task 3-1-15, Page 3-44] (forward plate NSN 1630-01-098-7493, center plate NSN 3040-00-136-2345, aft plate 1620-01-225-6599) Remove all skid plates and plug holes with flush set screws or a removable sealant (NSN 8030-00-723-2746, Pro Seal) to prevent the introduction of water or contaminants to skid tube.

2. With the aircraft raised, slide ski between tires with a forward motion. The ski will be twisted in order to miss the tires as the main part of the ski front section passes the wheel.

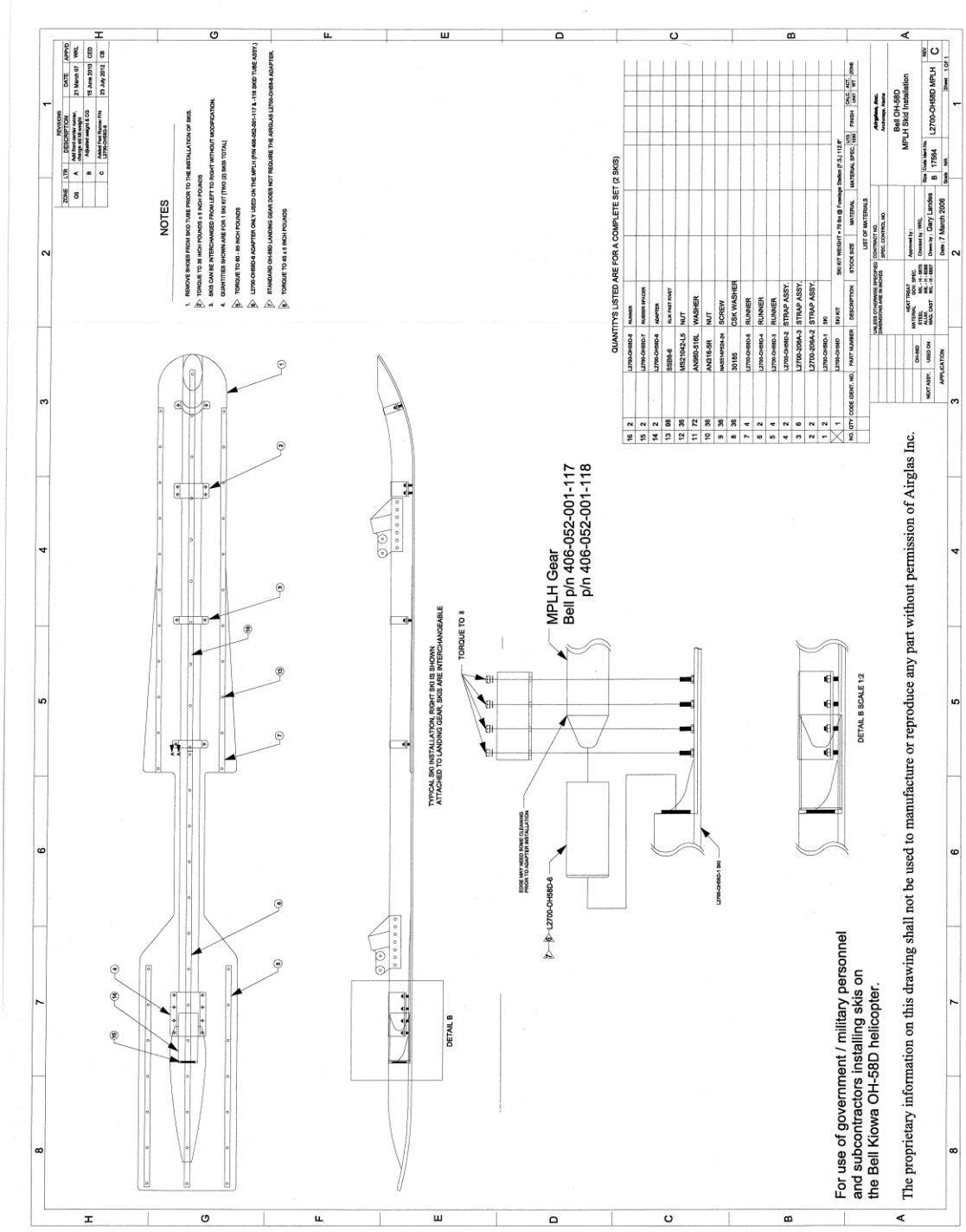
3. Lift the ski into place beneath the skid, making sure to have adequate personnel to hold the ski in position while additional personnel place the straps across the skid tube.

4. Attach hardware to the ski attach bolts loosely. Straps can be positioned by hand.

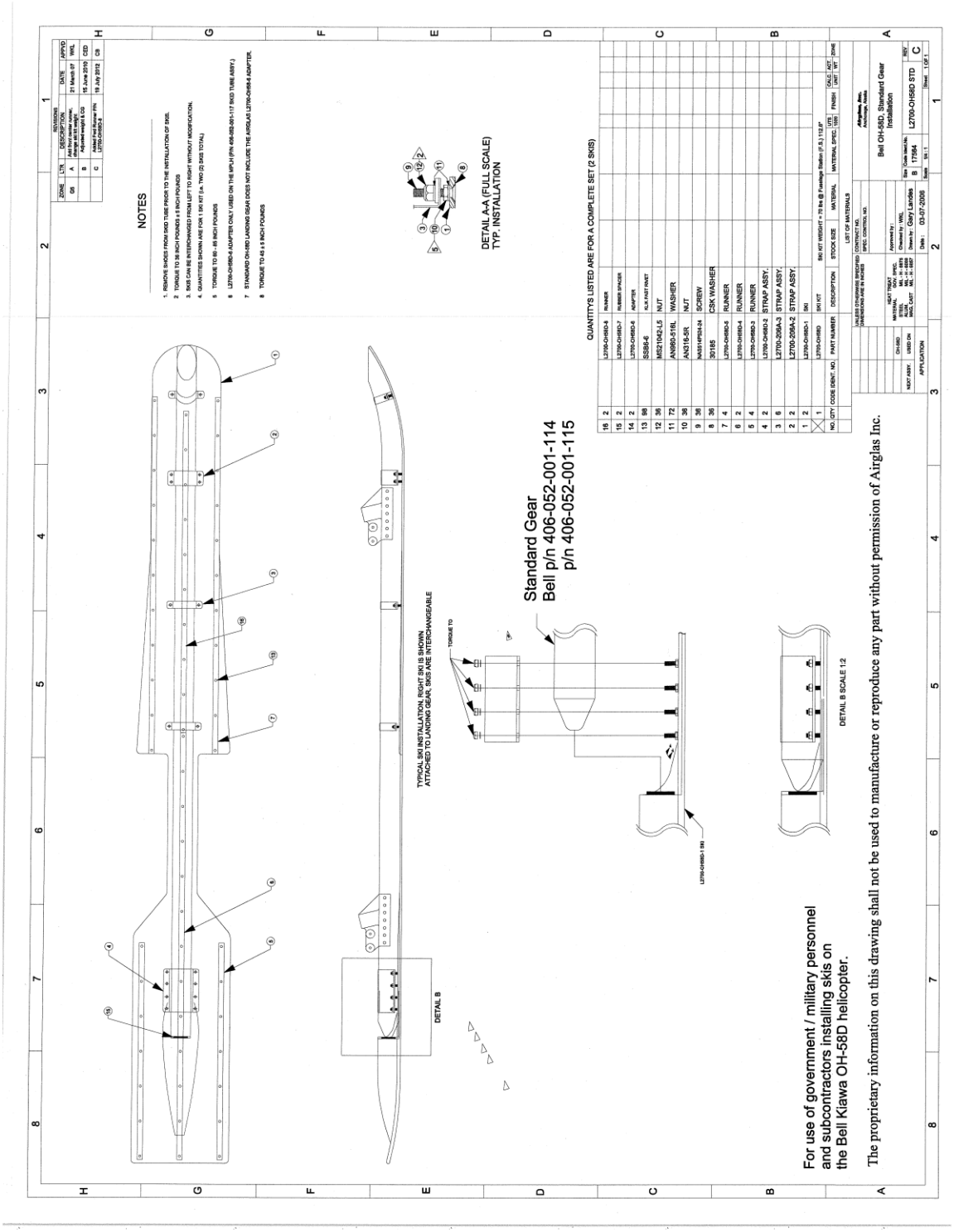
5. Lower full weight of aircraft onto skis when all straps/clamps are in place and torque nuts to prescribed value.



L2700-OH58D-2 Strap Assy.



MPLH GEAR Installation Drawing



STANDARD GEAR Installation Drawing

Instructions for Continued Airworthiness

Inspection Procedures

Airworthiness Limitations

(1) **Each mandatory replacement time:**

a) There are NO mandatory replacement time limited parts on Airglas Ski Kits.

Daily (Pre-Flight/Post-Flight) Inspection

A visual inspection is required prior to each flight for overall condition of ski, skid attachment bracket slippage marks, and all associated hardware condition.

I) Inspect for loose or stripped strap attach screws or damage to attaching clamps.

a) **Replace any damaged attaching parts before next flight.**

II) Inspect for cracks, holes or abraded areas in the fiberglass.

a) If minor (Field repairable damage); complete repair within 120 days of noted discrepancy, or next PPM inspection. (See Page 18 for Definition)

b) **If major (Non-Field repairable damage); repair or replace before next flight**. (See Page 19 for Definition)

III) Inspect for loose, cracked or working rivets.

a) **Replace any missing rivets, before next flight.** Note: Grinding of rivet flush with runner not mandatory for pre-flight/post-flight installations.

b) Replace cracked or loose rivets at next Phased Progressive Maintenance (PPM) interval.

IV) Inspect for worn, cracked or missing runners.

a) Replace missing runners before next flight.

b) Replace any runner with wear, in which there is less than 75% of original thickness remaining. This equates to having .095" of runner thickness remaining. An indicator of this wear is within the counter-bore hole of the runner. It must be deep enough to allow rivet to still hold the runner into position. Use of a digital caliper with depth indicator is very good for this inspection.

c) Any runner wear greater than above criteria, should be replace before next flight. Note: The runners prevent wear damage to the fiberglass ski, which is much harder to repair.

Negligible Damage

Small and shallow nicks, scratches and abraded areas on the top or bottom. Small hairline cracks in gel coat are considered cosmetic only. Only if the damage continues into the fiberglass base material, does it require any attention.

Periodic Inspection

or

(Selected PPM INTERVAL)

A **300 HOUR INSPECTION** (+/-10%) is required and includes removal of ski to thoroughly inspect for damage. This inspection requires:

1) Inspect for loose or stripped strap mounting screws.

    a) Replace any damaged strap parts before next flight.

2) Inspect for cracks or holes and/or abrasion areas in fiberglass.

    a) Repair before next flight.

3) Inspect for loose, cracked or working rivets.

    a) Replace before next flight.

4) Inspect for missing or cracked runners.

a) Replace before next flight.

5) Inspect for corrosion on the bottom of skid tube and at the heel cap.

a) Refer to Helicopter Factory Maintenance Procedures for any corrosion control issues.

SPECIAL NOTE:

Some installation drawings may contain special instructions or may also require specific hardware for the applicable ski kit.

Be sure to review the installation drawings that are specific to the ski model during installation and maintenance intervals.

Types of Possible Damage

Negligible Damage

Small and shallow nicks, scratches and abraded areas on the top or bottom. Small hairline cracks in gel coat are considered cosmetic only.

Field Repairable Damage

- Cracks or fractures less than 3".
- Laminate separation less than 0.5' depth and 5" in length.
- Small holes that are no more than 1-2 inches in diameter.
- Abrasions to the ski from terrain contact.
- Replacement of worn runners.
- Replacement of loose or missing rivets.
- Replacement of studs i.e. strap mounting screws.

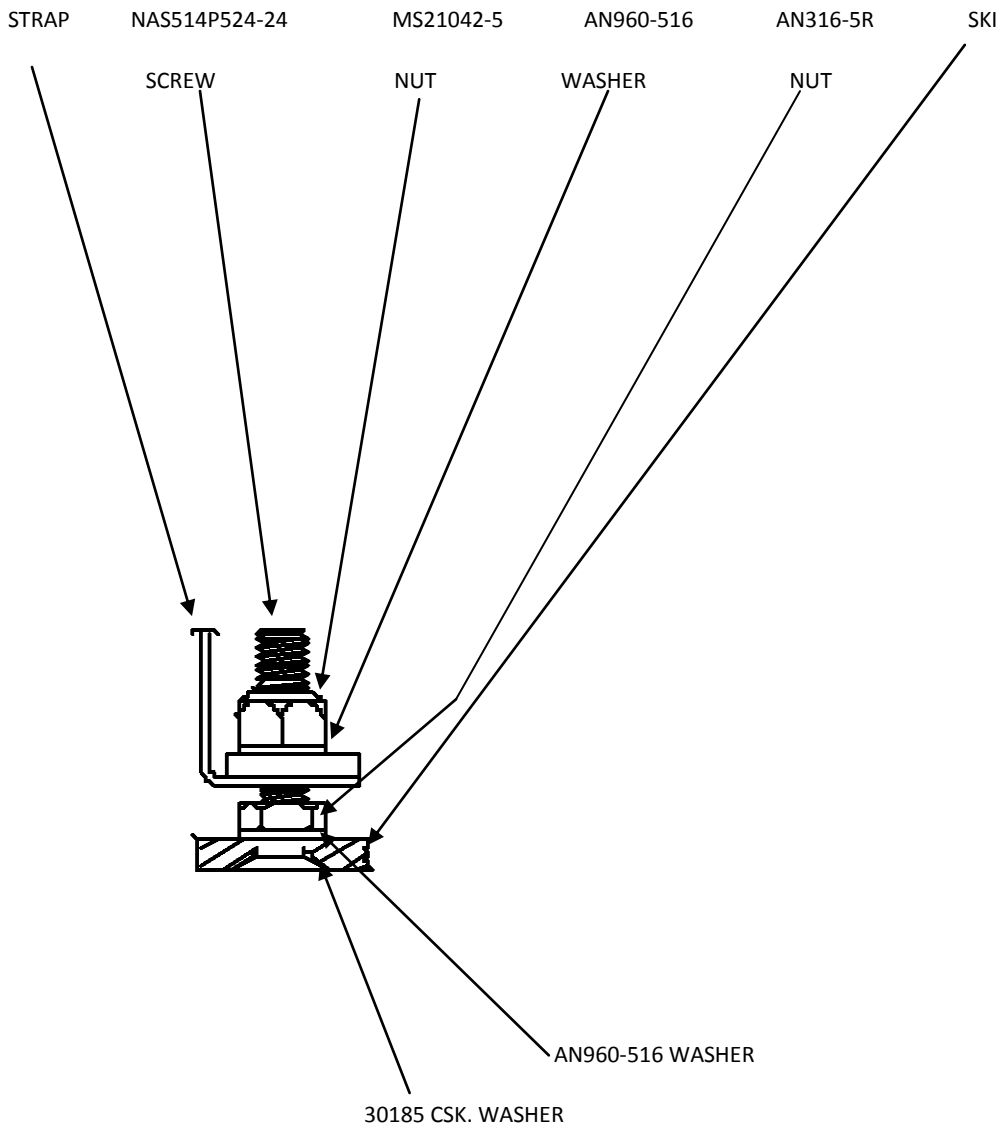
Non-Field Repairable Damage (Factory Only)

- Strap mounting screws pulled through the ski.
- Delamination within 1" of a mounting screw.
- Cracks or fractures more than 3" require consultation with Airglas, Inc.

Replacement of Straps and Strap Mounting Screws

1) Remove Nut (AN365-524 or MS21042-5) and washer from screw.
2) Remove attaching strap assembly.
3) Remove Nut (AN316-5R) and washer from screw.
4) Remove old screw (NAS514P524-24P) from ski.
    i) This may require chipping or grinding the coating material from around the screw head on the ski bottom.
    ii) Lightly tap the damaged screw through the ski with a mallet.
5) Replace the screw in the reverse order of removal. The AN316-5R nut should be torqued to 60-80 inch pounds. Replace any bottom coating removed during replacement operation.

> ***Note:*** *Skis manufactured prior to 2007 will have an epoxy layer that covers the screw head. A small punch or chisel may be required to expose the screw. Use of good structural quality epoxy, is recommended.*


STRAP
NAS514P524-24
SCREW
MS21042-5
NUT
AN960-516
WASHER
AN316-5R
NUT
SKI
AN960-516 WASHER
30185 CSK. WASHER

Rivet / Runner Replacement

1. Place the ski on a solid surface; drill the heads only off of the rivets with #9 drill bit. Do not drill into the ski.
2. Drive the rivet shanks through the ski with a 3/16 straight punch.
3. Remove the damaged runner from the ski.
4. Inspect ski for damage around runner. Make repairs to the ski as necessary.
5. Position the new runner in the same location of old runner.
6. Align the runner holes with an awl, drift punch or #9 drill bit.
7. Clamp the runner to the ski with enough clamps to maintain correct positioning.
8. Install SSB6-8 stainless rivets (Available from Airglas, Inc.) using an appropriate rivet puller.
9. Grind rivet stems flush with the surface of the runner.
10. Touch up with flat black paint as necessary.
11. Heat ski base & runners to 200°F with a heat gun and apply a coating of paraffin wax.
12. Inspect replacement runner installation and return ski to service.

Base Surface Maintenance

If the bottom surface sustains excessive wear; it may be sanded down with a 36 grit belt or disc sander and then recoated with epoxy or abrasion resistant gel coat. Once the epoxy or abrasion resistant gel coat is cured, the surface should be re-sanded with 80 grit paper using an orbiting sander. When more advanced and complicated repairs are necessary; ***Airglas, Inc.*** should be consulted.

Note 1: Excessive Wear is defined as when the ski base coating is scraped or worn off to the point that the underlying fiberglass composite fibers are exposed.

Note 2: Epoxy and abrasion resistant gel coat formulas change over time. Older models used an epoxy based coat, which had black colorant mixed in. Newer skis bottoms use a special blend of black high abrasion gel-coat. Contact: ***Airglas, Inc.*** for current information on how to get needed material.

SPECIAL INSTRUCTIONS

In case of a hard landing; the skis should be inspected for damages to the ski attaching hardware and to the skis themselves. Inspect for stretched, sheared or loose screws or nuts. Inspect for distortion of the straps. Inspect for cracks in the skis or loosened runners. The Helicopter Operators Manual Special Instructions section should be reviewed for additional inspection criteria.

In case of a lightning strike; the **Airglas, Inc.** Ski Kits have no specific inspection requirements. See the Helicopter Operator's Manual Special Instructions section for lightening strike inspection criteria.

For any other information, or questions, comments or concerns; contact us at:

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