

Airglas, Inc.®

Instructions for Continued Airworthiness
Including
Installation, Maintenance and Service Instructions

MANUAL NO. PA32-GA8-105

PA32-206LA-GA8 NOSE FORK KIT INSTALLATION
For
GippsAero GA8-TC 320 and GA8 Aircraft.

Cage Code 17564

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1.0 Introduction & Description

Introduction:

Since 1968 Airglas, Inc. has designed and manufactured oversize nose tire kits that dramatically increase the usefulness of the aircraft by allowing it to operate on rougher and softer surfaces. The installation of the PA32-206LA-GA8 nose fork kit allows the aircraft to operate with a greater safety margin on un-paved surfaces. The oversize fork allows an 8.50x6 six ply tire to be installed in place of the original 8.00 x 6 or 6.00 x 6 tires. The additional surface area reduces the load on the nose strut when rolling over rough terrain, and reduces the tires penetration in soft ground. Although the performance on soft ground is improved, pilot discretion is still required to assess landing sight suitability.

Description:

The PA32-206LA-GA8 nose fork kit consists of:

1. A PA32-GA8L-7 attach block that mates the PA32-206LA-1 nose fork to the -147 nose leg.
2. The oversize PA32-206LA-1 nose fork allows the installation of 8.50 x 6 six ply tires.
3. Oversize axle tube, axle bolt, buckets, and spacers.
4. Flight manual supplement.

Instructions for installation of this kit are detailed within this manual.

2.0 Installation Requirements

- **Requires 8.50 x 6 six ply tires and tubes. Other sized tires are not approved under this STC.**
- **Maximum tire Pressure = 23 PSIG**

3.0 Initial Installation

Refer to drawing: PA32-GA8LA, Installation Drawing for Airglas, Inc. Nose Fork, Revision B dated August 14, 2014 or later approved revision.

Refer to GA8 Service Manual P/N: C01-00-04, GA8-TC320 Service Manual P/N: C01-00-06, GA8/GA8-TC320 IPC P/N: C01-02-01.

3.1 Removal-GippsAero 6.00-6 nose fork:

1. Jack up nose of aircraft in accordance with the appropriate GippsAero service manual section 7-10-00.
2. Deflate nose tire.
3. Referencing the GA8 IPC Figure 32-6, remove MS21042-5 nut and AN960-516 washer from axle bolt (GippsAero P/N GA8-322021-105). Remove bolt. (Discard)
4. Remove the nose wheel axle plugs (GippsAero P/N GA8-322021-103). (Discard)

3.1 Removal-GippsAero 6.00-6 nose fork-Continued:

5. Remove the axle (GippsAero P/N GA8-322021-099), wheel and tire, and bearing spacers (GippsAero P/N GA8-322021-101). (Discard axle, and bearing spacers)
6. Remove tire from wheel. Retain wheel (Cleveland 40-76A).
7. Referencing the GA8 IPC figure 32-4C: Remove the GA8-322021-137 nose wheel fork plug, four each (4) AN5 bolts, MS21042-5 nuts, AN960-516 washers and the two (2) GA8-322021-093 steering lugs holding the original shaft fork joining block (GippsAero P/N GA8-322021-149), onto the nose leg main tube. Retain hardware and plug.
8. Place a wooden dowel into the center hole of the fork and block assembly to support the GA8-322021-061 lower plug. Remove the joining block and fork assembly. (Discard the block and fork)
9. Reference Airglas, Inc. drawing number PA32-GA8LA: Install the PA32-GA8L-7 block using the retained hardware.
10. Install the PA32-206LA-1 fork using four (4) AN6-13A bolts, AN365-624C nuts, and AN960-616 washers.
11. Install an 8.50x6 6 ply rated tire and 8.50x6 tube on the wheel in accordance with the appropriate GippsAero service manual. Adjust tire pressure to 23 psig maximum.
12. Install P/N PA32-206L-2 axle tube, PA32-206L-3 bearing spacers, and wheel and tire on the fork.
13. Install the PA32-206L-4 axle rod with two PA32-206L-6 cap assemblies, two AN365-624 nuts, two PA32-206L-5 spacers, and four AN960-616 washers. Adjust bearing preload (tighten nuts until wheel spins with heavy drag, then back off until wheel spins freely).
14. Lower nose of aircraft.
15. Revise aircraft weight and balance and equipment list.
16. Place the FAA approved flight manual supplement in the aircraft flight manual.
17. File FAA form 337.
18. Record installation in aircraft records.

3.2 Initial Installation- GippsAero 8.00-6 nose fork:

1. Jack up nose of aircraft in accordance with the appropriate GippsAero service manual section 7-10-00.
2. Deflate nose tire.
3. Referencing the GA8 IPC Figure 32-7, remove MS21042-5 nut and AN960-516 washer from axle bolt (GippsAero P/N GA8-322023-037). Remove bolt. (Discard)
4. Remove the nose wheel axle plugs (GippsAero P/N GA8-322023-043). (Discard)
5. Remove the axle (GippsAero P/N GA8-322023-035), wheel and tire, and bearing spacers (GippsAero P/N GA8-322023-041). (Discard axle, and bearing spacers)
6. Remove tire from wheel. Retain wheel (Cleveland 40-76A).
7. Referencing the GA8 IPC figure 32-4C: Remove the GA8-322021-137 nose wheel fork plug, four each (4) AN5 bolts, MS21042-5 nuts, AN960-516 washers and the two (2) GA8-322021-093 steering lugs holding the original shaft fork joining block (GippsAero P/N GA8-322021-149), onto the nose leg main tube. Retain hardware and plug.

3.2 Initial Installation- GippsAero 8.00-6 nose fork-continued:

8. Place a wooden dowel into the center hole of the fork and block assembly to support the GA8-3222021-061 lower plug. Remove the joining block and fork assembly. (Discard the block and fork)
9. Reference Airglas, Inc. drawing number PA32-GA8LA: Install the PA32-GA8L-7 block using the retained hardware.
10. Install the PA32-206LA-1 fork using four (4) AN6-13A bolts, AN365-624C nuts, and AN960-616 washers.
11. Install an 8.50x6 6 ply rated tire and 8.50x6 tube on the wheel in accordance with the appropriate GippsAero service manual. Adjust tire pressure to 23 psig maximum.
12. Install P/N PA32-206L-2 axle tube, PA32-206L-3 bearing spacers, and wheel and tire on the fork.
13. Install the PA32-206L-4 axle rod with two PA32-206L-6 cap assemblies, two AN365-624 nuts, two PA32-206L-5 spacers, and four AN960-616 washers. Adjust bearing preload (tighten nuts until wheel spins with heavy drag, then back off until wheel spins freely).
14. Lower nose of aircraft.
15. Revise aircraft weight and balance and equipment list.
16. Place the FAA approved flight manual supplement in the aircraft flight manual.
17. File FAA form 337.
18. Record installation in aircraft records.

4.0 Removal and Re-installation

Removal:

1. Jack up nose of aircraft in accordance with the appropriate GippsAero service manual section 7-10-00.
2. Deflate nose tire.
3. Reference Airglas, Inc. drawing number PA32-GA8LA: remove AN365-624C nut, AN960-616 washers, and PA32-206L-5 spacer from PA32-206L-4 axle rod. Remove rod. (Retain)
4. Remove the PA32-206L-6 nose wheel axle buckets. (Retain)
5. Remove the PA32-206L-2 axle tube, wheel and tire, and PA32-206L-3 bearing spacers. (Retain axle, and bearing spacers)
6. Remove tire from wheel. Retain wheel (Cleveland 40-76A).
7. Remove the GA8-322021-137 nose wheel fork plug, four each (4) AN5 bolts, MS21042-5 nuts, AN960-516 washers and the two (2) GA8-322021-093 steering lugs holding the PA32-GA8L-7 block, onto the nose leg main tube. Retain hardware and plug.
8. Place a wooden dowel into the center hole of the fork and block assembly to support the GA8-3222021-061 lower plug. Remove the block and fork assembly. (Retain the block and fork)

4.0 Removal and Re-installation-Continued

Installation:

1. Reference Airglas, Inc. drawing number PA32-GA8LA: Install the PA32-GA8L-7 block using the retained hardware.
2. Install the PA32-206LA-1 fork using four (4) AN6-13A bolts, AN365-624C nuts, and AN960-616 washers.
3. Install an 8.50x6 6 ply rated tire and 8.50x6 tube on the wheel in accordance with the appropriate GippsAero service manual. Adjust tire pressure to 23 psig maximum.
4. Install P/N PA32-206L-2 axle tube, PA32-206L-3 bearing spacers, and wheel and tire on the fork.
5. Install the PA32-206L-4 axle rod with two PA32-206L-6 cap assemblies, two AN365-624 nuts, two PA32-206L-5 spacers, and four AN960-616 washers. Adjust bearing preload (tighten nuts until wheel spins with heavy drag, then back off until wheel spins freely).
6. Lower nose of aircraft.
7. Confirm aircraft weight and balance and equipment list reflect installation.
8. Confirm the FAA approved flight manual supplement is in the aircraft flight manual.
9. Record installation in aircraft records.

5.0 Servicing Information

Service tire to 23 PSIG maximum pressure.

6.0 Instructions for Continued Airworthiness

MAINTENANCE/OPERATIONAL CHECKS

Daily Preflight Check *

1. **CHECK** – Tire pressure.
2. **CHECK** – Fork for damage.
3. **CHECK** – Attach hardware for security.

* **May be accomplished by appropriately rated pilot.**

6.0 Instructions for Continued Airworthiness-Continued

100/Annual (100 hour or Annual inspection interval)

1. **CHECK** – Tire pressure.
2. **CHECK** – Fork and components for corrosion or damage.
3. **CHECK** – Attach hardware for security.
4. **CHECK** – Fork protective coating for integrity.

7.0 Repairs

The nose fork is made of heat treated 4130 chrome moly steel. Repairs are limited to:

1. Replacing the powder coating (Contact Airglas, Inc. for procedure).
2. Shallow scratches and corrosion (less than .032" deep) can be removed by polishing with Scotch-Brite™.

The axle tube and block are made of 4130 chrome moly steel, plated to prevent corrosion. The axle bolt and buckets are made of 304 stainless steel. The bearing spacers are made of aluminum.

Repairs are limited to:

1. Shallow scratches and corrosion (less than .032" deep) can be removed by polishing with Scotch-Brite™.

All other damage requires replacement of the damaged components.

8.0 Weight and Balance Data

This installation is 27.0 pounds. The C.G. of the installation which includes the tire, tube, block and fork, is 13.97 inches (355 mm) forward of datum.

| Aircraft | Original Fork | Datum Location | Original Fork and Tire Arm and Weight | Airglas, Inc. Fork kit Installation Arm and Weight |
|-------------------------------------|----------------------|--|---|---|
| GippsAero GA8-TC 320 and GA8 | 6.00 x 6 | Aft face of Fuselage firewall at fuselage station 0 (stated arms are positive aft; negative forward). | 21.97 lbs. (9.96 kg) @ -13.97" (-355 mm) | 29.3 lbs. (13.29 kg) @ -13.97" (-355 mm) |
| GippsAero GA8-TC 320 and GA8 | 8.00 x 6 | Aft face of Fuselage firewall at fuselage station 0 (stated arms are positive aft; negative forward). | 25.8 lbs. (11.7 kg) @ -13.97" (-355 mm) | 29.3 lbs. (13.29 kg) @ -13.97" (-355 mm) |

— END —