

NOSE GEAR

1. DESCRIPTION

The nose gear consists of a tubular steel strut attached to the engine mount. The free castoring nose wheel's maximum turning arc is 216 degrees (108 degrees either side of center). Shock absorption is provided by a series of stacked, polymer pucks which react against the engine mount. Steering is accomplished by differential application of the main gear brakes. The wheel, axle, tire and tube, wheel bearing, and seal are mounted on the nose gear.

EFFECTIVITY:
All

2. TROUBLESHOOTING

TROUBLE	PROBABLE CAUSE	REMEDY
Excessive tire wear.	Main gear out of alignment.	Align main gear. (Refer to 32-10)
	Nose wheel out of balance	Balance nose wheel and tire.
	Incorrect tire pressure.	Inflate to proper pressure. (Refer to 12-10)
	Nose gear assembly damaged.	Perform Inspection/Check - Nose Gear Assembly. (Refer to 32-20)
Nose wheel shimmy.	Nose wheel out of balance	Balance nose wheel and tire.
	Loose, incorrectly tightened spindle nut.	Perform Adjustment/Test - Nose Wheel Fork Assembly. (Refer to 32-20)
	Worn or incorrectly installed thrust washer.	Perform Inspection - Nose Wheel Fork Assembly. (Refer to 32-20)
	Incorrect tire pressure.	Inflate to proper pressure. (Refer to 12-10)
	Defective tire.	Replace tire.
	Nose gear assembly damaged.	Perform Inspection/Check - Nose Gear Assembly. (Refer to 32-20)
Airplane leans forward.	Incorrect tire pressure.	Inflate to proper pressure. (Refer to 12-10)
	Attaching parts loose, defective.	Tighten loose parts, replace.
	Bent axles.	Replace with new parts.
	Polymer pucks damaged.	Inspect and replace with new parts.
	Nose gear assembly damaged.	Perform Inspection/Check - Nose Gear Assembly. (Refer to 32-20)

3. MAINTENANCE PRACTICES

A. Nose Gear Fairing (See Figure 32-201)

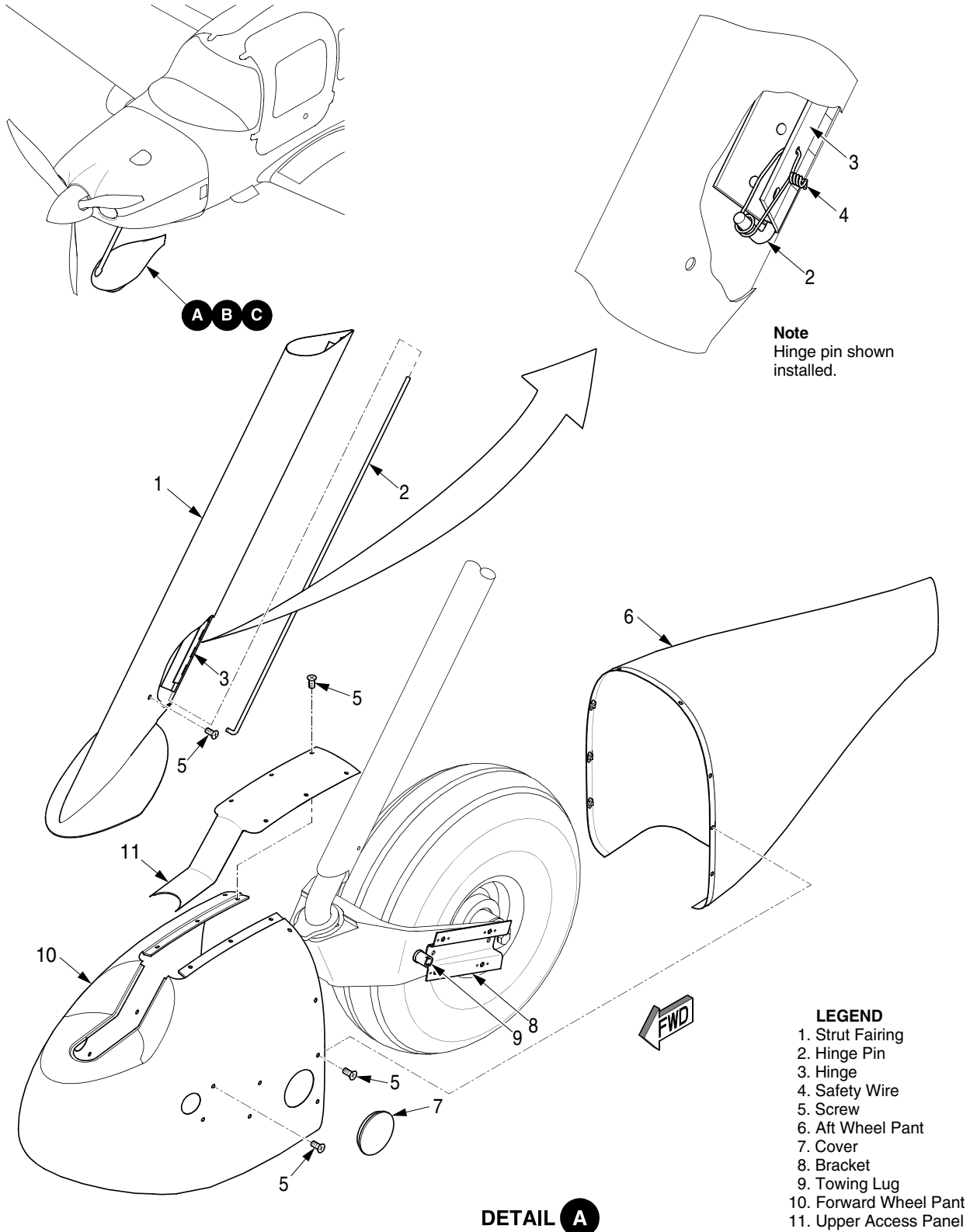
- (1) Removal - Nose Gear Fairing
 - (a) *Serials 0002 thru 2437:* Turn nose wheel to full 108 degree deflection.
 - (b) *Serials 2438 & subs:* Turn nose wheel to full 85 degree deflection.
 - (c) Cut and remove safety wire securing hinge pin to strut fairing and pull hinge pin from strut fairing.
 - (d) Remove screws securing strut fairing to nose strut and remove strut fairing from airplane.
 - (e) Remove towing lugs from nose wheel assembly.
 - (f) *Serials 0002 thru 0527:* Remove wheel pant assembly.
 - 1 Remove screws securing upper access panel to forward wheel pant and remove upper access panel from airplane.
 - 2 Remove screws securing aft wheel pant to forward wheel pant and remove aft wheel pant.
 - 3 Remove screws securing forward wheel pant to nose wheel assembly and remove forward wheel pant from airplane.
 - (g) *Serials 0528 & subs:* Remove wheel pant assembly.
 - 1 Remove screws securing forward wheel pant to aft wheel pant and remove forward wheel pant.
 - 2 Remove screws securing aft wheel pant to nose wheel assembly and remove aft wheel pant from airplane.
- (2) Installation - Nose Gear Fairing
 - (a) Acquire necessary tools, equipment, and supplies.

Description	P/N or Spec.	Supplier	Purpose
Safety Wire	-	Any Source	Secure hinge pin.
Loctite®	222	Any Source	Secure strut fairing.

- (b) Turn nose wheel to full 108 degree deflection.
- (c) Pry trailing edge seam of strut fairing open and position strut fairing around nose gear-strut.
- (d) From bottom of strut fairing, insert and slide hinge pin into hinge bodies until hinge pin is fully inserted and seated.
- (e) Secure hinge pin to strut fairing with safety wire.
- (f) Apply Loctite to strut fairing screws. (Refer to 20-40)
- (g) Install screws securing strut fairing to nose gear strut.
- (h) *Serials 0002 thru 0527:* Install wheel pant assembly.
 - 1 Place forward wheel pant in proper alignment with nose wheel assembly and install screws.
 - 2 Insert upper access panel in forward wheel pant slot.
 - 3 While supporting upper access panel, place aft wheel pant in proper alignment with forward wheel pant and apply light force to mate the wheel pants together.
 - 4 Install screws along nose pant seam and upper access panel.
- (i) *Serials 0528 & subs:* Install wheel pant assembly.
 - 1 Place aft wheel pant in proper alignment with nose wheel assembly and install screws.

EFFECTIVITY:
All

- 2 Place forward wheel pant in proper alignment with aft wheel pant and apply light force to mate the wheel pants together.
 - 3 Install screws along nose pant seam.
 - 4 *Serials 2438 & subs:* Rotate nose wheel fully from side to side, verifying no contact occurs between wheel pant and strut fairing.
- (j) Install towing lugs to nose wheel assembly.
 - (k) Rotate nose wheel assembly to ensure there is no interference through caster travel.

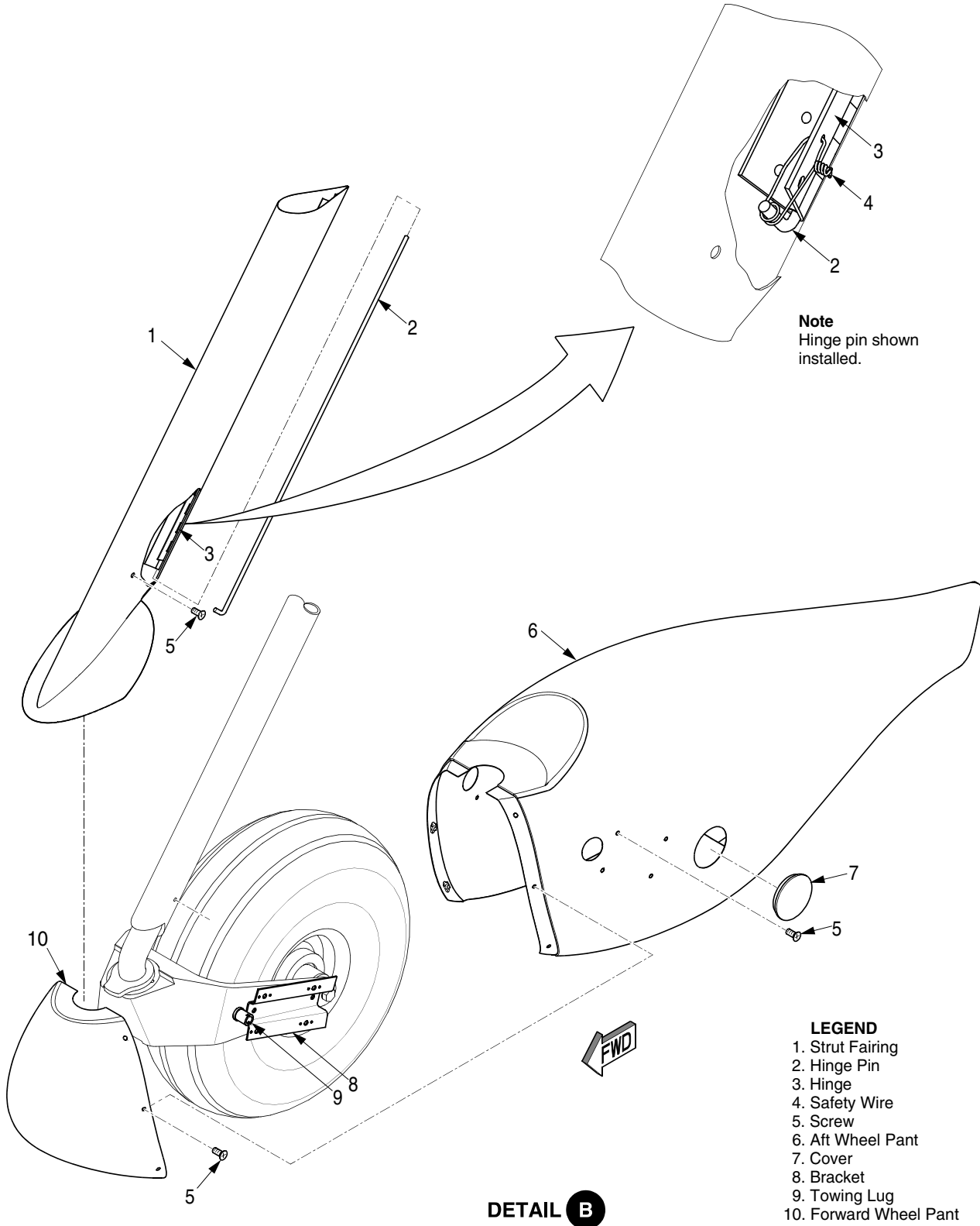


Serials 0002 thru 0527.

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Figure 32-201
Nose Gear Fairing Installation - Serials 0002 thru 0527 (Sheet 1 of 3)

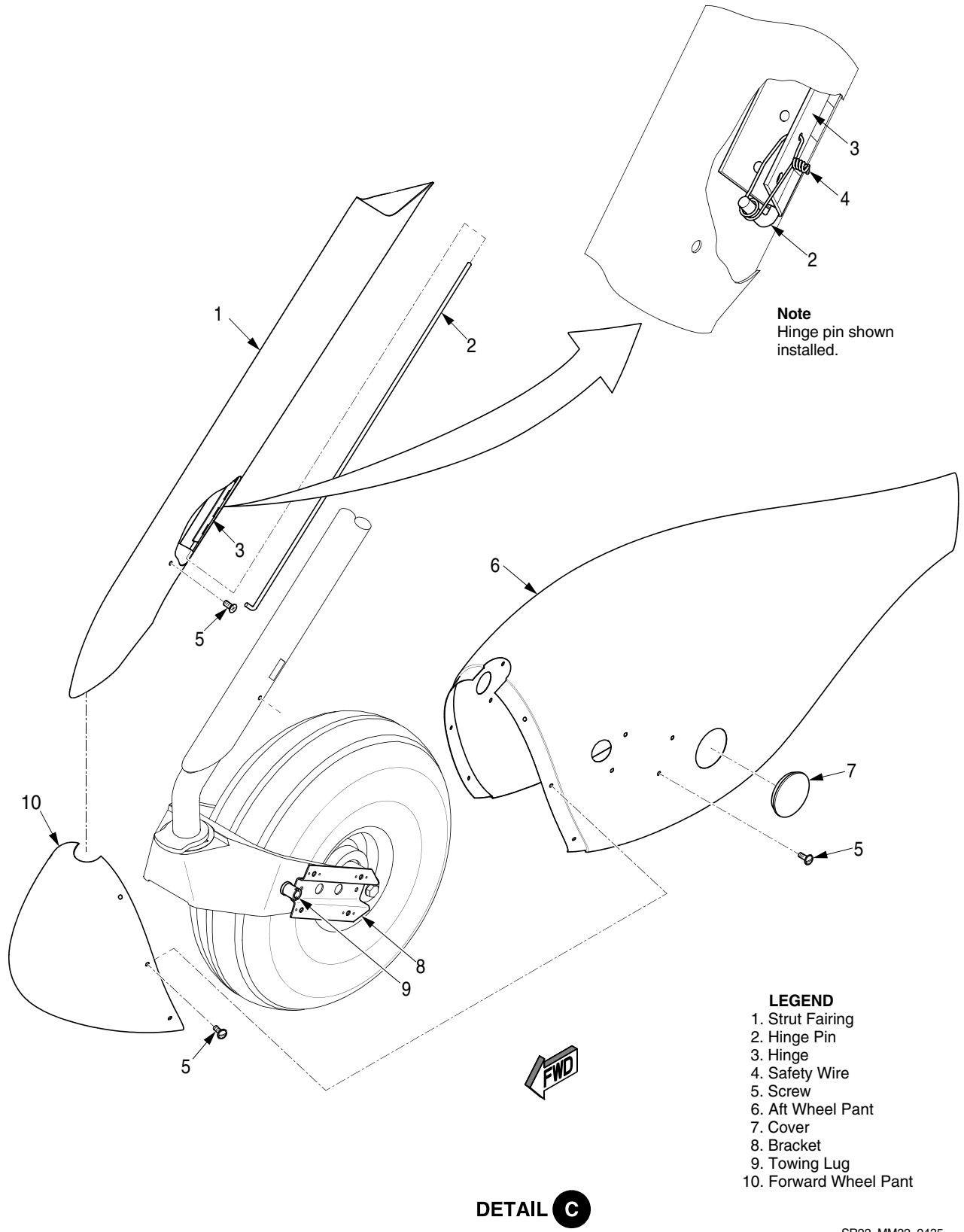
EFFECTIVITY:
Serials 0002 thru 0527



Serials 0528 thru 2333, 2335 thru 2419, 2421 thru 2437.

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Figure 32-201
Nose Gear Fairing Installation - Serials 0528 thru 2437 (Sheet 2 of 3)



SR22_MM32_2435

Figure 32-201
Nose Gear Fairing Installation - Serials 2438 & subs (Sheet 3 of 3)

EFFECTIVITY:
Serials 2438 & subs

B. Nose Gear Strut (See Figure 32-202)

- (1) Removal - Nose Gear Strut
 - (a) Remove nose gear fairing. (Refer to 32-20)
 - (b) Remove engine cowling. (Refer to 71-10)
 - (c) Raise airplane on jacks. (Refer to 07-10)
 - (d) Remove nose wheel fork assembly. (Refer to 32-20)
 - (e) With nose gear strut supported, remove bolts, washers, and spacers securing nose gear strut to lower puck pan.
 - (f) Remove cotter pins, nuts, washers, spacers, and bolts securing nose gear strut to lower engine mount.
 - (g) Lower nose gear strut to ground.

(2) Installation - Nose Gear Strut

- (a) Acquire necessary tools, equipment, and supplies.

Description	P/N or Spec.	Supplier	Purpose
Grease	ASG22	Aeroshell	Lubrication.
Safety Wire	-	Any Source	Secure nose gear strut bolts.

- (b) With nose gear strut supported under airplane, lift strut up until bolt holes are in proper alignment with engine mount.
- (c) Secure nose gear strut to lower engine mount.
 - 1 Coat bolt shafts and spacers with thin coat of grease.
 - 2 Install bolts, spacers, washers, and nuts.

Note: If total gap measures between 0.125 to 0.250 inch (3.18 to 6.35 mm), install one additional washer to each side. If total gap measures between 0.250 to 0.375 inch (6.35 to 9.53 mm), install two additional washers to each side. If total gap exceeds 0.375 inch (9.53 mm), contact Cirrus Design for disposition.

- 3 With bolt against nose gear strut, measure total gap (add right and left side gaps) between spacer and engine mount. If necessary, install additional washers.
- 4 Torque nuts to 480 - 690 in-lb (53 - 76 Nm).
- 5 Install cotter pins.
- (d) Secure nose gear strut to lower puck pan.
 - 1 Coat bolt shafts with thin coat of grease.
 - 2 Install bolts, washers, and spacers.
 - 3 Torque bolts to 480 - 690 in-lb (53 - 76 Nm).
 - 4 Safety wire bolts to nose gear strut.
- (e) Lower airplane off jacks. (Refer to 07-10)
- (f) Install engine cowling. (Refer to 71-10)
- (g) Install nose gear fairing. (Refer to 32-20)

- (3) Inspection/Check - Nose Gear Assembly (See Figure 32-205)
 - (a) Acquire necessary tools, equipment, and supplies.

Description	P/N or Spec.	Supplier	Purpose
Grease	ASG22	Aeroshell	Lubrication.
Calibrated Spring Scale	5A354	Chatillon 83-30 Kew Gardens Rd Kew Gardens, NY 11415	Load determination.
Flashlight	-	Any Source	Inspect welds.
10X Magnifier	-	Any Source	Inspect welds.
Vernier Caliper	-	Any Source	Inspect upper puck pan assembly.

- (b) Remove nose gear fairing. (Refer to 32-20)
- (c) Remove engine cowling. (Refer to 71-10)
- (d) Raise airplane on jacks. (Refer to 07-10)
- (e) Inspect nose gear strut and attach points for security, cracks, and corrosion.
- (f) Visually inspect the fillet weld between the nose gear strut and wheel spindle in accordance with FAA AC 43.13-1B, Chapter 5, Section 2, Visual Inspection.
 - 1 Using flashlight and 10X magnifier, visually inspect fillet weld for signs of distress.
 - 2 Verify there is no evidence of cracking in paint on or around surface of fillet weld.
 - 3 Verify there is no evidence of deformation to nose gear strut on or around surface of fillet weld.
- (g) Remove cotter pin, nut, washers, and bumper securing lower and upper puck pans together.
- (h) With nose gear strut supported, remove bolts, washers, and spacers securing nose gear strut to lower puck pan.

Note: To facilitate reinstallation, note orientation and position of pucks prior to removal. Pucks must be reinstalled in same orientation and order as previous installation.
- (i) Remove pucks and spacer from upper puck pan shaft.
- (j) Inspect pucks for delamination, cracking, or other distress.
- (k) At lower puck pan assembly, inspect flanged bushing, bumper, and attaching hardware for wear and condition.
- (l) Visually inspect the weld securing shaft to upper puck pan in accordance with FAA AC 43.13-1B, Chapter 5, Section 2, Visual Inspection.
 - 1 Using flashlight and 10X magnifier, visually inspect weld for signs of distress.
 - 2 Verify there is no evidence of cracking on or around surface of weld.
 - 3 Verify there is no evidence of deformation to upper puck pan on or around surface of weld.
- (m) Inspect upper puck pan shaft for wear and condition. If wear is found, perform the following:
 - 1 Using vernier caliper, measure wall thickness of shaft lower end to determine a baseline wall thickness.

- 2 Using vernier caliper, measure wall thickness of shaft where shaft rubs against lower puck pan. If wear exceeds 50% of baseline wall thickness, the upper puck pan assembly must be replaced. Contact Cirrus Design for disposition.
- (n) Install spacer and pucks onto shaft of upper puck pan.

CAUTION: Do not torque nut securing lower and upper puck pans together. Tighten nut until cotter pin hole is aligned with nut castellations.

- (o) Install bumper, washers, nut, and cotter pin securing lower and upper puck pans together.
- (p) Install bolts, washers, and spacers securing nose gear strut to lower puck pan. Torque bolts to 480 - 690 in-lb (53 - 76 Nm). Safety wire bolts to nose gear strut.
- (q) Inspect nose wheel fork assembly and spindle for security, cracks, corrosion, and cleanliness.
- (r) Attach spring scale to axle on nose wheel fork assembly and verify a constant force of 20 - 25 lbs (9.1 - 11.3 kg) is required to rotate nose wheel fork and wheel assembly.

CAUTION: Do not allow grease to come in contact with spindle bearing surface or nose wheel fork bushings. Failure to comply with the caution may result in nose wheel shimmy.

- (s) Apply a thin coat of grease to exposed spindle threads.
- (t) Verify security of spindle nut cotter pin.
- (u) Remove airplane from jacks. ([Refer to 07-10](#))
- (v) Install engine cowling. ([Refer to 71-10](#))
- (w) Install nose gear fairing. ([Refer to 32-20](#))

C. Nose Gear Puck Stack Assembly (See Figure 32-202)

- (1) Removal - Nose Gear Puck Stack Assembly
 - (a) Remove nose gear fairing. (Refer to 32-20)
 - (b) Remove engine cowling. (Refer to 71-10)
 - (c) Raise airplane on jacks. (Refer to 07-10)
 - (d) With nose gear strut supported, remove bolts, washers, and spacers securing nose gear strut to lower puck pan.
 - (e) Remove nut, washer, spacers, and bolt securing upper puck pan to engine mount. Remove puck stack assembly from airplane.
- (2) Disassembly - Nose Gear Puck Stack Assembly
 - (a) Remove cotter pin, nut, washers, and bumper securing lower and upper puck pans together.

Note: To facilitate reinstallation, note orientation and position of pucks prior to removal. Pucks must be reinstalled in same orientation and order as previous installation.

- (b) Remove pucks from shaft of upper puck pan.
 - (3) Assembly - Nose Gear Puck Stack Assembly
 - (a) Slide pucks onto shaft of upper puck pan.
- CAUTION:** Do not torque nut securing lower and upper puck pans together. Tighten nut until cotter pin hole is aligned with nut castellations.
- (b) Install bumper, washers, nut, and cotter pin securing lower and upper puck pans together.
 - (4) Installation - Nose Gear Puck Stack Assembly
 - (a) Acquire necessary tools, equipment, and supplies.

Description	P/N or Spec.	Supplier	Purpose
Grease	ASG22	Aeroshell	Lubrication.

- (b) Coat bolt shafts with thin coat of grease.
- (c) Align top of puck stack assembly with engine mount and secure with bolt, washer, spacers, and nut.
- (d) Support nose gear strut under airplane and lift strut up until bolt holes are in proper alignment with lower puck pan.
- (e) Install bolts, washers, and spacers securing nose gear strut to lower puck pan. Torque bolts to 480 - 690 in-lb (53 - 76 Nm). Safety wire bolts to nose gear strut.
- (f) Lower airplane off jacks. (Refer to 07-10)
- (g) Install engine cowling. (Refer to 71-10)
- (h) Install nose gear fairing. (Refer to 32-20)

EFFECTIVITY:
All

D. Nose Wheel Fork Assembly (See Figure 32-203)

- (1) Removal - Nose Wheel Fork Assembly
 - (a) Remove nose gear fairing. (Refer to 32-20)
 - (b) Raise airplane on jacks. (Refer to 07-10)
 - (c) While supporting fork assembly, remove cotter pin, nut, flat washers, and Belleville washers from spindle bolt.
 - (d) Remove fork assembly from nose gear strut.
- (2) Installation - Nose Wheel Fork Assembly
 - (a) Acquire necessary tools, equipment, and supplies.

Description	P/N or Spec.	Supplier	Purpose
Grease	ASG22	Aeroshell	Lubrication.
Isopropyl Alcohol	TT-I-735 Grade A or B	Any Source	Cleaning agent.
Calibrated Spring Scale	5A354	Chatillon 83-30 Kew Gardens Rd Kew Gardens, NY 11415	Load determination.

- (b) Remove contaminants from spindle threads using wire brush and isopropyl alcohol.
- (c) Place nose wheel fork assembly into installation position.
- (d) *Serials 2438 & subs:* Coat Belleville washers with thin coat of grease.

CAUTION: Ensure Teflon coating (dark grey color) on thrust washer faces upward.

Ensure Belleville washers are installed in correct orientation. Failure to comply with this caution may result in nose wheel shimmy.

Do not allow grease to come in contact with spindle cup or nose wheel fork bushings. Failure to comply with this caution may result in nose wheel shimmy.

- (e) Install flat washers and Belleville washers in correct orientation.
- (f) Secure nose wheel fork assembly with castellated spindle nut.
- (g) Perform Adjustment/Test - Nose Wheel Fork Assembly. (Refer to 32-20)
- (h) Remove airplane from jacks. (Refer to 07-10)
- (i) Install nose gear fairing. (Refer to 32-20)
- (3) Adjustment/Test - Nose Wheel Fork Assembly
 - (a) Remove nose gear fairing. (Refer to 32-20)
 - (b) Raise airplane on jacks. (Refer to 07-10)
 - (c) Remove cotter pin securing castellated spindle nut to nose gear strut.
 - (d) Attach spring scale to axle on nose wheel fork assembly and torque castellated spindle nut so a constant force of more than 49 lbs (22.2 kg) is required to rotate nose wheel fork and wheel assembly.
 - (e) Loosen castellated spindle nut.
 - (f) Attach spring scale to axle on nose wheel fork assembly and torque castellated spindle nut so a constant force of 20 - 25 lbs (9.1 - 11.3 kg) is required to rotate nose wheel fork and wheel assembly.

CAUTION: To ensure nose gear security, use a new cotter pin on reinstallation.

Note: *Serials 0002 thru 2437:* After torquing the castellated spindle nut, the cotter pin installation holes may be aligned so that the cotter pin can not be installed. Tightening the castellated spindle nut to facilitate cotter pin installation may result in an over-torqued condition. Loosening the castellated spindle nut to facilitate cotter pin installation may result in nose wheel shimmy due to an under-torqued condition. If cotter pin can not be installed with castellated spindle nut at specified torque, perform Approved Repair - Nose Wheel Fork Assembly. (Refer to 32-20)

- (g) Secure nut with new cotter pin. Bend cotter around castellated spindle nut as shown. (See Figure 32-203)

CAUTION: Do not allow grease to come in contact with spindle bearing surface or nose wheel fork bushings. Failure to comply with this caution may result in nose wheel shimmy.

- (h) Apply a thin coat of grease to exposed spindle threads.
- (i) Remove airplane from jacks. (Refer to 07-10)
- (j) Install nose gear fairing. (Refer to 32-20)

- (4) Inspection - Nose Wheel Fork Assembly (See Figure 32-203)

- (a) Remove Nose Wheel Fork Assembly. (Refer to 32-20)

Note: If 10% or more of anodizing is still present and lower surfaces of spindle cup flange and spindle cup show no signs of deformation or gouging, the spindle cup may be reused. Otherwise replace the spindle cup.

- (b) Inspect lower surface of spindle cup flange for signs of wear, deformation, gouges or deep scratches.

Note: If some of the teflon is still present and thrust washer shows no deformation or gouging, the thrust washer may be reused. Otherwise replace the thrust washer.

If dowel pin or thrust washer is deformed or if locator hole in thrust washer is worn oblong, call Cirrus Design Customer Service for a nose wheel fork assembly replacement.

- (c) Inspect dowel pin and thrust washer for signs of wear, deformation, and gouges.
- (d) Install Nose Wheel Fork Assembly. (Refer to 32-20)

- (5) Approved Repairs - Nose Wheel Fork Assembly (See Figure 32-204) - *Serials 0002 thru 1348*
This repair may be used to add a second cotter pin installation hole through the threaded portion of the nose gear strut. The new cotter pin installation hole will be perpendicular to the original installation hole and will allow a finer degree of adjustment when securing the spindle nut.

- (a) Procedure - Repair Method #1

- 1 Acquire necessary tools, equipment, and supplies.

Description	P/N or Spec.	Supplier	Purpose
Cross Hole Tool	16473-001	Cirrus Design	Drill installation hole.

EFFECTIVITY:
All

Description	P/N or Spec.	Supplier	Purpose
Drill Bit	0.125 inch (3.2 mm)	Any Source	Drill installation hole.
Compressed Air	-	Any Source	Remove metal chips from nose gear strut.

- 2 Remove nose wheel fork assembly. ([Refer to 32-20](#))
- 3 Perform Inspection - Nose Wheel Fork Assembly. ([Refer to 32-20](#))
- 4 Install upper cross hole tool onto threaded portion of nose gear strut and tighten until snug.
- 5 Align lockout hole on lower cross hole tool with cotter pin installation hole on nose gear strut.
- 6 Install lockout pin.

Note: If position of lockout pin interferes with tightening handle, reinstall lockout pin on opposite side of cross hole tool.

- 7 Tighten lower cross hole tool to upper cross hole tool.

Note: Ensure drill bit passes completely through nose gear strut and not just to void from original installation hole.

- 8 Using 0.125 inch (3.2 mm) drill bit and guide hole on lower cross hole tool, drill new cotter pin installation hole through nose gear strut.
- 9 Remove lockout pin.
- 10 Loosen and remove lower cross hole tool from upper cross hole tool.
- 11 Using compressed air, remove metal chips from drilled installation hole and threaded portion of nose gear strut.
- 12 Remove upper cross hole tool from nose gear strut.
- 13 Verify distance from center of drilled installation hole to bottom of spindle cup is 0.655 ±0.020 inch (1.66 ±0.05 cm).
- 14 Install nose wheel fork assembly. ([Refer to 32-20](#))

(b) Procedure - Repair Method #2

- 1 Acquire necessary tools, equipment, and supplies.

Description	P/N or Spec.	Supplier	Purpose
Cross Hole Tool	16585-001	Cirrus Design	Drill installation hole.
Drill Bit	0.125 inch (3.2 mm)	Any Source	Drill installation hole.
Compressed Air	-	Any Source	Remove metal chips from nose gear strut.

- 2 Remove nose wheel fork assembly. ([Refer to 32-20](#))
- 3 Perform Inspection - Nose Wheel Fork Assembly. ([Refer to 32-20](#))
- 4 Position cross hole tool lower attach block onto threaded portion of nose gear strut.
- 5 Align lockout hole on lower attach block with cotter pin installation hole on nose gear strut.

- 6 Install lockout pin.
- 7 Position cross hole tool so that upper attach block rests on top of spindle cup flange and against nose gear strut.
- 8 Tighten bolts and washers securing cross hole tool to nose gear strut.

Note: Ensure drill bit passes completely through nose gear strut and not just to void from original installation hole.

- 9 Using 0.125 inch (3.2 mm) drill bit and guide hole on cross hole tool, drill new cotter pin installation hole through nose gear strut.
- 10 Remove lockout pin.
- 11 Loosen bolts and washers securing cross hole tool to nose gear strut.
- 12 Remove cross hole tool from nose gear strut.
- 13 Using compressed air, remove metal chips from drilled installation hole and threaded portion of nose gear strut.
- 14 Verify distance from center of drilled installation hole to bottom of spindle cup is 0.655 ± 0.020 inch (1.66 ± 0.05 cm).
- 15 Install nose wheel fork assembly. ([Refer to 32-20](#))

E. Spindle Cup (See Figure 32-203)

- (1) Removal - Spindle Cup
 - (a) Remove nose gear strut. (Refer to 32-20)
 - (b) Remove nose wheel fork assembly. (Refer to 32-20)
 - (c) Remove grease and other contaminates from nose gear strut weldment.
 - (d) Determine centerline of existing spindle cup with vernier caliper. Reference centerline by making a mark on nose gear strut weldment.

Note: If required, tap on spindle cup flange until it falls free from nose gear strut weldment.

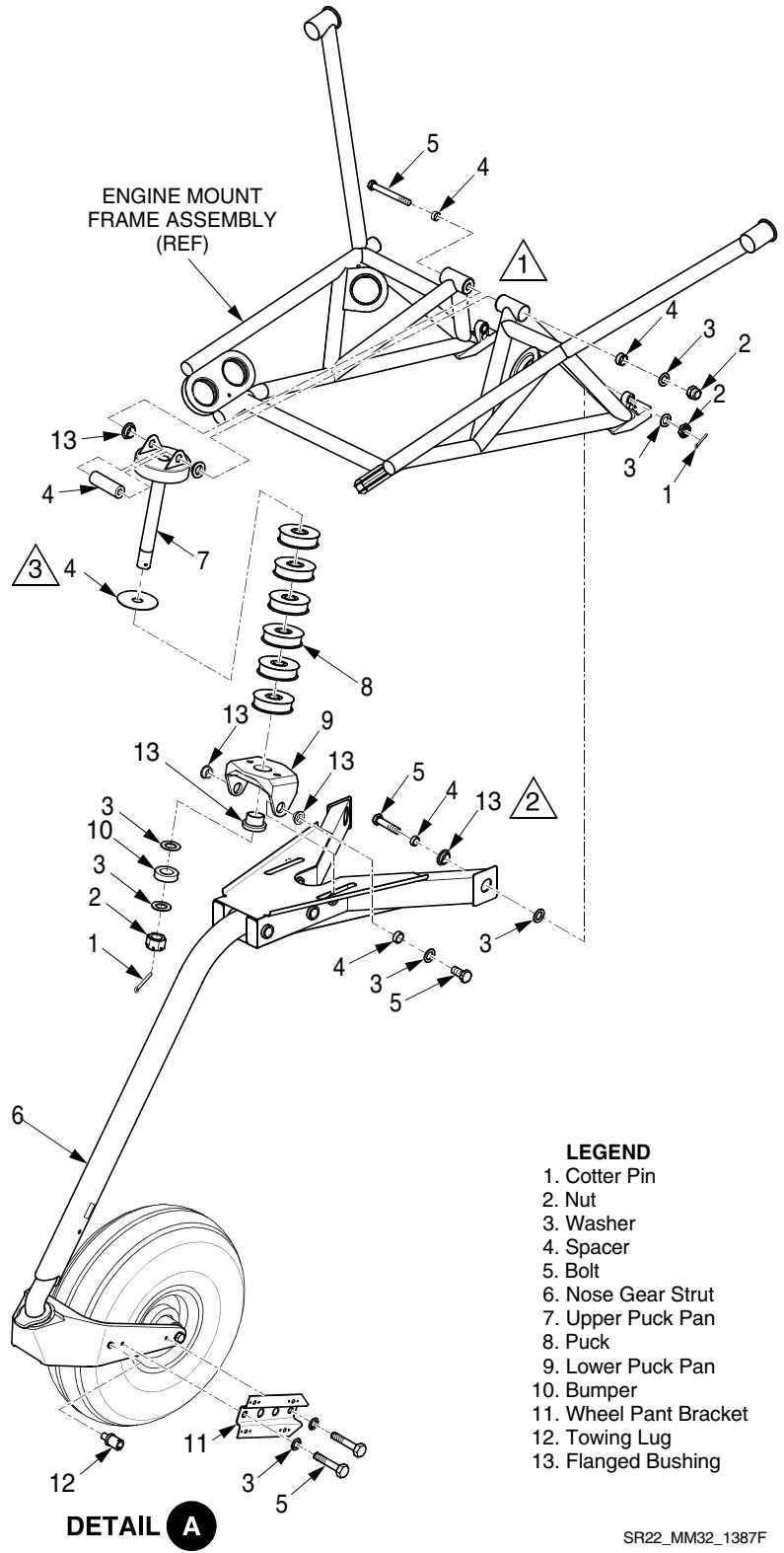
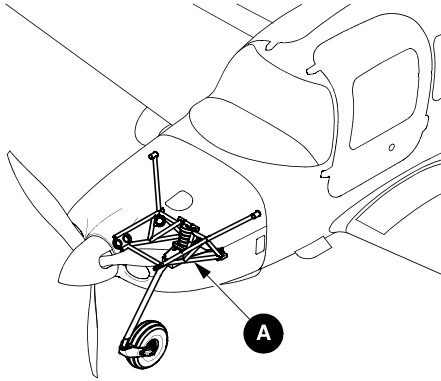
- (e) Use a heating tip and oxyacetylene torch to quickly heat entire spindle cup for approximately 30 - 45 seconds.
- (2) Installation - Spindle Cup
 - (a) Acquire necessary tools, equipment, and supplies.

Description	P/N or Spec.	Supplier	Purpose
Methyl Ethyl Ketone (MEK)	78-93-3	Any Source	Cleaning agent.
Paste Adhesive	50195-001	Cirrus Design	Bond spindle cup.

- (b) Remove remaining adhesive with 80-grit sandpaper.
- (c) Solvent clean bonding surfaces of nose gear strut weldment and new spindle cup with MEK.
- (d) Determine and mark centerline of new spindle cup with vernier caliper and indelible marker.
- (e) Mix paste adhesive thoroughly. Apply generously over entire nose gear strut weldment bond surface.

Note: Ensure reference marks are aligned and spindle cup is completely pushed onto the nose gear strut weldment.

- (f) Slide new spindle cup onto nose gear strut weldment.
- (g) Wipe off excess adhesive.
- (h) To prevent spindle cup from sliding down while adhesive is setting up, place base of old spindle cup against base of new spindle cup and temporarily secure with castellated nut.
- (i) Cure adhesive for 2.5 hours at 120 - 180 °F (49 - 82 °C).
- (j) After adhesive is cured, remove and discard old spindle cup and castellated nut.
- (k) Install nose wheel fork assembly. (Refer to 32-20)
- (l) Install nose gear strut. (Refer to 32-20)



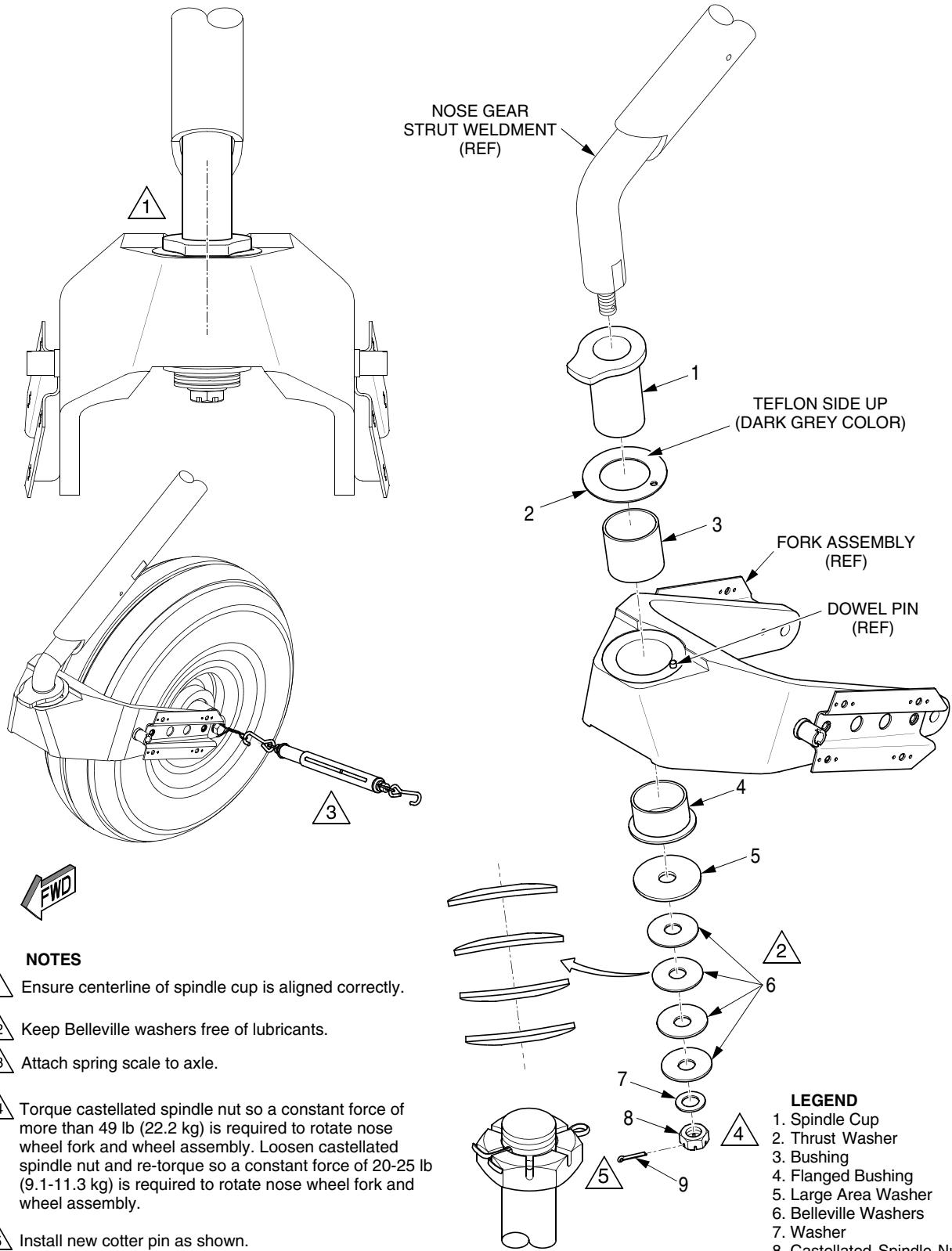
- NOTE**
- △1 Six-point mount shown.
Serials 0002 & subs w/ four-point mount:
Nose landing gear assembly installation
is identical to six-point mount.
 - △2 Serials 0002 thru 0074:
Bushings installed at outboard locations.
 - △3 Serials 0002 thru 2333, 2335 thru 2419,
2421 thru 2437:
Spacer installed on these airplanes only.

- LEGEND**
- 1. Cotter Pin
 - 2. Nut
 - 3. Washer
 - 4. Spacer
 - 5. Bolt
 - 6. Nose Gear Strut
 - 7. Upper Puck Pan
 - 8. Puck
 - 9. Lower Puck Pan
 - 10. Bumper
 - 11. Wheel Pant Bracket
 - 12. Towing Lug
 - 13. Flanged Bushing

Figure 32-202
Nose Gear Assembly

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EFFECTIVITY:
All



NOTES

- 1 Ensure centerline of spindle cup is aligned correctly.
- 2 Keep Belleville washers free of lubricants.
- 3 Attach spring scale to axle.
- 4 Torque castellated spindle nut so a constant force of more than 49 lb (22.2 kg) is required to rotate nose wheel fork and wheel assembly. Loosen castellated spindle nut and re-torque so a constant force of 20-25 lb (9.1-11.3 kg) is required to rotate nose wheel fork and wheel assembly.
- 5 Install new cotter pin as shown.

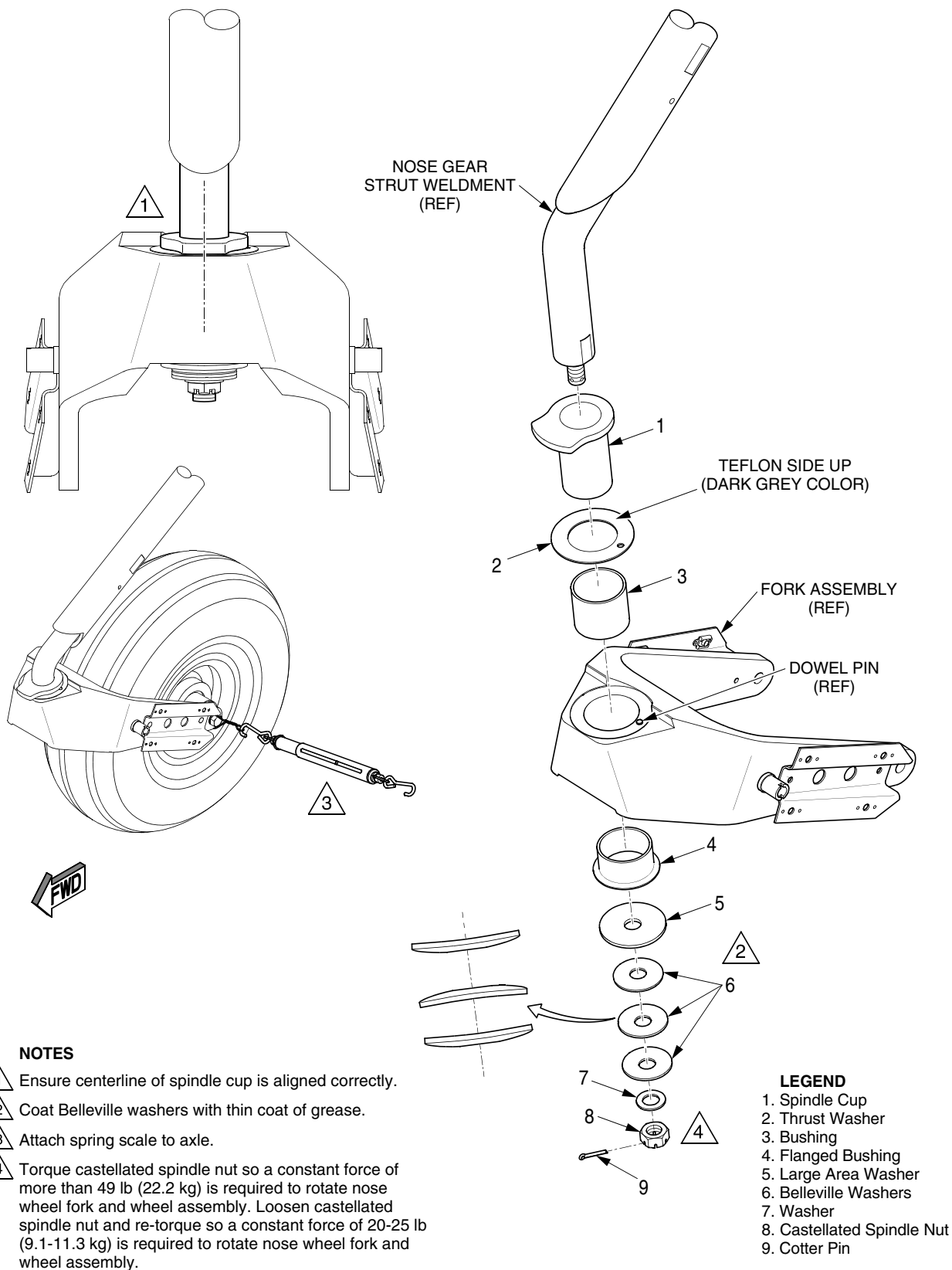
LEGEND

- 1. Spindle Cup
- 2. Thrust Washer
- 3. Bushing
- 4. Flanged Bushing
- 5. Large Area Washer
- 6. Belleville Washers
- 7. Washer
- 8. Castellated Spindle Nut
- 9. Cotter Pin

Serials 0002 thru 2333, 2335 thru 2419, 2421 thru 2437.

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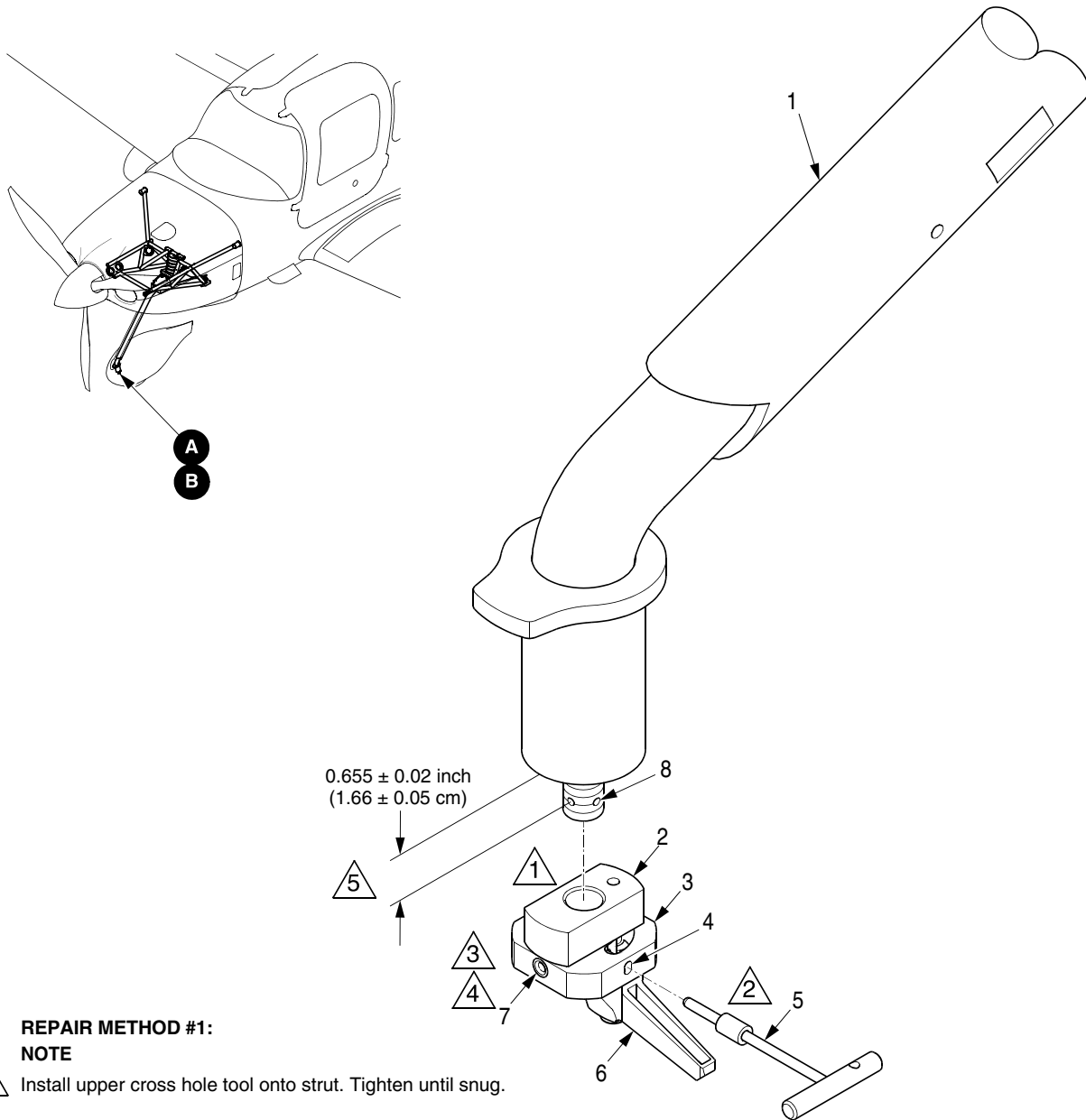
Figure 32-203
Nose Wheel Fork Assembly & Adjustment/Test - Serials 0002 thru 2437 (Sheet 1 of 2)



SR22_MM32_2459

Figure 32-203
Nose Wheel Fork Assembly & Adjustment/Test - Serials 2438 & subs (Sheet 2 of 2)

EFFECTIVITY:
 Serials 2438 & subs



REPAIR METHOD #1:

NOTE

- 1 Install upper cross hole tool onto strut. Tighten until snug.
- 2 Align lockout hole on lower cross hole tool with cotter pin installation hole on strut. Install lockout pin. Tighten lower cross hole tool to upper cross hole tool.
- 3 Using 1/8" drill bit and guide hole on lower cross hole tool, drill new cotter pin installation hole through strut.
- 4 Remove lower cross hole tool. Remove metal chips from strut. Remove upper cross hole tool from strut.
- 5 Verify distance from center of drilled installation hole to bottom of spindle cup is 0.655 +/- 0.02 inch (1.66 +/- 0.05 cm).

LEGEND

- 1. Nose Gear Strut
- 2. Upper Cross Hole Tool
- 3. Lower Cross Hole Tool
- 4. Lockout Hole
- 5. Lockout Pin
- 6. Tightening Handle
- 7. Guide Hole
- 8. Cotter Pin Installation Hole

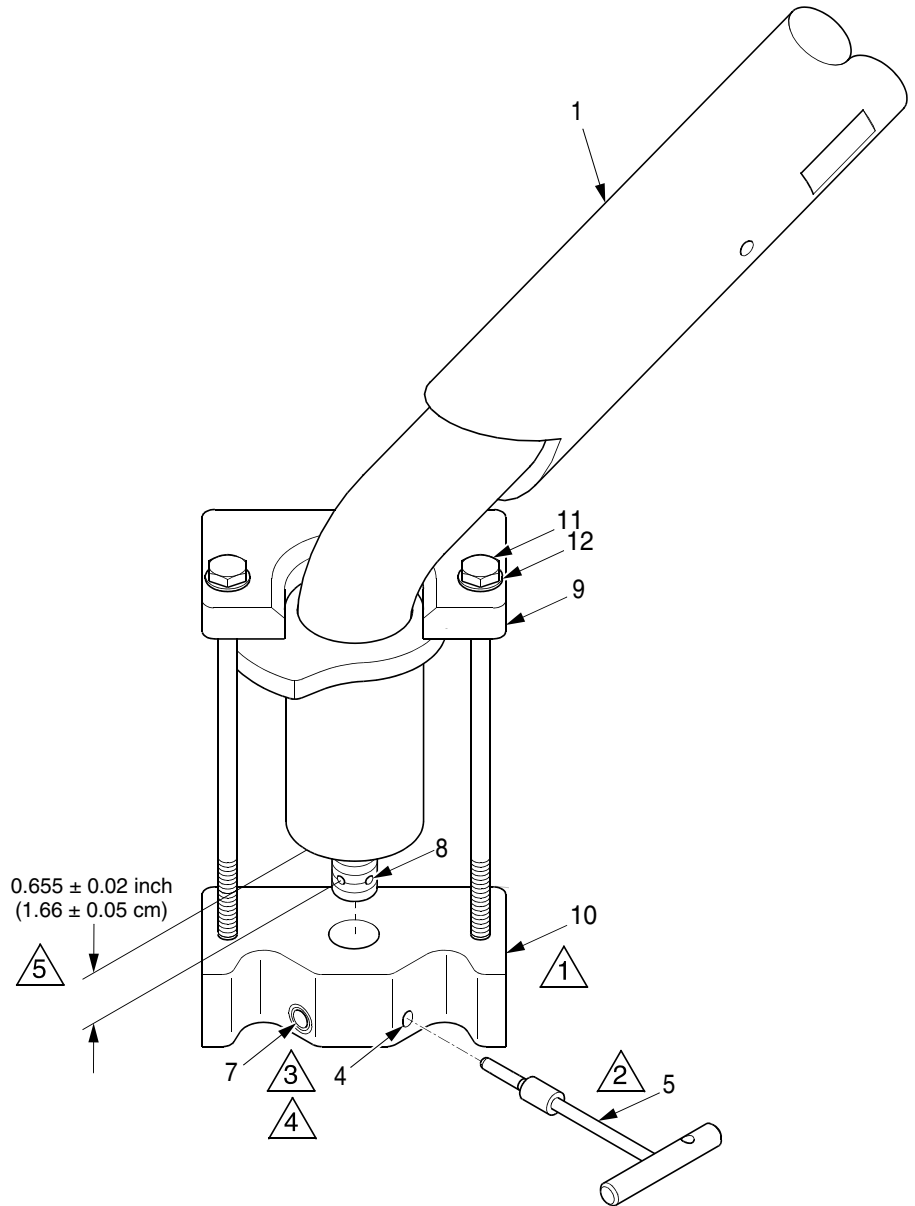
DETAIL A

Serials 0002 thru 1348.

SR22_MM32_2057A

Figure 32-204

Approved Repairs - Nose Wheel Fork Assembly - Serials 0002 thru 1348 (Sheet 1 of 2)



REPAIR METHOD #2:

NOTE

- ① Position cross hole tool onto strut.
- ② Align lockout hole on lower attach block with cotter pin installation hole on strut. Install lockout pin. Tighten bolt and washers securing cross hole tool to strut.
- ③ Using 1/8" drill bit and guide hole on lower attach block, drill new cotter pin installation hole through strut.
- ④ Remove lower cross hole tool and metal chips from strut.
- ⑤ Verify distance from center of drilled installation hole to bottom of spindle cup is 0.655 +/- 0.02 inch (1.66 +/- 0.05 cm).

LEGEND

- 1. Nose Gear Strut
- 4. Lockout Hole
- 5. Lockout Pin
- 7. Guide Hole
- 8. Cotter Pin Installation Hole
- 9. Upper Attach Block
- 10. Lower Attach Block
- 11. Bolt
- 12. Washer

DETAIL B

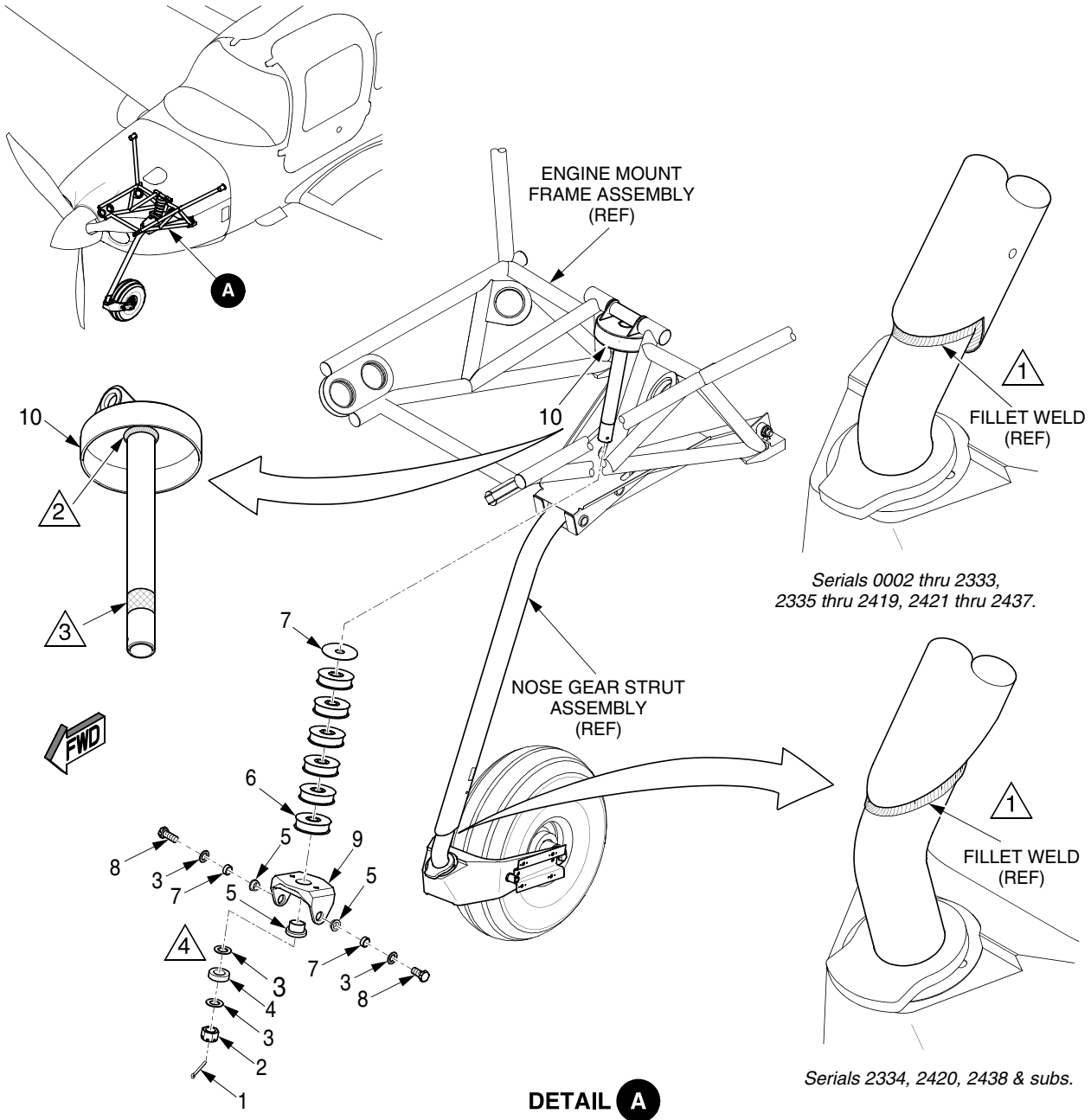
Serials 0002 thru 1348.

SR22_MM32_2136A

Figure 32-204

Approved Repairs - Nose Wheel Fork Assembly - Serials 0002 thru 1348 (Sheet 2 of 2)

EFFECTIVITY:
Serials 0002 thru 1348



- NOTE**
- 1 Using flashlight and 10X magnifier, visually inspect fillet weld for cracking, deformation, and signs of distress.
 - 2 Using flashlight and 10X magnifier, visually inspect the weld securing shaft to upper puck pan for cracking, deformation, and signs of distress.
 - 3 Inspect upper puck pan shaft for wear. If wear is found, perform the following: using vernier caliper, measure wall thickness of shaft lower end to determine baseline wall thickness. Using vernier caliper, measure wall thickness of shaft where shaft rubs against lower puck pan. If wear exceeds 50% of baseline wall thickness, the upper puck pan assembly must be replaced.
 - 4 At lower puck pan assembly, inspect flanged bushing, bumper, and attaching hardware for wear and condition.

- LEGEND**
- 1. Cotter Pin
 - 2. Nut
 - 3. Washer
 - 4. Bumper
 - 5. Flanged Bushing
 - 6. Puck
 - 7. Spacer
 - 8. Bolt
 - 9. Lower Puck Pan
 - 10. Upper Puck Pan

SR22_MM32_2150A

Figure 32-205
Inspection/Check - Nose Gear Assembly