

## WHEELS AND BRAKES - MAINTENANCE PRACTICES

### 1. General

- A. This section provides information on tire mounting precautions, the brake system bleeding, the wheel removal/installation, the tire mounting and dismounting, the brake components removal/installation and brake inspection criteria.

### 2. Tire Mounting Precautions

**CAUTION:** A wheel and tire assembly that has been damaged in service should be deflated by a remote means. If this is not possible, the wheel and tire assembly should be allowed to cool for a minimum of three hours before the tire is deflated.

**CAUTION:** Valve cores under pressure can be ejected like a bullet. If wheel or tire damage is suspected, approach the tire from the front or rear, not from the side (facing the wheel).

**WARNING:** Trying to pry the beads free incorrectly may cause an accident.

- A. Tire Mounting and Dismounting Criteria. Refer to Figure 201 and Figure 202.

- (1) Prior to removing the wheel and tire assembly from the airplane, completely deflate the tire with a deflation cap. When all pressure has been relieved, remove the valve core.

**NOTE:** It is good practice to deflate the tire before removing the axle nut.

- (2) Take special care when encountering difficulty in freeing the tire beads from the wheel flanges. Even when using tire tools, care must be taken to prevent damage to the beads or the wheel flanges. On small tires, successive pressing with a two-foot length of wood close to the bead or by tapping the bead with a rubber mallet is generally sufficient.
- (3) Ensure the mating tire and tube are specified and correct for the wheel and tire assembly.
- (4) Remove the stickers from the inside of the tire and the outside of the tube. Remove the sticker residue with isopropyl alcohol or a equivalent solvent.
- (5) Clean the inside of tire, then lubricate lightly with talcum powder.
- (6) Inflate the tube to slightly round and insert in tire. This aids in mounting the tire and the tube to the wheel half and helps prevent pinching the tube.

**NOTE:** A new tube should be used when installing a new tire. Tubes grow in service, taking a permanent set of about 25% larger than the original size. This makes a used tube too large to use in a new tire, which could cause a wrinkle and lead to tube failure.

- (7) Align the yellow stripe on the tube with the red balance dot on the tire. Align the red dot with the valve if no stripe exists on the tube.

**NOTE:** After inserting the valve stem in the hole on the wheel half, connect a valve stem puller device to the valve stem to prevent the valve stem from receding from the hole in the wheel half.

- (8) When mounting the tire and the tube on the wheel, ensure the wheel bolts are torqued to the wheel manufacturer's instructions before inflating. Refer to the Supplier Publication List.
- (9) Inflate the tire in a safety cage to the rated pressure.
- (10) Deflate the tire to equalize stretch.
- (11) Reinflate the tire to rated pressure.
- (12) After a 12-hour stretch period, reinflate the tire to rated inflation pressure.

### 3. Servicing Tires and Tubes

- A. For servicing procedures related to the tires and the tubes, refer to Chapter 12, Tires - Servicing.

### 4. Brake System Replenishing

- A. For replenishing procedures of the Brake System, Hydraulic Fluid, refer to Chapter 12, Hydraulic Fluid - Servicing.

### 5. Brake System Bleeding

- A. Brake Bleeding Procedures

**NOTE:** Anytime a brake line is disconnected or a spongy feel to the brake pedal is detected, there is a likelihood that air has entered the system. To make sure the proper braking action is gotten, all the trapped air must be removed from the system by the following procedures.

**NOTE:** Only use hydraulic fluid with MIL-H-5606 specifications.

- (1) Ensure the parking brake handle is off (fully in).
- (2) If installed, remove the wheel fairings.
- (3) Connect a hydraulic pressure source, such as a hand pump or Hydro Fill unit, to the right brake wheel cylinder bleeder valve. Refer to Figure 202.
- (4) Open the bleeder valve and begin pumping the hydraulic fluid into the system while observing fluid level in the brake system reservoir, located on lower left corner of the firewall in engine compartment.
- (5) When the reservoir is full, close the wheel-brake bleeder valve and remove pressure source.
- (6) Using a test syringe or equivalent, remove 90% of fluid from the reservoir.
  - (a) Make sure that the remaining fluid covers the outlet fitting in the base of the reservoir.
- (7) Connect a hydraulic pressure source to the left wheel-brake bleeder valve. Refer to Figure 202.
- (8) Open the left wheel-brake bleeder valve and pump hydraulic fluid into the system while you observe the fluid level in the brake system reservoir.
- (9) When the reservoir is full, close the left wheel-brake bleeder valve and remove the pressure source.
- (10) Make sure that the reservoir is filled to within 0.50 inch (12.70 mm) of the **MAX** fill line shown on the reservoir.
- (11) Torque each of the wheel-brake bleeder valves to 35-45 In-Lbs (3.96-5.08 N-m).
- (12) If installed, install the brake fairings.

## 6. Main Wheel and Tire Removal/Installation

### A. Remove Main Wheel and Tire. Refer to Figure 201.

- (1) Jack the airplane. Refer to Chapter 7, Jacking - Maintenance Practices.

**WARNING: Make sure that you deflate the tires before you remove the wheel and tire assemblies from the airplane. When all pressure has been released, use an extraction tool to remove the valve core from the valve stem. Valve cores under pressure can be ejected from the valve stem and cause injury to personnel or damage to the airplane. If you think there is wheel or tire damage, get access to the tire from the front or rear, not from the side (facing the wheel).**

- (2) Deflate the tire completely.
- (3) Remove the backplate bolts, the washers and the shims that attach the brake backplate to brake assembly. Remove the backplate. Refer to Figure 202.
- (4) Remove cotter pins and axle nut.

**NOTE: Bearings and bearing seals will be removed during disassembly.**

- (5) Pull wheel from axle.
- (6) Examine the axle fittings for cracks, corrosion, pits, security, and any other damage.
  - (a) Make sure that the attach bolts have sufficient thread engagement in the self-locking nuts.
- (7) Examine the outer wheel axle surface and attachment bolts for condition, cracks, corrosion, signs of damage, and wear.
- (8) Examine the inner main gear wheel axle surface for corrosion.

**NOTE: The main gear axle is a time limited part. You should verify the current number of landings, inspection status and replacement time before you install the main wheel and tire. Refer to Chapter 4, Replacement Time Limits and Typical Inspection Time Limits for the applicable inspection criteria.**

- (9) Examine the main gear axle attachment to the axle fitting and the attachment bolts for corrosion, cracks, signs of damage, and security.
- (10) Examine the main gear axle fitting where it is installed to the outer spring and the attachment bolts for corrosion, cracks, signs of damage, and security.
  - (a) Make sure that the axle fittings part number/serialization identification placards are securely attached.
- (11) Examine the fillet seal around the main gear spring and at the axle fitting.
  - (a) If the seal is broken, loose, or deteriorated, replace it with a new fillet seal using Type 1, Class B ½ sealant. Refer to Chapter 20, Fuel, Weather and High-Temperature Sealing - Maintenance Practices.

- (12) Examine the axle spacer for wear at the grease seals contact area. If the grooves will not let the seal seat correctly, replace the axle spacer.

**NOTE:** Cessna Propeller Aircraft Product Support, 316-517-5800 or Fax 316-942-9006, is the source to get the information on damage criteria.

- (13) Remove all wheel bearing cones.

- (a) Clean the bearing cones and cups and the wheel halves with stoddard solvent or an equivalent approved cleaning solvent.

**WARNING:** Use low pressure shop air to dry bearings. Do not spin bearing cones with compressed air. Dry running bearings without lubrication can explode.

- (14) Examine for, and replace the bearing cups if the cups are loose in the wheels, or there are scratches, pitting, corrosion, or signs of overheating.
- (15) Examine for, and replace the bearing cones if there are nicks, scratches, water staining, spalling, heat discoloration, roller wear, cage damage, cracks, or distortion.
- (16) Re-pack bearings with general purpose grease MIL-G-81322 or an equivalent grease.
- (17) Inspect snap rings and grease seals for distortion or wear.

**NOTE:** Molded rubber grease seals should be replaced if cracked, dried out or distorted.

- (18) Install the bearings in the wheels with the grease seals.

B. Install Main Wheel and Tire (Refer to Figure 201).

- (1) Place wheel assembly on axle.
- (2) Install axle nut and rotate wheel while torquing to 60 inch-pounds (6.8 N.m). Back off axle nut and torque to 30 inch-pounds (3.4 N.m) while rotating wheel. Tighten axle nut to next castellation but do not advance nut in excess of 15 degrees (one-half castellation). Install cotter pin.

**NOTE:** If torque exceeds 40 inch-pounds (4.5 N.m) during final tightening, remove nut and install washers as required to meet the torque requirements given above. Washers can be ordered from Cessna Parts Distribution.

- (3) Install brake backplate and shim using bolts and washers. Torque bolts from 85 to 90 inch-pounds (9.6 to 10.2 N.m).

**NOTE:** Bolts incorporate a special self-locking feature and are typically good for approximately four to six reuses. If bolt can be fully engaged into the backplate by hand with no resistance, the self-locking feature of bolt has been destroyed and the bolt should be rejected. Replacement bolts can be ordered from Cessna Parts Distribution.

- (4) Inflate tire to proper pressure. Refer to Chapter 12, Tires - Servicing.
- (5) Remove airplane from jacks. Refer to Chapter 7, Jacking - Maintenance Practices.

## 7. Main Wheel, Tire and Tube Disassembly/Reassembly

**WARNING:** Injury can result from attempting to separate wheel halves with tube inflated. Take care to avoid damaging wheel halves when breaking tire beads loose.

A. Disassemble Main Wheel, Tire and Tube (Refer to Figure 201).

**NOTE:** Refer to Tire Mounting Precautions before disassembly of main wheel, tire and tube.

- (1) Ensure that the tube is deflated completely, then break beads of tire loose.
- (2) Remove thru-bolts and separate wheel halves. Retain spacer.
- (3) Remove tire, tube, and brake disk.
- (4) Remove snap rings, grease seals and bearing cone from inboard wheel half.
- (5) Remove snap ring, grease seal, bearing cone, from outboard wheel half.

**NOTE:** Bearing cups are a press-fit in wheel halves and should not be removed unless replacement is necessary. To remove bearing cups, heat wheel half in boiling water for 15 minutes. Using an arbor press, press out bearing cup and press in new bearing cup while wheel is still hot.

B. Assemble Main Wheel, Tire and Tube (Refer to Figure 201).

**NOTE:** Refer to Tire Mounting Precautions before reassembly of main wheel, tire and tube.

- (1) Clean the inside of both wheel halves with mineral spirits.
- (2) Let it dry and apply Royco 103 or other MIL-C-16173 Type 1, Grade 1 protectant to all surfaces except the bearing outer race and the flanges where the tire bead seats.
 

**NOTE:** A swab may be necessary to apply protectant to the wheel material inside the bolt holes.
- (3) If replacing the bearing outer races, remove outer race and clean race cup bore surfaces of the wheel and apply a thin coating of protectant to the mating surface of the wheel. Install outer race while protectant is still wet.
- (4) Brush coat the wheel surfaces around outer race after race installation to replace any protectant removed during the race installation.
 

**NOTE:** Some protectant in the snap ring groove is permitted, but do not fill the groove. Too much protectant can be removed with mineral spirits.
- (5) Insert thru-bolts through brake disk and position in inner wheel half, using bolts to guide disc. Ensure disc is bottomed in wheel half.
- (6) Position tire and tube on outboard wheel half.
 

**NOTE:** Lightweight point of tire is marked with a red dot on tire sidewall and heavyweight point of tube is marked with a contrasting color line (usually near valve stem). When installing tire, place these marks adjacent to each other.
- (7) Valve stem must protrude through hole in wheel half.
- (8) With spacer positioned into inboard wheel, place outboard wheel half in position, applying a light force to keep wheel halves together. Do not pinch tube between wheel halves.
- (9) Assemble washers and nuts on thru-bolts.
- (10) Torque nuts evenly to 150 inch-pounds (16.9 N.m).
 

**CAUTION:** Uneven or improper torque of thru-bolt nuts can cause bolt failure with resultant wheel failure.
- (11) Inflate tube to set tire beads, then adjust tire pressure. Refer to Chapter 12, Tires - Servicing.
- (12) Clean bearing cones and repack with clean wheel bearing grease. (Refer to Chapter 12.)
- (13) Assemble bearing cone and grease seal into inboard wheel half and secure with snap ring.
- (14) Assemble bearing cone and grease seal into outboard wheel half and secure with snap ring.

## 8. Brake Backplate and Pressure Plate Removal/Installation

**NOTE:** Brake linings can be removed without removing main wheels or disconnecting brake lines.

**NOTE:** It is not necessary to remove the anchor bolts or the anchor bolt nuts to remove the brake assembly.

### A. Remove Backplate and Pressure Plate (Refer to Figure 202).

- (1) Remove brake backplate bolt's.
- (2) Remove backplate's and shim.
 

**NOTE:** Only one shim is allowed.
- (3) Slide brake cylinder clear of anchor bolts.
- (4) Remove pressure plate and linings from anchor bolts.
- (5) Retain brake piston insulators.

### B. Install Backplate and Pressure Plate (Refer to Figure 202).

**CAUTION:** Brake linings with different part numbers must not be intermixed on the airplane. Brake function can be altered and diminished as a result of intermixed brake linings.

- (1) Find and record the part numbers for all of the brake linings on the left and on the right sides.
 

**NOTE:** Make sure that all of the brake linings that are installed and all of the replacement brake linings that you will install have the same part numbers.

**NOTE:** Refer to the Cleveland Brake Lining Identification Guide if the part numbers on the brake linings are not legible.
- (2) Slide new brake lining and pressure plate over anchor bolts.
- (3) Insert piston insulators opposite pistons and slide brake cylinder over anchor bolts.

- (4) Position backplate's and shim over brake disc opposite backplate bolt holes in brake cylinder.
- (5) Install backplate bolts and torque from 85 to 90 inch-pounds.

**NOTE:** Backplate bolts incorporate a special self-locking feature and are typically good for approximately four to six reuses. If backplate bolt can be fully engaged into the backplate by hand with no resistance, the self-locking feature of backplate bolt has been destroyed and the backplate bolt should be rejected. Replacement bolts can be ordered from Cessna Parts Distribution.

- (6) Do the Operational Check of the Brakes. Refer to Chapter 32-40-00, Wheels and Brakes - Inspection/Check, Brakes Operational Check.

## 9. Brake Assembly Removal/Installation

### A. Remove the Brake Assembly (Refer to Figure 202).

- (1) Without applying brakes, pull parking brake handle to the ON position (fully out).
- (2) Disconnect brake line at brake cylinder and allow fluid to drain from brake line.
- (3) Remove backplate bolt's and backplate's.
- (4) Slide brake cylinder assembly off torque plate.

### B. Install the Brake Assembly (Refer to Figure 202 ).

- (1) Install pressure plate over anchor bolts.

**CAUTION:** Do not use a liquid lubricant on the anchor bolts or torque plate bushings. Liquid lubricant can attract dirt and moisture that can cause the accelerated wear or corrosion of the components.

- (2) Lubricate the anchor bolts and torque plate bushings with the following:

- (a) For non-amphibious environments, use Silicone Spray, Dri-Slide® Multi-Purpose Lubricant or LPS Force 842® Dry Moly Lubricant (equivalent substitutes are permitted).
- (b) For amphibious environments, use Lubriplate X-357 Extreme Pressure Moly Lubricant (equivalent substitutes are permitted).

- (3) Purge any air from the brake assembly before installation on the torque plate.

- (4) Slide brake cylinder assembly onto torque plate.

- (5) With shim positioned against backplate's, install backplate bolts and torque from 85 to 90 inch-pounds (9.6 to 10.2 N.m).

**NOTE:** Backplate bolts incorporate a special self-locking feature and are typically good for approximately four to six reuses. If backplate bolt can be fully engaged into the backplate by hand with no resistance, the self-locking feature of backplate bolt has been destroyed and the backplate bolt should be rejected. Replacement bolts can be ordered from Cessna Parts Distribution.

- (6) Connect brake line at wheel cylinder fitting.

- (7) Push parking brake handle to the off position (fully in).

- (8) Bleed brake system. Refer to Brake System Bleeding.

- (9) Do the Operational Check of the Brakes. Refer to Chapter 32-40-00, Wheels and Brakes - Inspection/Check, Brakes Operational Check.

## 10. New Brake Burn-In

### A. Airplanes 20800001 thru 20800135 and 208B0001 thru 208B0102.

- (1) Perform six consecutive light braking applications from 20 to 35 knots. Allow brake discs to cool substantially between stops.

**CAUTION:** Do not set the parking brakes while they are hot. This will help to prevent irregular friction surface mix transfer that can result in brake clatter, noise and vibration.

### B. Airplanes 20800136 and On, 208B0103 and On, and All Spares.

**NOTE:** The brake pads are of a metallic composition and require the following break-in procedure.

- (1) Perform two consecutive full stop braking applications from 30 to 35 knots.

**CAUTION:** Do not allow brake discs to cool substantially between stops. Use caution in performing this procedure, as higher speeds with successive stops could cause the brakes to overheat, resulting in warped discs and/or pressure plates.

## 11. Brake Assembly Disassembly/Reassembly

- A. Disassemble the Brake Assembly (Refer to Figure 202).
  - (1) Remove pistons and insulators from brake cylinder. Remove O-rings from piston and discard.
  - (2) Remove bleeder valve cap and bleeder valve.
- B. Assemble the Brake Assembly (Refer to Figure 202).
  - (1) Install bleeder valve in brake cylinder.
  - (2) Using clean hydraulic fluid (MIL-H-5606) as a lubricant, install new O-rings on pistons.
  - (3) Install pistons into cylinder.
  - (4) Install insulators in pistons.

## 12. Nose Wheel Removal/Installation

- A. Remove Nose Wheel (Refer to Figure 203).
  - (1) Jack airplane. Refer to Chapter 7, Jacking - Maintenance Practices.
 

**WARNING:** Make sure that you deflate the tire before you remove the wheel/tire assembly from the airplane. When all pressure has been released, use an extraction tool to remove the valve core from the valve stem. Valve cores under pressure can be ejected from the valve stem and cause injury to personnel or damage to the airplane. If you think there is wheel or tire damage, get access to the tire from the front or rear, not from the side (facing the wheel).
  - (2) Deflate tire completely.
  - (3) Remove cotter pin, nut and washer from one side of fork, withdraw axle stud.
  - (4) Using long punch through one axle bucket, tap out bucket at opposite side of fork.
  - (5) Remove both buckets and pull tire and wheel from fork.
  - (6) Remove spacers and axle tube before disassembling wheel.
  - (7) Examine the wheel axle tube for condition, cracks, corrosion, and wear.
    - (a) Examine the axle spacer for wear at the grease seals contact area. If the grooves will not let the seal seat correctly, replace the axle spacer.
  - (8) Examine the wheel spacers and the buckets for condition, cracks, and corrosion.
    - (a) For airplanes 20800202 and On, 208B0256 and On, and airplanes that incorporate CAB91-30, examine the seal for condition, cuts, and deterioration.
  - (9) Examine the axle stud for condition, bends, damaged threads, cracks, and corrosion.
  - (10) Remove all wheel bearing cones.
    - (a) Clean the bearing cones and cups and the wheel halves with stoddard solvent or an equivalent approved cleaning solvent.
 

**WARNING:** Use low pressure shop air to dry bearings. Do not spin bearing cones with compressed air. Dry running bearings without lubrication can explode.
  - (11) Examine for, and replace the bearing cups if the cups are loose in the wheels, or there are scratches, pitting, corrosion, or signs of overheating.
  - (12) Examine for, and replace the bearing cones if there are nicks, scratches, water staining, spalling, heat discoloration, roller wear, cage damage, cracks, or distortion.
  - (13) Re-pack the bearings with general purpose grease MIL-G-81322 or an equivalent grease.
  - (14) Inspect snap rings and grease seals for distortion or wear.
 

**NOTE:** Molded rubber grease seals should be replaced if cracked, dried out or distorted.
  - (15) Install the bearings in the wheels with the grease seals.
- B. Install Nose Wheel Airplanes 20800001 thru 20800201 and 208B0001 thru 208B0255 not incorporating CAB 91-30 (Refer to Figure 203).

- (1) Insert axle tube into wheel and place a spacer on each side of wheel.
- (2) Position wheel into fork and install buckets into fork recesses. Tap buckets with nonmetallic hammer until seated in fork.
- (3) Install axle stud, washer, and nut.
- (4) Tighten nut until a slight drag can be felt when rotating the tire.
- (5) Rotate the tire, by hand, and measure the force at the outside diameter of tire. Force should be between 3 and 5 pounds (13.4 to 22.2 N).
- (6) Install new cotter pin in nut.

**NOTE:** If cotter pin does not line up, back off nut to the next castellation.

- (7) Again, verify the measured force at the outside diameter of the tire is between 3 and 5 pounds (13.4 to 22.2 N).
- (8) Remove airplane from jacks. Refer to Chapter 7, Jacking - Maintenance Practices.

- C. Install Nose Wheel Airplanes 20800202 and On and 208B0256 and On and Airplanes 20800001 thru 20800201 and 208B0001 thru 208B0255 incorporating CAB 91-30 (Refer to Figure 203).

**NOTE:** Application of Permatex Anti-Seize Lubricant as indicated in this procedure will provide protection for nose wheel bearings and, if followed carefully, will allow 200 hours between bearing inspections and wheel bearing repacking.

- (1) Coat mating surfaces of seal and spacer with anti-seize lubricant, and then apply to seal surface which contacts wheel bearing seal.
- (2) Insert axle tube into wheel and place a seal and spacer on each side of wheel.
- (3) Coat inside surface of the spacer and outside surface of axle where axle will slide inside the spacer with anti-seize lubricant.
- (4) Coat outer surface of buckets with anti-seize lubricant.
- (5) Position wheel into fork and install buckets into fork recesses. Tap buckets with nonmetallic hammer until seated in fork.
- (6) Coat underside of axle stud with anti-seize lubricant and install axle stud, washer, and nut.
- (7) Tighten nut until a slight drag can be felt when rotating the tire.
- (8) Rotate the tire, by hand, and measure the force at the outside diameter of tire. Force should be between 3 and 5 pounds (13.4 to 22.2 N).
- (9) Install new cotter pin in nut. If cotter pin does not line up, back off nut to the next castellation.
- (10) Again, verify the measured force at the outside diameter of the tire is between 3 and 5 pounds (13.4 to 22.2 N).
- (11) Apply a small amount of anti-seize lubricant to threaded end of axle stud.
- (12) Apply a small amount of anti-seize lubricant to both sides of wheel where seal meets the snap ring of wheel bearing.
- (13) Remove airplane from jacks. Refer to Chapter 7, Jacking - Maintenance Practices.

### 13. Nose Wheel Tire and Tube Disassembly/Reassembly

- A. Disassemble Nose Wheel Tire and Tube (Refer to Figure 204).

**WARNING:** Injury can result from attempting to separate wheel halves with tube inflated. Take care to avoid damaging wheel halves when breaking tire beads loose.

**NOTE:** Refer to Tire Mounting Precautions before disassembly of nose wheel, tire and tube.

- (1) Ensure tube is completely deflated then break the beads of tire loose.
- (2) Remove thru-bolts and separate wheel halves.
- (3) Remove the tire and tube.
- (4) Remove snap rings, grease seal and bearing cones from both wheel halves.

**NOTE:** Bearing cups are a press fit in wheel halves and should not be removed unless replacement is necessary. To remove bearing cups, heat each wheel half in boiling water for 15 minutes. Using an arbor press, press out bearing cup and press in new bearing cup while wheel is still hot.

- B. Assemble Nose Wheel, Tire and Tube (Refer to Figure 204).

**NOTE:** A new tube should be used when installing a new tire. Tubes grow in service, taking a permanent set of about 25% larger than the original size. This makes a used tube too large to use in a new tire, which could cause a wrinkle and lead to tube failure.

**NOTE:** Before reassembly of nose wheel, tire and tube, refer to Tire Mounting Precautions.

- (1) Clean the inside of both wheel halves with mineral spirits.
- (2) Let it dry and apply Royco 103 or other MIL-C-16173 Type 1, Grade 1 protectant to all surfaces except the bearing outer race and the flanges where the tire bead seats.

**NOTE:** A swab may be necessary to apply protectant to the wheel material inside the bolt holes.

- (3) If replacing the bearing outer races, remove outer race and clean race cup bore surfaces of the wheel and apply a thin coating of protectant to the mating surface of the wheel. Install outer race while protectant is still wet.
- (4) Brush coat the wheel surfaces around outer race after race installation to replace any protectant removed during the race installation.

**NOTE:** Some protectant in the snap ring groove is permitted, but do not fill the groove. Too much protectant can be removed with mineral spirits.

- (5) Place tire and tube on wheel half, aligning valve stem of tube with hole in wheel half.

**NOTE:** Lightweight point of tire is marked with a red dot on tire sidewall and heavyweight point of tube is marked with a contrasting color line (usually near valve stem). When installing tire, place these marks adjacent to each other.

- (6) Position wheel half into position opposite assembled tire and wheel half, applying light force to keep wheel halves together. Do not pinch tube between wheel halves.

**CAUTION:** Uneven or improper torque of thru-bolt nuts can cause bolt failure with resultant wheel failure.

- (7) Insert thru-bolts through wheel halves and torque nuts evenly to 150 inch-pounds (16.9 N.m).
- (8) Inflate tube to set tire beads, then adjust tire pressure. Refer to Chapter 12, Tires - Servicing.
- (9) Clean bearing cones and repack with clean wheel bearing grease.
- (10) Assemble bearing cones and grease seals into both wheel halves, and secure with snap rings.

## 14. Inspection and Checks

### A. Wheel Inspection.

- (1) Disassemble wheel. Refer to Main Wheel, Tire and Tube Disassembly/Reassembly or Nose Wheel, Tire and Tube Disassembly/Reassembly.
- (2) Visually inspect the wheel halves for cracks, corrosion, or other damage. Make sure to dye penetrant inspect any areas with suspected cracks. Cracked or badly corroded parts must be replaced. Small nicks, pits, and scratches may be polished out with fine 400 grit wet or dry sandpaper and refinished.
- (3) Inspect bearing cups for looseness, scratches, pitting, corrosion or evidence of overheating. Replace cup if any defect exists.
- (4) Visually inspect bearing cones for nicks, scratches, water staining, spalling, heat discoloration, roller wear, cage damage, cracks or distortion. Replace if defective or worn.
- (5) Install new wheel bolts or the removed wheel bolts that have passed a visual and magnetic particle inspection.

**NOTE:** If the wheel bolts are to be used again, they must pass an inspection for cracks, bending, thread damage, and excessive corrosion. A complete magnetic particle inspection must be done on each bolt, especially in the radius under the head and in the threads adjacent to the bolt shank.

- (6) Inspect thru-bolt nuts for self-locking feature. Replace nut if doubtful.
- (7) Reassemble wheel. Refer to Main Wheel, Tire and Tube Disassembly/Reassembly or Nose Wheel, Tire and Tube Disassembly/Reassembly.

### B. Service Brake Disc. (Refer to Figure 202).

- (1) Discs are plated for special applications only; therefore, rust in varying degrees can occur. If a powder rust appears, one or two taxi/braking applications should wipe the disc clear. Rust allowed to progress beyond this point may require removal of the disc from the wheel assembly to properly clean both faces.



- (2) Wire brushing, followed by sanding with 220 grit sandpaper, can restore the braking surfaces for continued use.
- C. Inspect Brake Line For Chaffing (Airplanes 20800001 thru 20800039).
  - (1) Inspect brake line for chaffing against lower main landing gear axle fitting and fairing. If chaffing is evident, brake line shall be re routed in accordance with Service Bulletin CAB85-4.

Figure 201 : Sheet 1 : Main Wheel, Tire and Tube Installation

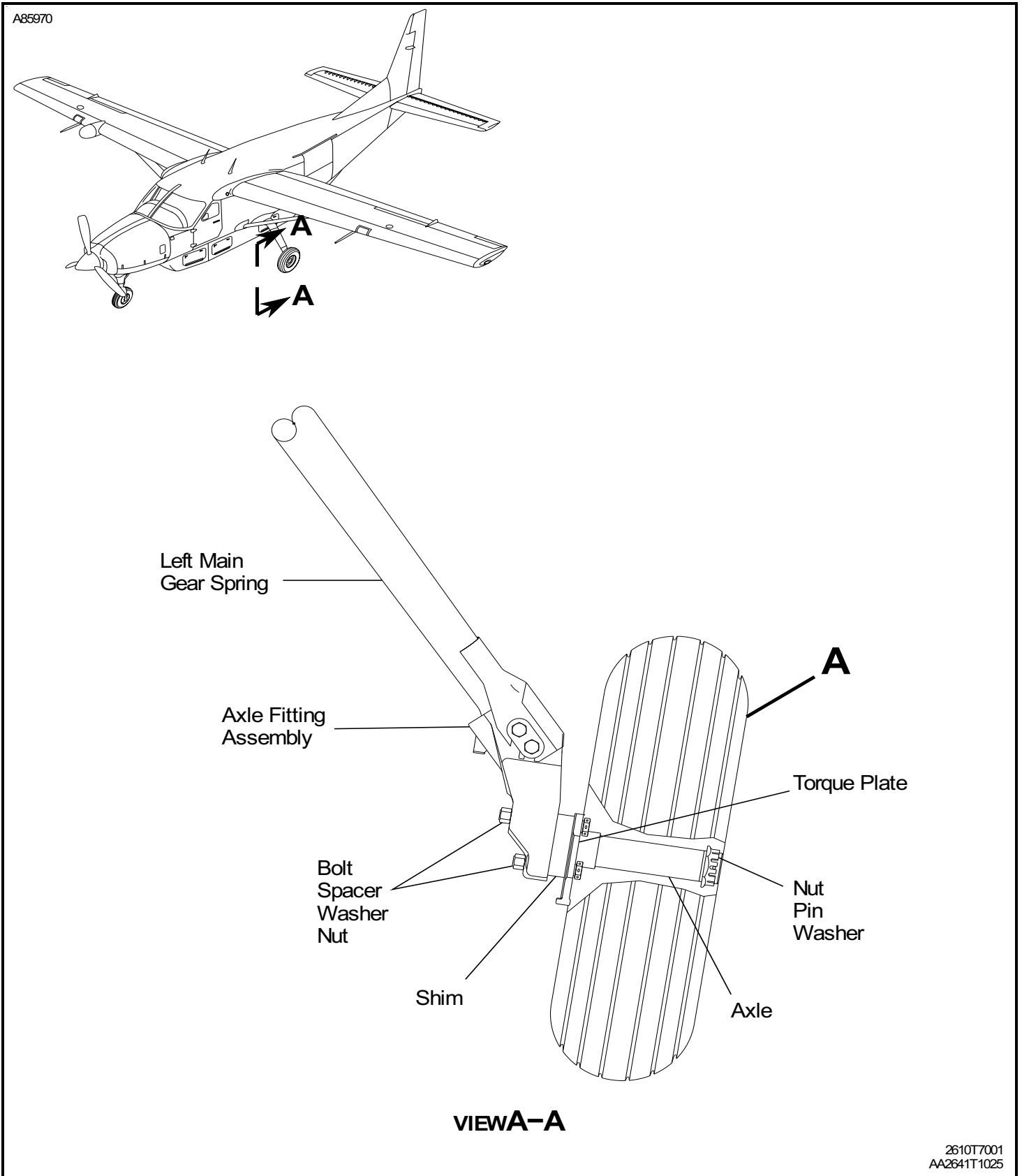


Figure 201 : Sheet 2 : Main Wheel, Tire and Tube Installation

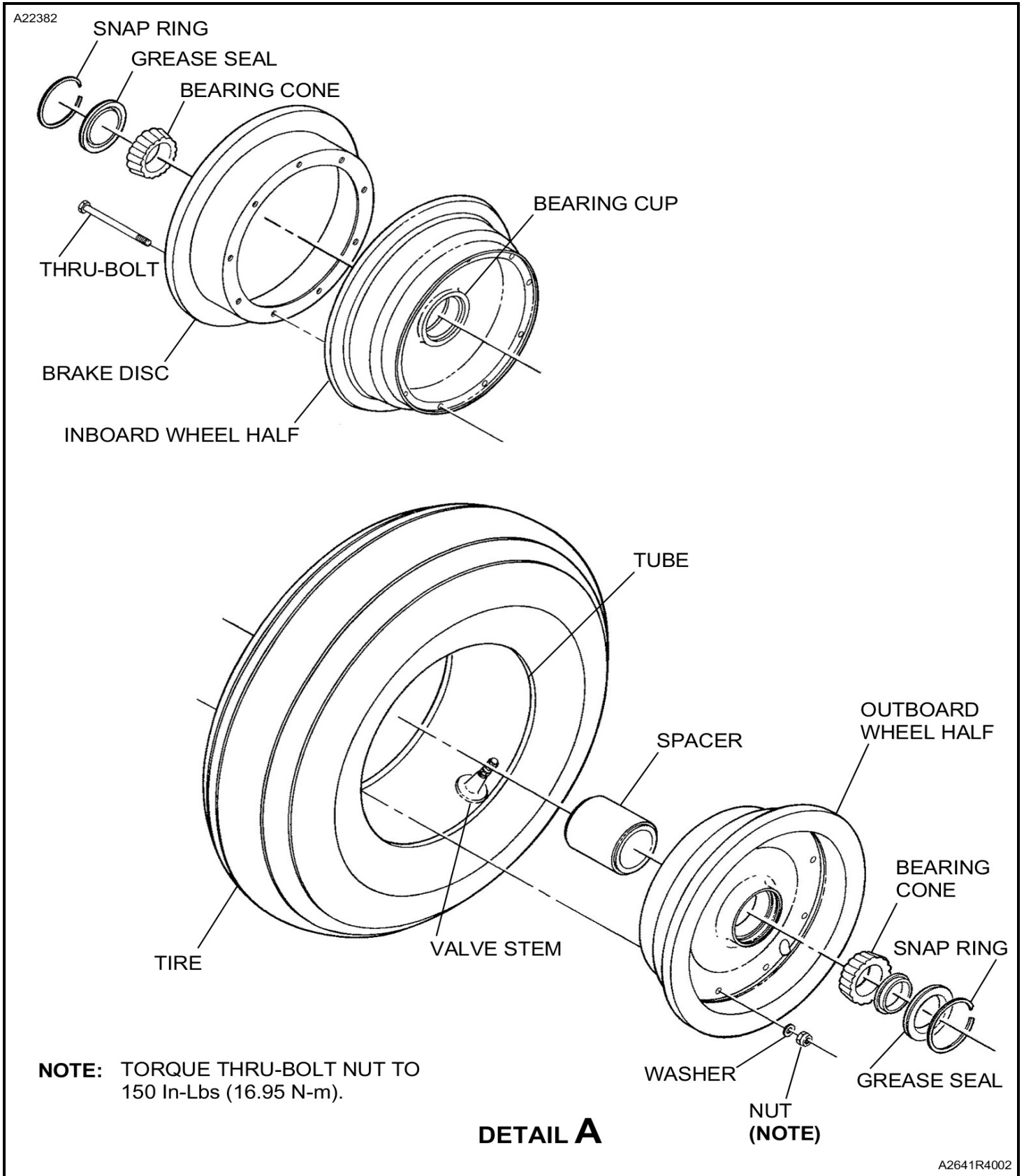
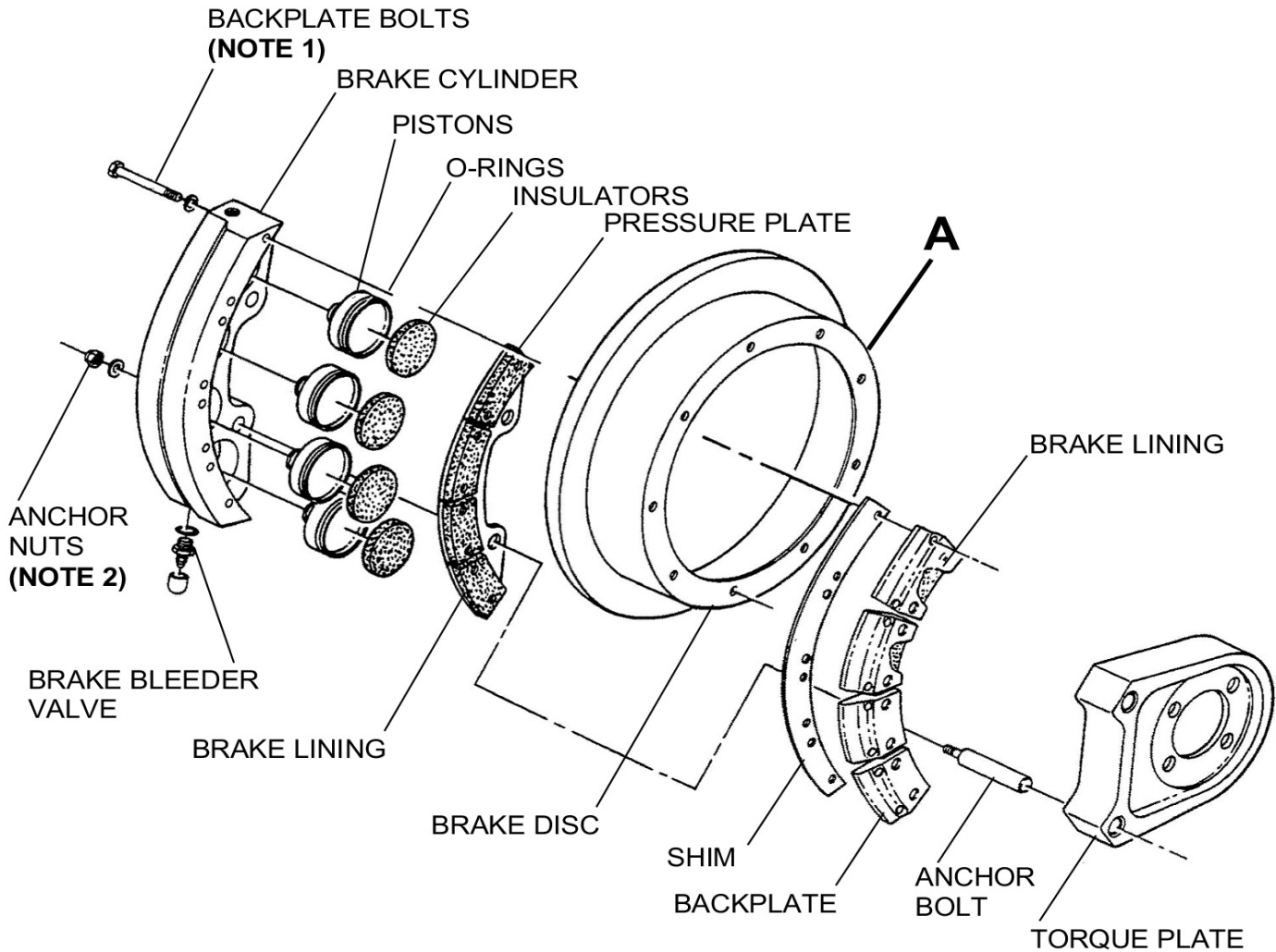


Figure 202 : Sheet 1 : Brake Assembly

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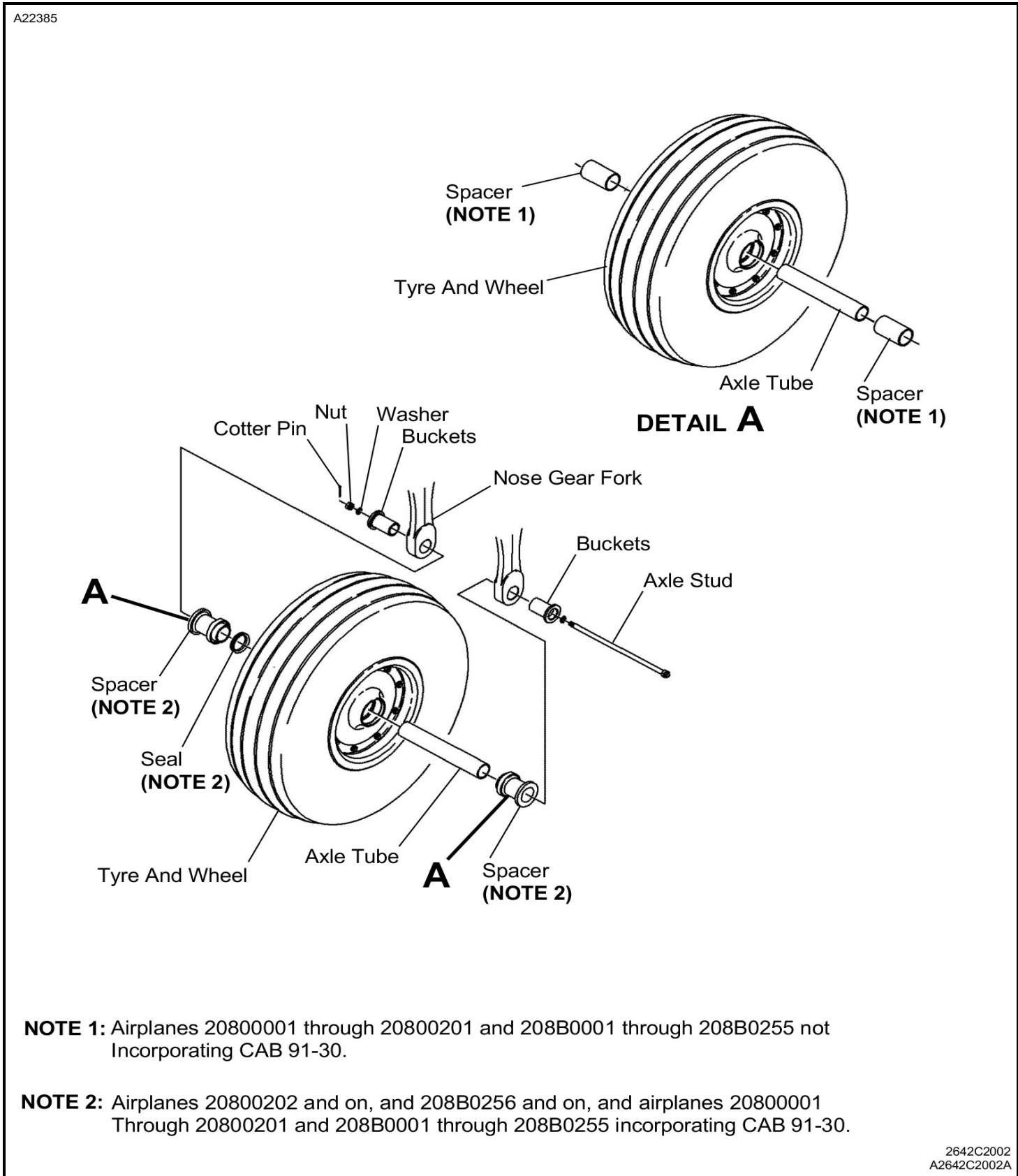


**NOTE 1:** TORQUE BACKPLATE BOLTS FROM 85 TO 90 INCH-POUNDS (9.60-10.17 N-m). BOLTS INCORPORATE A SELF-LOCKING FEATURE. IF BOLTS CAN BE FULLY ENGAGED INTO BACKPLATES BY HAND WITH NO RESISTANCE, BOLTS SHOULD BE REPLACED

**NOTE 2:** TORQUE ANCHOR NUTS FROM 85-90 INCH-POUNDS (9.60-10.17 N-m).

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Figure 203 : Sheet 1 : Nose Wheel Installation

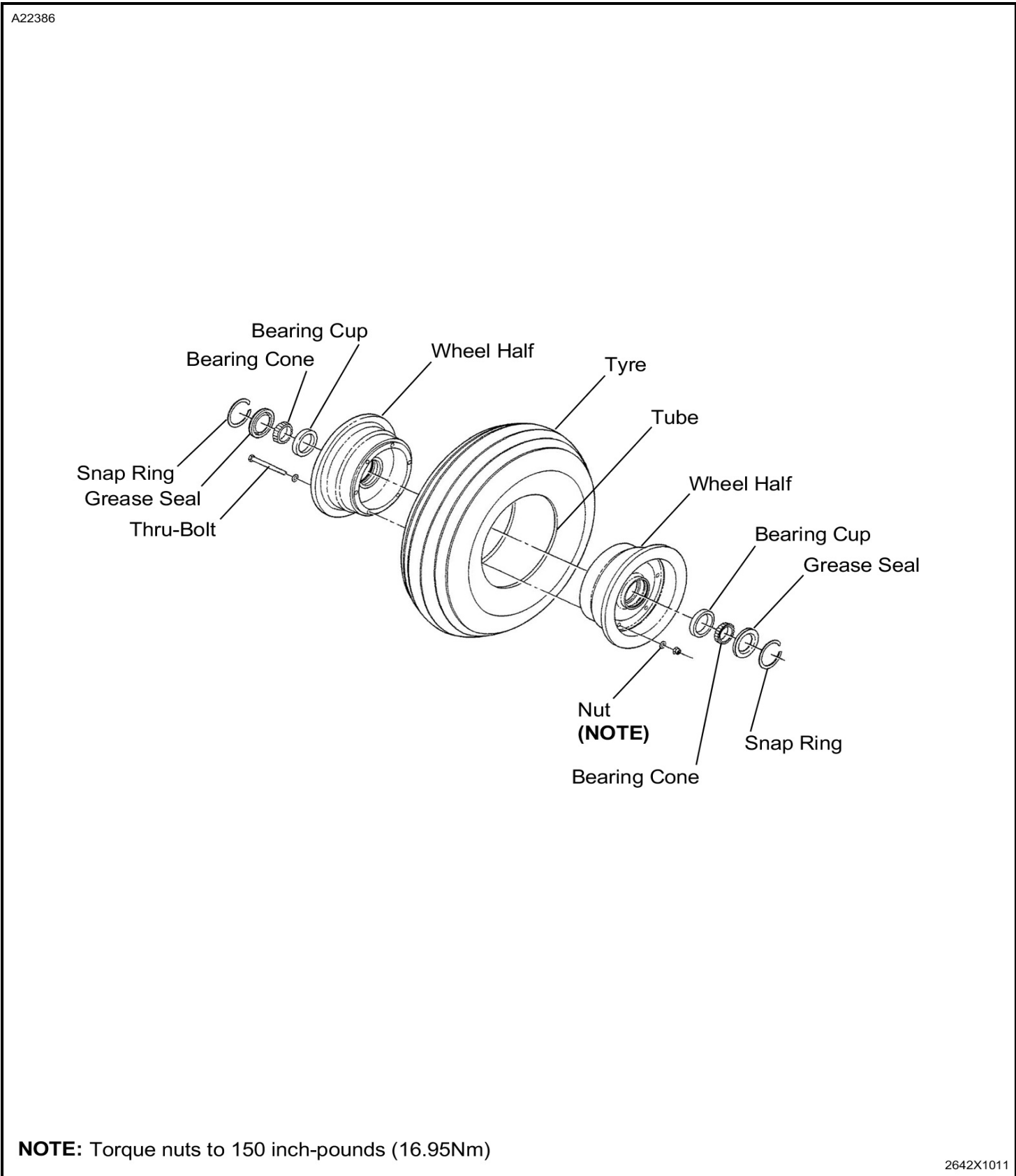


**NOTE 1:** Airplanes 20800001 through 20800201 and 208B0001 through 208B0255 not Incorporating CAB 91-30.

**NOTE 2:** Airplanes 20800202 and on, and 208B0256 and on, and airplanes 20800001 Through 20800201 and 208B0001 through 208B0255 incorporating CAB 91-30.

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Figure 204 : Sheet 1 : Nose Wheel, Tire and Tube Installation



**NOTE:** Torque nuts to 150 inch-pounds (16.95Nm)

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