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**Service Bulletin**

December 29, 1995

SEB95-20

**TITLE**

NOSE LANDING GEAR ACTUATOR DOWNLOCK PIN INSPECTION

**EFFECTIVITY**

<u>Model</u>	<u>Year</u>	<u>Serial Numbers</u>	
172RG	1980	172RG0001	thru 172RG0570
172RG	1981	172RG0571	thru 172RG0890
172RG		691	
172RG	1982	172RG0891	thru 172RG1099
172RG	1983	172RG1100	thru 172RG1144
172RG	1984	172RG1145	thru 172RG1177
172RG	1985	172RG1178	thru 172RG1191
R182	1978	R18200002	thru R18200583
R182/TR182	1979	R18200584	thru R18201313
R182/TR182		R18200001	
R182/TR182	1980	R18201314	
R182/TR182	1980	R18201316	thru R18201628
R182/TR182	1981	R18201629	thru R18201798
R182/TR182	1982	R18201799	thru R18201928
R182/TR182	1983	R18201929	thru R18201973
R182/TR182	1984	R18201974	thru R18201999
R182/TR182	1985	R18202000	thru R18202031
R182/TR182		R18201315	
R182/TR182	1986	R18202032	thru R18202039
210	1960	57001	thru 57575
210		618	
210A	1961	21057576	thru 21057840
210A		616	
210B	1962	21057841	thru 21058085
210C	1963	21058086	thru 21058139
210C	1963	21058141	thru 21058220
210D	1964	21058221	thru 21058510
210E	1965	21058511	thru 21058715
210F	1966	21058716	thru 21058818
210G	1967	21058819	thru 21058936
210H	1968	21058937	thru 21059061
210J	1969	21059062	thru 21059199

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To obtain satisfactory results, procedures specified in this publication must be accomplished in accordance with accepted methods and prevailing government regulations. The Cessna Aircraft Company cannot be responsible for the quality of work performed in accomplishing the requirements of this publication.

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<u>Model</u>	<u>Year</u>	<u>Serial Numbers</u>	
210K/T210K	1970	21059200	thru 21059351
210K/T210K	1971	21059352	thru 21059502
210L/T210L	1972	21059503	thru 21059719
210L/T210L	1973	21059720	thru 21060089
210L/T210L	1974	21060090	thru 21060539
210L/T210L	1975	21060540	thru 21061039
210L/T210L	1976	21061040	thru 21061041
210L/T210L	1976	21061043	thru 21061573
210M/T210M	1977	21061574	thru 21062273
210M/T210M	1978	21062274	thru 21062954
210M/T210M	1978	21061042	
210N/T210N	1979	21062955	thru 21063640
210N/T210N	1980	21063641	thru 21064135
210N/T210N	1981	21064136	thru 21064535
210N/T210N	1982	21064536	thru 21064772
210N/T210N	1983	21064773	thru 21064822
210N/T210N	1984	21064823	thru 21064897
210R/T210R	1985	21064898	thru 21064949
210R/T210R	1986	21064950	thru 21065009
T210F	1966	T210-0001	thru T210-0197
T210G	1967	T210-0198	thru T210-0307
T210H	1968	T210-0308	thru T210-0392
T210J	1969	T210-0393	thru T210-0454
T210J		21058140	
P210N	1978	P21000001	thru P21000150
P210N	1979	P21000151	thru P21000385
P210N	1980	P21000386	thru P21000590
P210N	1981	P21000591	thru P21000760
P210N	1982	P21000761	thru P21000811
P210N	1983	P21000812	thru P21000834
P210R	1985	P21000835	thru P21000866
P210R	1986	P21000867	thru P21000874
F182RG	1978	FR18200001	thru FR18200020
F182RG	1979	FR18200021	thru FR18200045
F182RG	1980	FR18200046	thru FR18200070

## PURPOSE

Reports have been received of the nose landing gear actuator downlock pins cracking and/or failing. The pins have failed at a circumferential groove that is used to secure the pin in the actuator bearing end. To assist in preventing this condition from occurring, an inspection should be accomplished to determine the security of the actuator downlock pins. Actuators with downlock pins that are found to be loose should have the pins replaced according to the criteria in this service bulletin. Failure to comply with this service bulletin can potentially result in the nose landing gear to not lock in the down position and possibly collapse.

## COMPLIANCE

### Recommended

#### A. Initial Inspection:

Should be accomplished within the next 200 hours of operation or 12 months, whichever occurs first.

#### B. Repetitive Inspections:

1. After completing the initial inspection, repeat at each gear retraction check not to exceed 200 hours of operation.
2. a. After the installation of SK210-155 (or later revision), the repetitive inspection requirement of this service bulletin is no longer required.
- b. After the installation of a replacement actuator bearing end or actuator that was shipped from Cessna Parts Distribution after January 1, 1996, the repetitive inspection requirement of this service bulletin is no longer required as these parts incorporate the modified pin installation.

## APPROVAL

FAA approval has been obtained on technical data in this publication that affects airplane type design.

For Reims Aviation airplanes: DGAC approval has been obtained on technical data in this publication that affects airplane type design.

## MAN-HOURS

Approximately 1.0 man-hour to inspect the nose landing gear actuator downlock pins.  
Approximately 10.0 man-hours to install SK210-155.

## MATERIAL

The following parts are available from Cessna Parts Distribution through an appropriate Cessna Service Station for the suggested list price shown.

<u>Part Number</u>	<u>Description</u>	<u>Qty./Airplane</u>	<u>Price</u>
SK210-155	Downlock Actuator Pin Replacement Kit	1 (If Required)	\$ 298.00 (A) ea.

ALL PRICES SUBJECT TO CHANGE WITHOUT NOTICE

## ACCOMPLISHMENT INSTRUCTIONS

Downlock Actuator Pin Inspection Accomplishment Instructions and Service Kit SK210-155, Downlock Actuator Pin Replacement instructions are attached.

## CREDIT

Not applicable.

## OWNER NOTIFICATION

On January 12, 1996, the following Owner Advisory message will be sent to applicable owners of record in SEB95-20A.

Dear Cessna Owner,

Reports have been received of the nose landing gear actuator downlock pins cracking and/or failing. The pins have failed at a circumferential groove that is used to secure the pin in the actuator bearing end. To assist in preventing this condition from occurring, an inspection should be accomplished to determine the security of the actuator downlock pins. Actuators with downlock pins that are found to be loose should have the pins replaced according to the criteria in this service bulletin. Failure to comply with this service bulletin can potentially result in the nose landing gear to not lock in the down position and possibly collapse.

Compliance is recommended:

A. Initial Inspection:

Should be accomplished within the next 200 hours of operation or 12 months, whichever occurs first.

B. Repetitive Inspections:

1. After completing the initial inspection, repeat at each gear retraction check not to exceed 200 hours of operation.
2. a. After the installation of SK210-155 (or later revision), the repetitive inspection requirement of this service bulletin is no longer required.
- b. After the installation of a replacement actuator bearing end or actuator that was shipped from Cessna Parts Distribution after January 1, 1996, the repetitive inspection requirement of this service bulletin is no longer required as these parts incorporate the modified pin installation.

Please contact a Cessna Single Engine Service Station for detailed information and accomplishment of this service bulletin on your airplane.

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# ACCOMPLISHMENT INSTRUCTIONS

Single Engine



SEB95-20

TITLE DOWNLOCK ACTUATOR PIN INSPECTION

## EFFECTIVITY

<u>Model</u>	<u>Year</u>	<u>Serial Numbers</u>		
172RG	1980	172RG0001	thru	172RG0570
172RG	1981	172RG0571	thru	172RG0890
172RG		691		
172RG	1982	172RG0891	thru	172RG1099
172RG	1983	172RG1100	thru	172RG1144
172RG	1984	172RG1145	thru	172RG1177
172RG	1985	172RG1178	thru	172RG1191
R182	1978	R18200002	thru	R18200583
R182/TR182	1979	R18200584	thru	R18201313
R182/TR182		R18200001		
R182/TR182	1980	R18201314		
R182/TR182	1980	R18201316	thru	R18201628
R182/TR182	1981	R18201629	thru	R18201798
R182/TR182	1982	R18201799	thru	R18201928
R182/TR182	1983	R18201929	thru	R18201973
R182/TR182	1984	R18201974	thru	R18201999
R182/TR182	1985	R18202000	thru	R18202031
R182/TR182		R18201315		
R182/TR182	1986	R18202032	thru	R18202039
210	1960	57001	thru	57575
210		618		
210A	1961	21057576	thru	21057840
210A		616		
210B	1962	21057841	thru	21058085
210C	1963	21058086	thru	21058139
210C	1963	21058141	thru	21058220
210D	1964	21058221	thru	21058510
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210K/T210K	1970	21059200	thru	21059351
210K/T210K	1971	21059352	thru	21059502
210L/T210L	1972	21059503	thru	21059719
210L/T210L	1973	21059720	thru	21060089
210L/T210L	1974	21060090	thru	21060539

December 29, 1995

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# ACCOMPLISHMENT INSTRUCTIONS

SEB95-20

210L/T210L	1975	21060540	thru	21061039
210L/T210L	1976	21061040	thru	21061041
210L/T210L	1976	21061043	thru	21061573
210M/T210M	1977	21061574	thru	21062273
210M/T210M	1978	21062274	thru	21062954
210M/T210M	1978	21061042		
210N/T210N	1979	21062955	thru	21063640
210N/T210N	1980	21063641	thru	21064135
210N/T210N	1981	21064136	thru	21064535
210N/T210N	1982	21064536	thru	21064772
210N/T210N	1983	21064773	thru	21064822
210N/T210N	1984	21064823	thru	21064897
210R/T210R	1985	21064898	thru	21064949
210R/T210R	1986	21064950	thru	21065009
T210F	1966	T210-0001	thru	T210-0197
T210G	1967	T210-0198	thru	T210-0307
T210H	1968	T210-0308	thru	T210-0392
T210J	1969	T210-0393	thru	T210-0454
T210J		21058140		
P210N	1978	P21000001	thru	P21000150
P210N	1979	P21000151	thru	P21000385
P210N	1980	P21000386	thru	P21000590
P210N	1981	P21000591	thru	P21000760
P210N	1982	P21000761	thru	P21000811
P210N	1983	P21000812	thru	P21000834
P210R	1985	P21000835	thru	P21000866
P210R	1986	P21000867	thru	P21000874
F182RG	1978	FR18200001	thru	FR18200020
F182RG	1979	FR18200021	thru	FR18200045
F182RG	1980	FR18200046	thru	FR18200070

## DESCRIPTION

The following procedures provide instructions to inspect the nose landing gear actuator downlock pins for looseness and wear.

## APPROVAL

FAA approval has been obtained on technical data in this publication that affects airplane type design.

For Reims Aviation airplanes: DGAC approval has been obtained on technical data in this publication that affects airplane type design.

# ACCOMPLISHMENT INSTRUCTIONS

SEB95-20

## REFERENCE

SEB95-20

## CHANGE IN WEIGHT AND BALANCE

**MODEL** ..... 172RG, R182, TR182, F182RG, 210B, 210C, 210D, 210E,  
210F, 210G, 210H, 210J, 210K, 210L, 210M, 210N, 210R,  
T210F, T210G, T210H, T210J, P210N, P210R.

**WEIGHT INCREASE** ..... No Change.

## MATERIAL INFORMATION

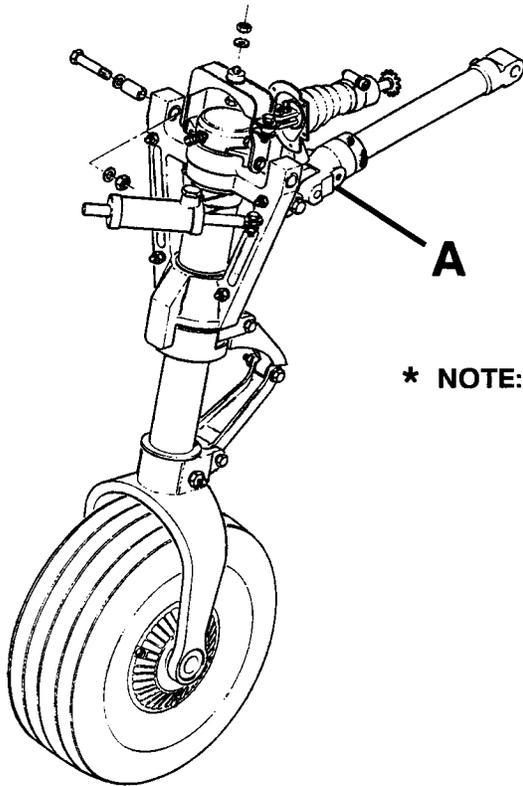
None.

## ACCOMPLISHMENT INSTRUCTIONS

1. Inspect Nose Landing Gear Actuator Pins :
  - A. Jack the airplane off the ground in accordance with the airplane service manual.
  - B. With Master Switch in the OFF position and the hydraulic pump circuit breaker disengaged, select GEAR UP on the gear handle. Turn the Master Switch to the ON position and momentarily engage hydraulic pump circuit breaker. When gear begins to retract, disengage hydraulic pump circuit breaker and place Master Switch to the OFF position.
  - C. Disconnect all electrical power from the airplane. Attach maintenance warning tags to the battery connector and external power receptacle stating:  
**WARNING: DO NOT CONNECT ELECTRICAL POWER — MAINTENANCE IN PROGRESS.**
  - D. Support nose wheel so pressure is off the actuator pins.
  - E. (Refer to Figure 1, Sheet 1, Detail A.) Visually inspect actuator pins while physically attempting to rotate and/or move actuator pins about all three axes in the bearing end. No movement is allowed, as pins are a press fit.  
**NOTE:** It is permissible to use locking-type needle nose pliers to check for actuator pin looseness/movement, provided serrated teeth are removed from pliers and no galling marks are transmitted to the actuator pins.
  - F. If any looseness or movement is observed:
    - (1) Install SK210-55 prior to further flight.
  - G. If looseness or movement is not observed, repetitive inspections of the nose gear actuator pins shall be accomplished per the compliance section of this service bulletin.
2. Make an entry in the airplane logbook stating compliance with this service bulletin and method of compliance, and if applicable, when the next inspection is due.

# ACCOMPLISHMENT INSTRUCTIONS

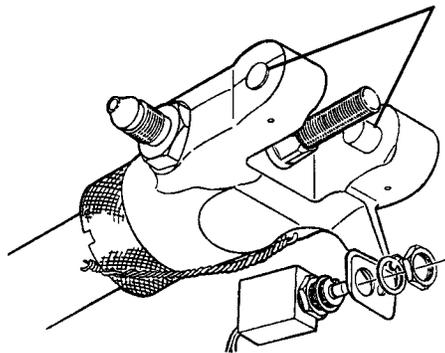
SEB95-20



\* **NOTE:** ILLUSTRATION SHOWS 182RG NOSE GEAR. ACTUATOR ATTACHES IN SIMILAR MANNER FOR ALL 172RG AND 210 MODELS.

\* NOSE LANDING GEAR

INSPECT ACTUATOR PINS FOR LOOSENESS OR MOVEMENT WHILE STILL ON AIRPLANE



**DETAIL A**

Figure 1. Downlock Actuator Pin Inspection (Sheet 1)

## TITLE DOWNLOCK ACTUATOR PIN REPLACEMENT

## EFFECTIVITY

<u>Model</u>	<u>Year</u>	<u>Serial Numbers</u>	
172RG	1980	172RG0001	thru 172RG0570
172RG	1981	172RG0571	thru 172RG0890
172RG		691	
172RG	1982	172RG0891	thru 172RG1099
172RG	1983	172RG1100	thru 172RG1144
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172RG	1985	172RG1178	thru 172RG1191
R182	1978	R18200002	thru R18200583
R182/TR182	1979	R18200584	thru R18201313
R182/TR182		R18200001	
R182/TR182	1980	R18201314	
R182/TR182	1980	R18201316	thru R18201628
R182/TR182	1981	R18201629	thru R18201798
R182/TR182	1982	R18201799	thru R18201928
R182/TR182	1983	R18201929	thru R18201973
R182/TR182	1984	R18201974	thru R18201999
R182/TR182	1985	R18202000	thru R18202031
R182/TR182		R18201315	
R182/TR182	1986	R18202032	thru R18202039
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210		618	
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210A		616	
210B	1962	21057841	thru 21058085
210C	1963	21058086	thru 21058139
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210E	1965	21058511	thru 21058715
210F	1966	21058716	thru 21058818
210G	1967	21058819	thru 21058936
210H	1968	21058937	thru 21059061
210J	1969	21059062	thru 21059199
210K/T210K	1970	21059200	thru 21059351
210K/T210K	1971	21059352	thru 21059502
210L/T210L	1972	21059503	thru 21059719
210L/T210L	1973	21059720	thru 21060089

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# SERVICE KIT

SK210-155

<u>Model</u>	<u>Year</u>	<u>Serial Numbers</u>		
210L/T210L	1974	21060090	thru	21060539
210L/T210L	1975	21060540	thru	21061039
210L/T210L	1976	21061040	thru	21061041
210L/T210L	1976	21061043	thru	21061573
210M/T210M	1977	21061574	thru	21062273
210M/T210M	1978	21062274	thru	21062954
210M/T210M	1978	21061042		
210N/T210N	1979	21062955	thru	21063640
210N/T210N	1980	21063641	thru	21064135
210N/T210N	1981	21064136	thru	21064535
210N/T210N	1982	21064536	thru	21064772
210N/T210N	1983	21064773	thru	21064822
210N/T210N	1984	21064823	thru	21064897
210R/T210R	1985	21064898	thru	21064949
210R/T210R	1986	21064950	thru	21065009
T210F	1966	T210-0001	thru	T210-0197
T210G	1967	T210-0198	thru	T210-0307
T210H	1968	T210-0308	thru	T210-0392
T210J	1969	T210-0393	thru	T210-0454
T210J		21058140		
P210N	1978	P21000001	thru	P21000150
P210N	1979	P21000151	thru	P21000385
P210N	1980	P21000386	thru	P21000590
P210N	1981	P21000591	thru	P21000760
P210N	1982	P21000761	thru	P21000811
P210N	1983	P21000812	thru	P21000834
P210R	1985	P21000835	thru	P21000866
P210R	1986	P21000867	thru	P21000874
F182RG	1978	FR18200001	thru	FR18200020
F182RG	1979	FR18200021	thru	FR18200045
F182RG	1980	FR18200046	thru	FR18200070

## DESCRIPTION

To replace the 1280209-1 pins in the nose landing gear actuator bearing end.

## APPROVAL

FAA approval has been obtained on technical data in this publication that affects airplane type design.

For Reims Aviation airplanes: DGAC approval has been obtained on technical data in this publication that affects airplane type design.

# SERVICE KIT

SK210-155

## REFERENCE

SEB95-20

## CHANGE IN WEIGHT AND BALANCE

**MODEL** ..... 172RG, R182, TR182, F182RG, 210, T210, P210

**WEIGHT INCREASE** ..... Negligible.

## MATERIAL INFORMATION

PART NUMBER	QUANTITY	DESCRIPTION
SK210-155	1	Kit, consisting of the following parts:
MS24665-134	1	Pin-Cotter
MS16562-20	2	Pin-Roll
1290009-2	2	Pin
1290009-3	1	Tool-Drill
	1	Instructions

**NOTE:** Nose gear actuator contains o-rings and packings which must be replaced during reassembly procedures. Refer to the applicable airplane Illustrated Parts Catalog for specific o-ring and packing part numbers.

## ACCOMPLISHMENT INSTRUCTIONS

1. Remove and Disassemble Nose Gear Actuator From Airplane:
  - A. Jack the airplane off the ground in accordance with the airplane service manual.
  - B. With Master Switch in the OFF position and the hydraulic pump circuit breaker disengaged, select GEAR UP on the gear handle. Turn the Master Switch to the ON position and momentarily engage hydraulic pump circuit breaker. When gear begins to retract, disengage hydraulic pump circuit breaker and place Master Switch to the OFF position.
  - C. Disconnect all electrical power from the airplane. Attach maintenance warning tags to the battery connector and external power receptacle stating:

**WARNING: DO NOT CONNECT ELECTRICAL POWER — MAINTENANCE IN PROGRESS.**
  - D. Disconnect and remove the nose landing gear actuator assembly from the nose landing gear (bearing end) and fuselage (aft attach end). Cap or plug lines and fittings. (Refer to airplane service manual.)
  - E. Disassemble the nose gear actuator to gain access to the bearing end. (Refer to airplane service manual.)
  - F. Drive out existing roll pins (one per side) securing lock pins to bearing end. Remove and discard the existing 1280209-1 lock pins from the bearing end. (Refer to airplane service manual.)

# SERVICE KIT

SK210-155

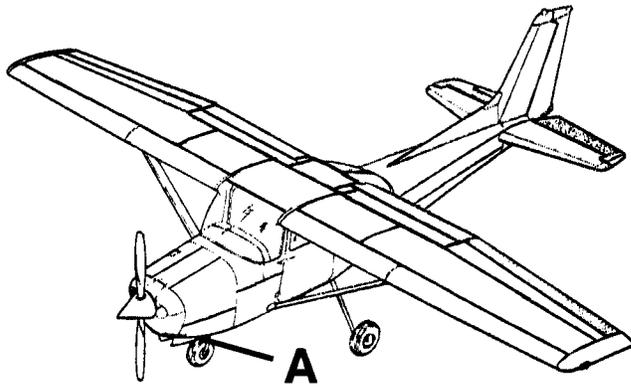
2. Inspect Bearing End For Out of Tolerance Condition:
  - A. Inspect the lock pin holes in the bearing end for excessive wear and or elongation. Measure the diameter of the holes with a micrometer. The maximum allowable hole diameter is 0.3760 inch.
  - B. If either of the holes in the bearing end are out of tolerance, replace the bearing end and proceed to Step 3.I.
  - C. If both of the holes are within tolerance, proceed to step 3.
  
3. Install The 1290009-2 Lock Pins:
  - A. Insert the 1290009-3 drill tool in pin hole on one side of bearing end. (Refer to Figure 1, Sheet 2, Detail B.)
  - B. Secure the drill tool to the bearing end by inserting a 5/64 inch rod (or equivalent sized drill bit) through drill tool into the existing roll pin hole.

**NOTE:** Drill tool contains three holes. The center hole is used to guide the drill bit when boring a new hole in the bearing end. The left and right holes are used to position the tool in the bearing end. Placement of the 5/64 inch rod in the left or right hole is dependent on which side of the bearing end is being drilled.
  - C. With drill tool in place, drill a 5/64 (0.0781 inch diameter) hole through the center line hole in the drill tool, all the way through the bearing end. Take care to drill with minimum pressure so the drill bit does not wander. (Refer to Figure 1, Sheet 2, Detail B.)
  - D. Using the alignment groove on the 1290009-3 drill tool, place a mark on the bearing end for aligning the pin.
  - E. Remove the drill tool from the bearing end.
  - F. Repeat steps 3.A. thru 3.E. on the other side of the bearing end.
  - G. Insert the new 1290009-2 pins in the bearing end. (Refer to Figure 1, Sheet 2, Detail C.) Ensure the alignment slot in the pin matches with the alignment mark on the bearing end created in step 3.D. Press the pins in so they protrude through the inside bearing surface 0.325 inch,  $\pm 0.005$  inch. This will ensure the downlock assembly does not contact the pins when the actuator is retracted.

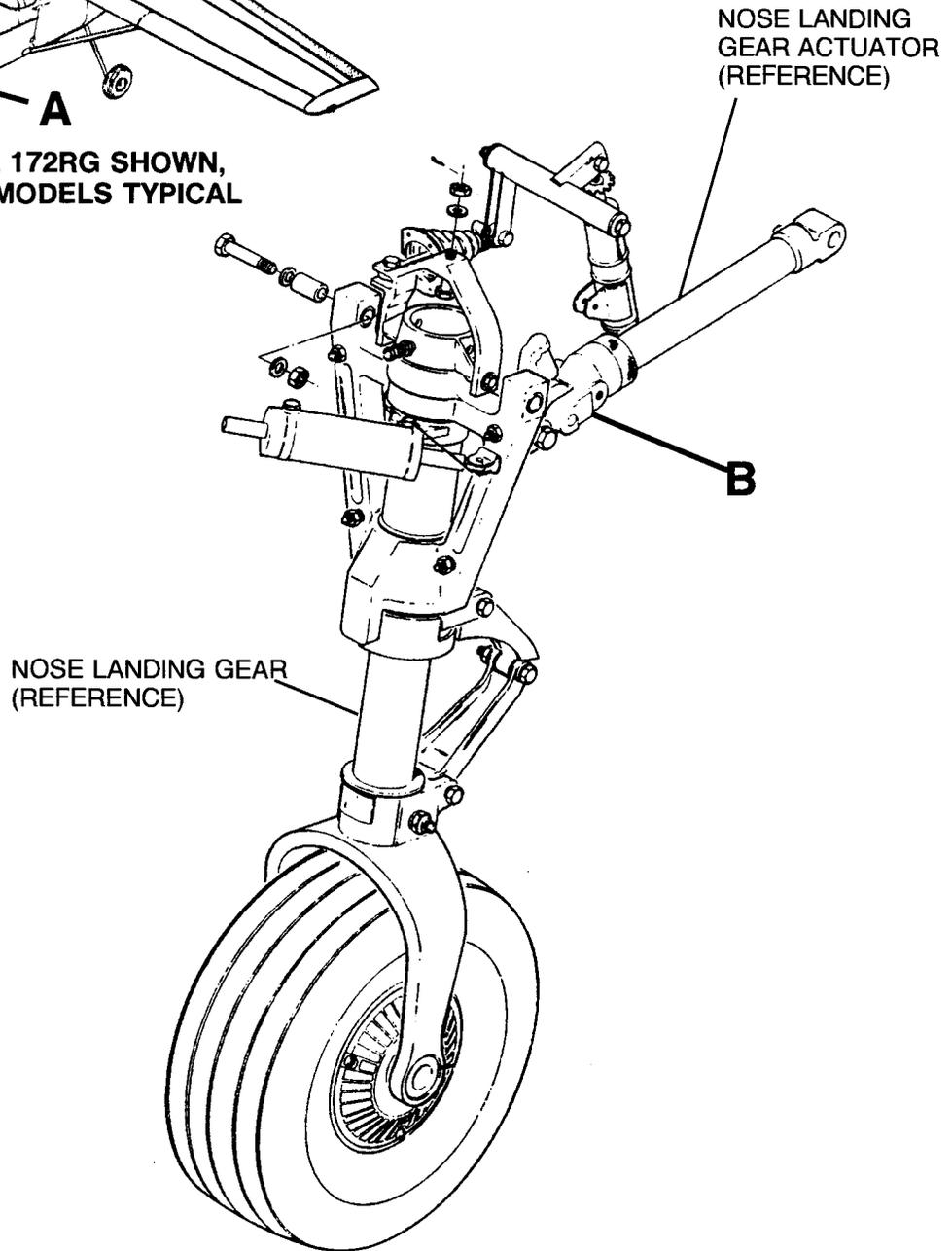
**NOTE:** The hole in the new pin is larger than the 5/64 inch hole drilled in step 3.C. This is to allow for slight misalignment of the pin with the hole. It may be necessary to heat the bearing end and/or cool the pins to fit them together, as they are nominally an interference fit.
  - H. Secure the pins with MS16562-20 roll pins inserted through the newly drilled 5/64 inch hole.
  - I. Reassemble the actuator using new o-rings. (Refer to airplane service manual.)
  - J. Reinstall the nose landing gear actuator using retained hardware and new MS24665-134 cotter pin. (Refer to airplane service manual.)
  - K. Rig the nose landing gear per the airplane service manual.
  - L. Restore electrical power and cycle the gear up and down a minimum of three times to ensure landing gear has been properly rigged.
  
4. Remove airplane from jacks and make an entry in the airplane logbook stating this service kit has been installed.

# SERVICE KIT

SK210-155



MODEL 172RG SHOWN,  
OTHER MODELS TYPICAL



DETAIL **A**

Figure 1. Downlock Actuator Pin Replacement (Sheet 1 of 2)

# SERVICE KIT

SK210-155

DRILL 5/64  
(0.0781) INCH  
DIAMETER) HOLE  
(2 REQUIRED)

MS16562-20 ROLL PIN  
(2 REQUIRED)

1280600 BEARING END  
(REFERENCE)

1290009-3 DRILL TOOL  
(1 REQUIRED)

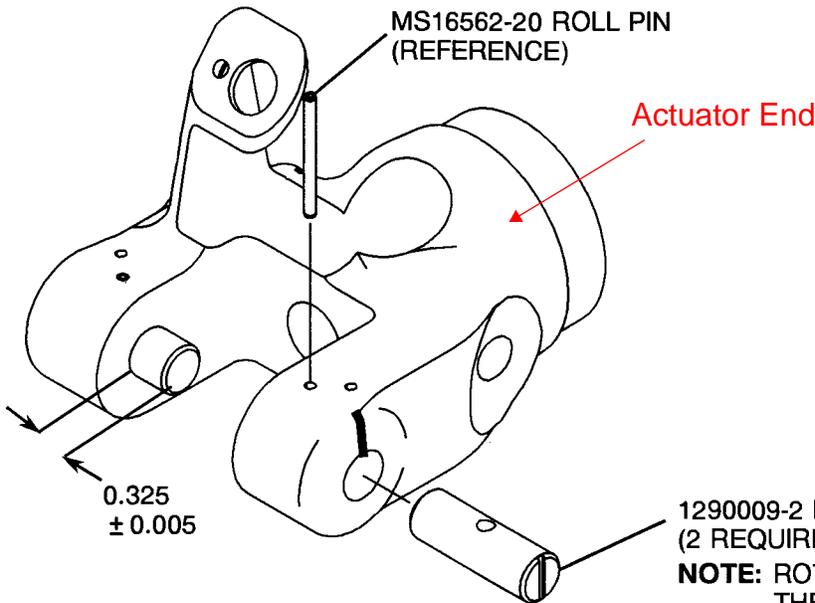
C

ALIGNMENT GROOVE  
AND INDEX MARK  
(REFERENCE)

DETAIL B

DRILL TOOL PLACED ON BEARING END

Can borrow drill tool  
save cost of SK210-155  
Service Kit



DETAIL C

NEW HOLE DRILLED, DRILL TOOL REMOVED

**NOTE:** ROTATIONAL TOLERANCE TO  
THE ALIGNMENT MARK IS  
APPROXIMATELY  $\pm 5^\circ$ . IT MAY  
BE NECESSARY TO HEAT  
THE BEARING END AND/OR  
COOL THE PINS TO FIT  
THEM TOGETHER AS  
THEY ARE NOMINALLY  
AN INTERFERENCE FIT.

Figure 1. Downlock Actuator Pin Replacement (Sheet 2)