

INSTRUCTIONS FOR CONTINUED AIRWORTHINESS

Aero Twin, Inc. Nose Gear Gravel Deflector Kit No. NGD8-100
for
Cessna Models 208, 208A, and 208B Aircraft

Document No. NGD8-ICA

Maintenance Manual
Airworthiness Limitations
Illustrated Parts List

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1.0 Maintenance Manual

Aero Twin, Inc. Nose Gear Gravel Deflector, Kit No. NGD8-100

1.1 Description

The Aero Twin nose gear gravel deflector for the Cessna Caravan series of aircraft consists of a steel frame that is clamped to the nose gear fork. The steel frame extends aft around the rear of the nose wheel tire, where it supports a rubber mud flap. The gravel deflector provides protection from rock damage to the belly of the aircraft and the propeller.

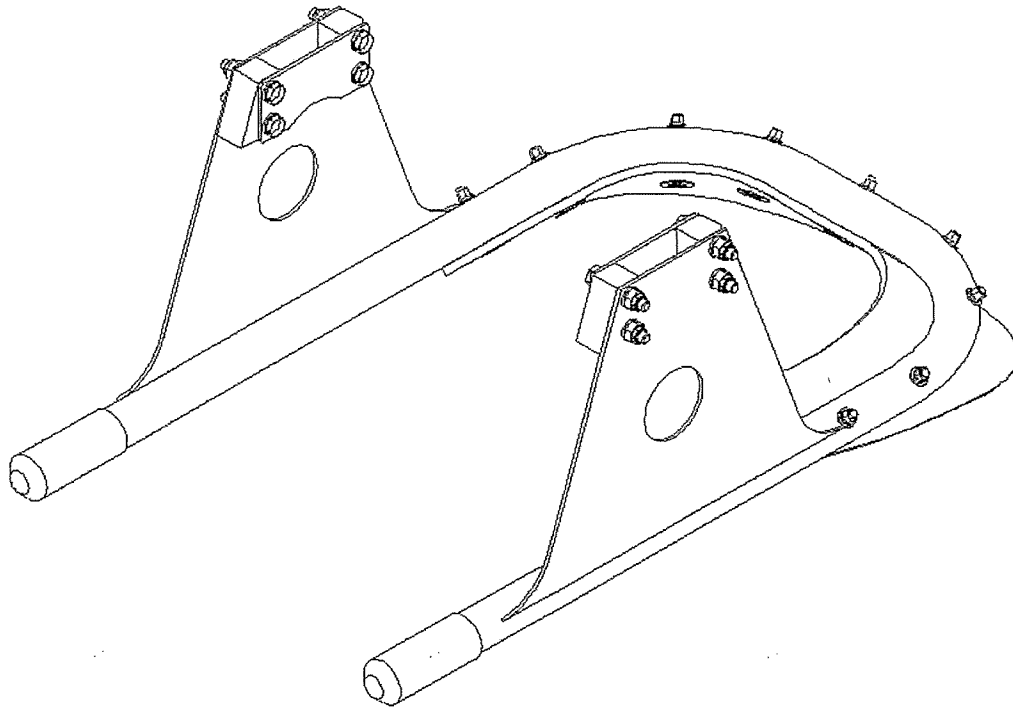


Figure 1.1.1 Nose Gear Gravel Deflector

1.2 Installation / Removal

1.2.1 Installation:

1. Installation of the nose gear gravel deflector is performed in accordance with the installation instructions contained in document number NGD8-IM. See that document for further installation instructions.

1.2.2 Removal:

1. To remove entire nose gear gravel deflector, remove the two bolts from the front sides of the clamps on each side of the tire.
2. Remove the front clamp blocks, P/N NGD8-110. Pull the gravel deflector aft off of the nose gear fork.
3. Update the weight and balance as specified in section 1.3.

1.3 Weight and Balance

When the nose gear gravel deflector is installed or removed, the aircraft empty weight and balance must be updated to reflect the configuration change. This section includes information required for weight and balance calculations pertaining to the installation of the nose gear gravel deflector.

The nose gear gravel deflector weighs 9 pounds and is located at fuselage station 61.8, giving a total moment of 556.2 in-lbs. When the deflector is installed on the aircraft, the weight of the deflector must be added to the empty aircraft weight. The moment contribution from the gravel deflector must be added to the previous empty aircraft moment. The new empty aircraft center of gravity is then calculated by dividing the total moment by the total empty weight. If the gravel deflector is removed from the aircraft, the weight and balance of the aircraft must be updated by subtracting the weight and moment contribution of the gravel deflector from the empty aircraft weight and moment and dividing the new moment by the new weight to achieve the new aircraft center of gravity.

1.4 Maintenance Instructions

1.4.1 General:

The Aero Twin Nose Gear Gravel Deflector installation is designed to be highly durable and fairly maintenance free. However, a maintenance program has been established, in accordance with Appendix G of 14 CFR Part 23, to assure the continued airworthiness of the gravel deflector and its installation. Adherence to the established plan is mandatory and records of performance of required inspections and maintenance must be maintained. See Section 2.0, Airworthiness Limitations, for required maintenance items and intervals.

1.4.2 Corrosion Prevention:

The steel frame of the gravel deflector is powder coated to protect the structure from the elements. The aluminum clamp blocks are painted. The finish on the gravel deflector parts must be inspected to insure adequate corrosion prevention. If the powder coated surface of the steel tube structure is marred in service or during handling, the affected area should be stripped and repainted to prevent corrosion, see paragraph 1.4.4.3. Corrosion prevention is also enhanced by keeping the structure clean. The steel, aluminum, and rubber parts of the gravel deflector should be kept free of dirt and may be cleaned using water and a mild detergent.

1.4.3 Disassembly / Assembly:

1.4.3.1 Disassembly:

- The rubber mud flap on the gravel deflector should be inspected for wear and may need to be replaced periodically when they are ineffective in protecting the aircraft from rock damage. To remove the mud flap, remove the nine MS24694S65 screws from the top of the frame along with the MS21042L3 nuts, A3235-028-935 countersunk washers, and NAS1149F0332P washers used with those screws.

1.4.3.2 Assembly:

- Refer to the Illustrated Parts List when reassembling the nose gear gravel deflector.
- A new mud flap will require the attachment screw holes to be match drilled using a #8 drill. To install the mud flap, wrap it evenly around the back of the gravel deflector frame, leaving a 0.25 to 0.50 inch gap along the sides and rear of the tire, and orienting the flap downwards 45° from horizontal in the back. Match drill the screw holes in the rubber using a #8 drill and install the tire scraper using the hardware specified in the Illustrated Parts List. Tighten the hardware to compress the rubber until the flat areas of the countersunk washers are flush with the surface of the mud flap.
- Replace self-locking type nuts with new hardware when reassembling the gravel deflector.
- Use standard torques specified in chapter 20-10-10 of the Cessna 208 Maintenance Manual.

1.4.4 Gravel Deflector Repair:

1.4.4.1 Hardware Replacement:

Hardware and fittings used throughout the gravel deflector are aircraft standard. Hardware should be replaced if corroded, damaged, or excessively worn. Replace self-locking type nuts with new hardware when reassembling or reinstalling the gravel deflector. Do not substitute hardware - refer to the Illustrated Parts List for correct part numbers. If you encounter difficulty procuring replacement hardware or fittings, contact Aero Twin, Inc. at (907) 274-6166. Refer to previous section for assembly information.

1.4.4.2 Steel Tube Frame:

Before any repairs may be made to the steel tube frame, written approval must be obtained from the manufacturer, Aero Twin Inc. Contact Aero Twin Engineering Department at (907) 274-6166 or write: Aero Twin Inc., Engineering Dept., 2403 Merrill Field Dr., Anchorage AK, 99501.

1.4.4.3 Painted and Powder Coated Surfaces:

Painted and powder coated surfaces should be maintained and refinished as required to prevent corrosion. When refinishing of a painted surface is required, lightly sand the affected area using fine sandpaper or an abrasive pad (such as 3M *Scotch-Brite*™). When refinishing a powder coated surface, a commercial grade stripper may be used. Polish out minor surface nicks or scratches where present. Clean the area thoroughly with a clean cloth wetted with non-petroleum-based solvent to remove any residual oils and dust. Apply a zinc-chromate or equivalent primer coat, then a matching color coat of quality enamel or epoxy-type paint. Follow manufacturer's instructions in preparing and applying primer and color coats. If a surface was previously powder coated, and it is desired to keep a powder coat finish, contact Aero Twin, Inc. at (907)274-6166.

2.0**Airworthiness Limitations****Aero Twin, Inc. Nose Gear Gravel Deflector Kit No. NGD8-100**

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

This section describes required inspection, maintenance, and replacement items. When repairs are deemed necessary, follow accepted standard practices and/or specific maintenance instructions in Section 1.4 of this manual. This section constitutes Component Airworthiness Limitations which apply to the nose gear gravel deflector installation only.

2.1 Scheduled Inspections and Maintenance:

Note: First inspection should be accomplished at next aircraft inspection requiring inspection of the nose wheel assembly so that subsequent inspections coincide.

At each inspection interval for which inspection of the nose wheel assembly is required by the FAA approved Cessna 208 Maintenance Manual or other FAA approved maintenance program, the following inspections shall be performed on the nose gear gravel deflector:

- Visually inspect the steel structure for cracks, bends, dents, corrosion, or other defects.
- Visually inspect the mud flap for security and condition.
- Visually inspect the hardware and fittings for security and condition.

At intervals not to exceed 500 hours or Annual Inspection, remove the gravel deflector from the nose gear fork and perform the following inspections:

- Visually inspect the steel structure for cracks, bends, dents, corrosion, or other defects.
- Visually inspect the mud flap for security and condition.
- Visually inspect the hardware and fittings for security and condition.
- Visually inspect the aluminum clamp blocks for cracks, dents, corrosion, or other defects.
- Replace all self locking nuts used to clamp the gravel deflector to the nose gear fork.

FAA Approved:  for Grey Holt.

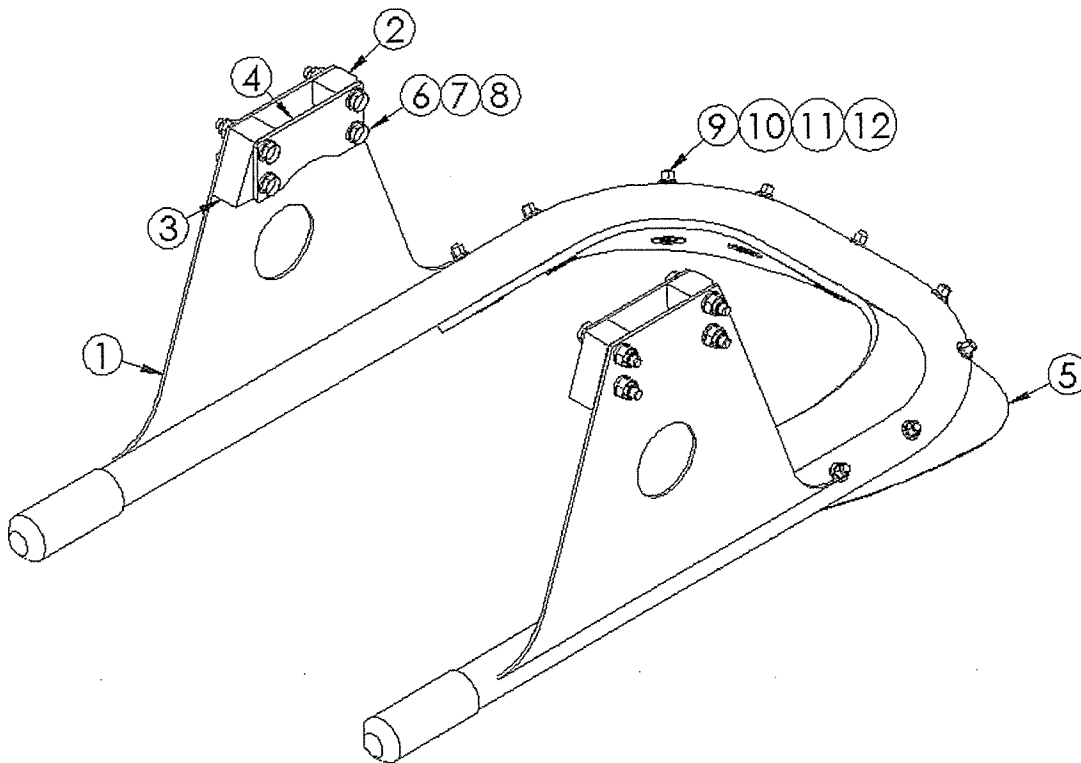
-----End of Section 2.0 Airworthiness Limitations-----

3.0 Illustrated Parts List

Aero Twin, Inc. Nose Gear Gravel Deflector, Kit No. NGD8-100

3.1 Complete Parts List:

The following is a complete parts list for the NGD8-100 nose gear gravel deflector including all installation hardware. The installation instruction for those items is detailed in document NGD8-IM, which was supplied with the gravel deflector kit STC package.



Item	Qty	Part Number	Item Description
1	1	208GD-N	Gravel Deflector Frame
2	2	NGD8-109	Aft Clamp Block
3	2	NGD8-110	Forward Clamp Block
4	2	NGD8-108	Clamp Plate
5	1	NGD8-104	Mud Flap
6	8	AN4-14A	Bolt
7	16	NAS1149F0463P	Washer
8	8	MS21045-4	Nut
9	9	MS24694S65	Countersunk Screw
10	9	A3235-028-935	Countersunk Washer
11	9	NAS1149F0332P	Washer
12	9	MS21042L3	Nut

Figure 3.1