

# SERVICE

SK175-9D  
FEBRUARY 17, 1978



**Title** REPLACEMENT OF NOSE WHEEL FORK



MODELS AFFECTED

172  
F172  
FP172  
FR172  
P172  
R172 (T41C)  
  
R172J  
R172  
.175  
182

SERIALS AFFECTED

17247747 & on  
F172-0001 & on  
FP172-0001 thru FP172-0003  
FR172-0001 & on  
P17257120 thru P17257188  
R172-0257 thru R172-0301  
R172-0426 thru R172-0432  
P17257189  
R1722000 & on  
56239 thru 17557119  
18253008 thru 18253598

CHANGE IN WEIGHT AND BALANCE: NEGLIGIBLE

PARTS LIST:

QUANTITY	PART NUMBER	NOMENCLATURE
1	0543043-4	Fork - Nose Wheel
1	AN5-33A	Bolt
1	MS21042L5	Nut
1	NAS75-5-231	Spacer
1		Installation Instructions

1. DESCRIPTION OF INSTALLATION.

a. Installation of this kit consists of:

- 1) Replacing the existing nose wheel fork with a new fork.

2. INSTALLATION INSTRUCTIONS.

a. (Refer to figure 1.) Replace the nose wheel fork as follows:

- (1) Weight the tail down to raise the nose of the airplane.
- (2) Remove the nose wheel and the speed fairing.
- (3) Deflate the nose gear strut and remove the air valve.

**WARNING**

Always deflate the nose gear strut before disconnecting the torque links.

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- (4) Disconnect lower torque link (17) from fork (13).
- (5) Remove lock ring (7) from the groove inside the lower end of upper strut (4).
- (6) Use a straight sharp pull to separate the upper and lower struts. Some hydraulic fluid will escape when they are separated, invert the lower strut and drain.
- (7) Remove lock ring (3) and bearing (2) from the upper end of the lower strut.
- (8) Slide packing support ring (1), scraper ring (5), retainer ring (6) and lock ring (7) from the lower strut, noting which is the top side of each ring.
- (9) Using the top of the existing nose wheel fork as a guide, and with a soft lead pencil, mark a line around the inner barrel, to be used as a guide when installing the new fork on the inner barrel.
- (10) Remove nut (11) and bolt (14) attaching fork (13) and metering pin and base plug (12) to the inner barrel, remove the pin and base plug.
- (11) Remove the existing fork from the barrel.
- (12) Using a micrometer, determine the outside diameter of the lower end of the inner barrel. Check several places to determine if inner barrel is out of round.

## NOTE

Replace inner barrel if out of round exceeds .0020.

- (13) Ream fork (13) to press fit with .0005 to .0025 interference.
- (14) Rotate inner barrel 90° from its original position, with the original holes fore and aft.
- (15) Press fork on inner barrel so that the top of the fork aligns with the pencil line previously scribed on the inner barrel.
- (16) With the fork properly positioned, drill pilot holes (2, figure 2) on either side of the barrel using the holes in the fork as a guide.

## NOTE

The newly drilled holes will be located 1/4" above the holes used with the old style wheel fork. On aircraft serials referenced in paragraph 25 (d) the new holes will be at the same height.

- (17) Scribe a line around the base plug 1/4" above the original mounting holes. (See detail "A," figure 1.)

## NOTE

If aircraft had redesigned fork originally installed (ref. paragraph 25 (d)), omit steps 17 and 18, and reinstall base plug, using original holes.

- (18) Install metering pin and base plug (12) by aligning the scribed line on the base plug with the holes in the fork and barrel. Drill 7/16" holes through base plug.

## NOTE

When assembling the nose gear, be sure the parts to be assembled are clean and properly lubricated with the proper hydraulic fluid.

- (19) Secure fork to barrel and base plug with bushing (18), bolt (14) and nut (11).

## NOTE

If wheel fairings are to be installed, omit step (19).

- (20) In the order mentioned, slide the following parts (with the proper side up) over the top of the inner barrel; lock ring (7), retainer ring (6), scraper ring (5) and packing support ring (1). Be sure the packing support ring is still assembled.
- (21) Slide bearing (2) over the upper end of the inner barrel, then install lock ring (3) at the upper end of the inner barrel.

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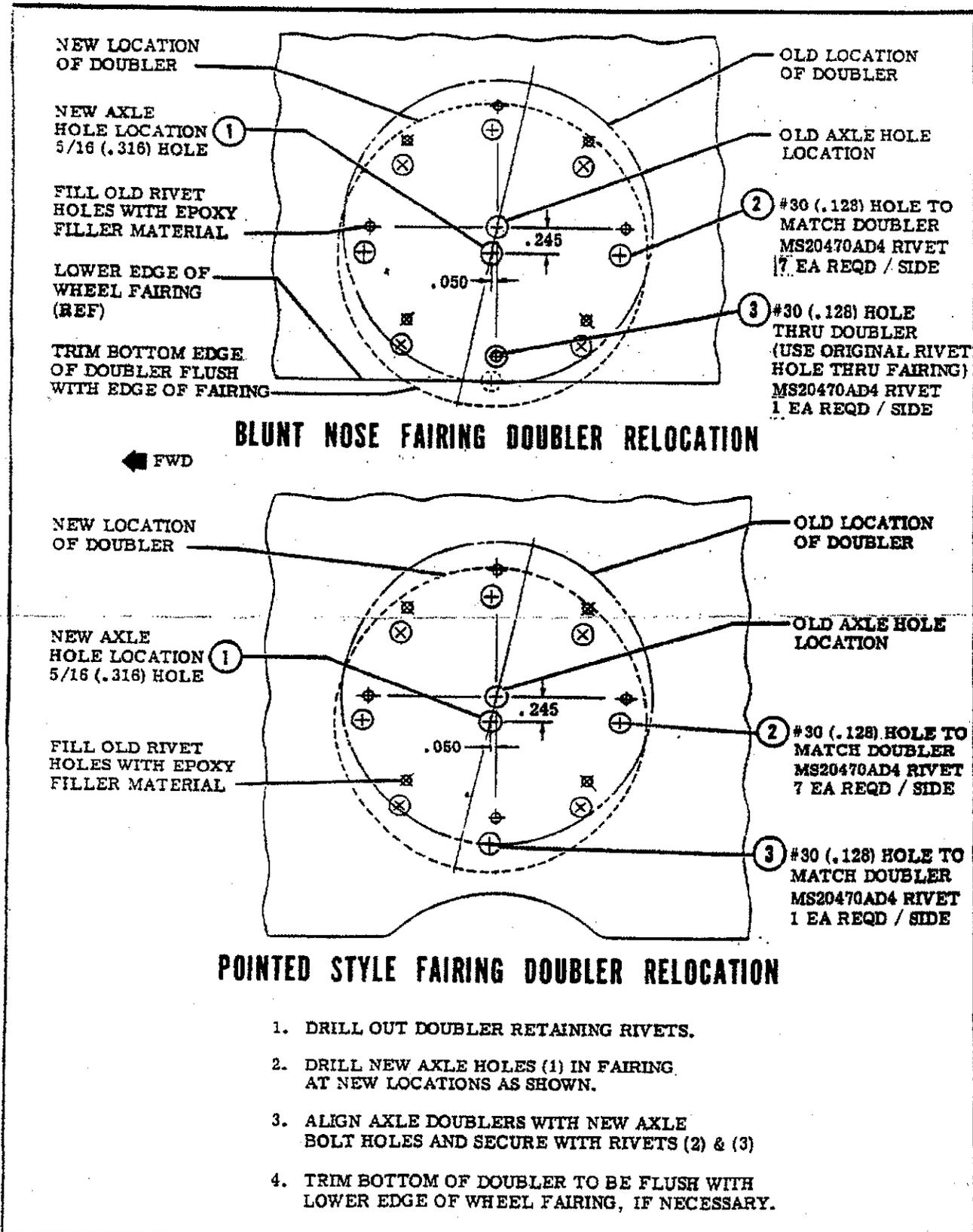


Figure 3: Fairing Axle Hole Location

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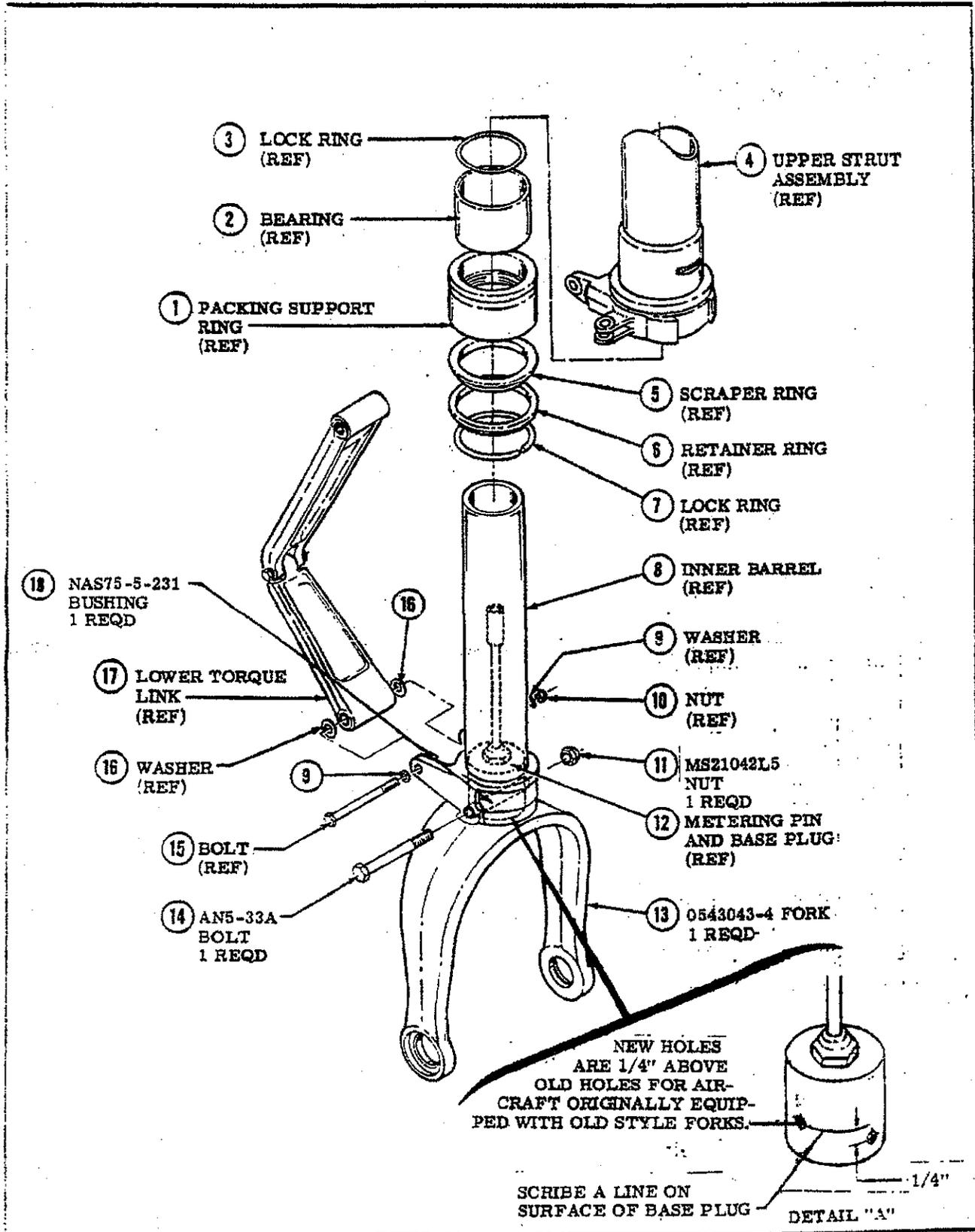


Figure 1. Nose Wheel Lower Strut and Component Parts

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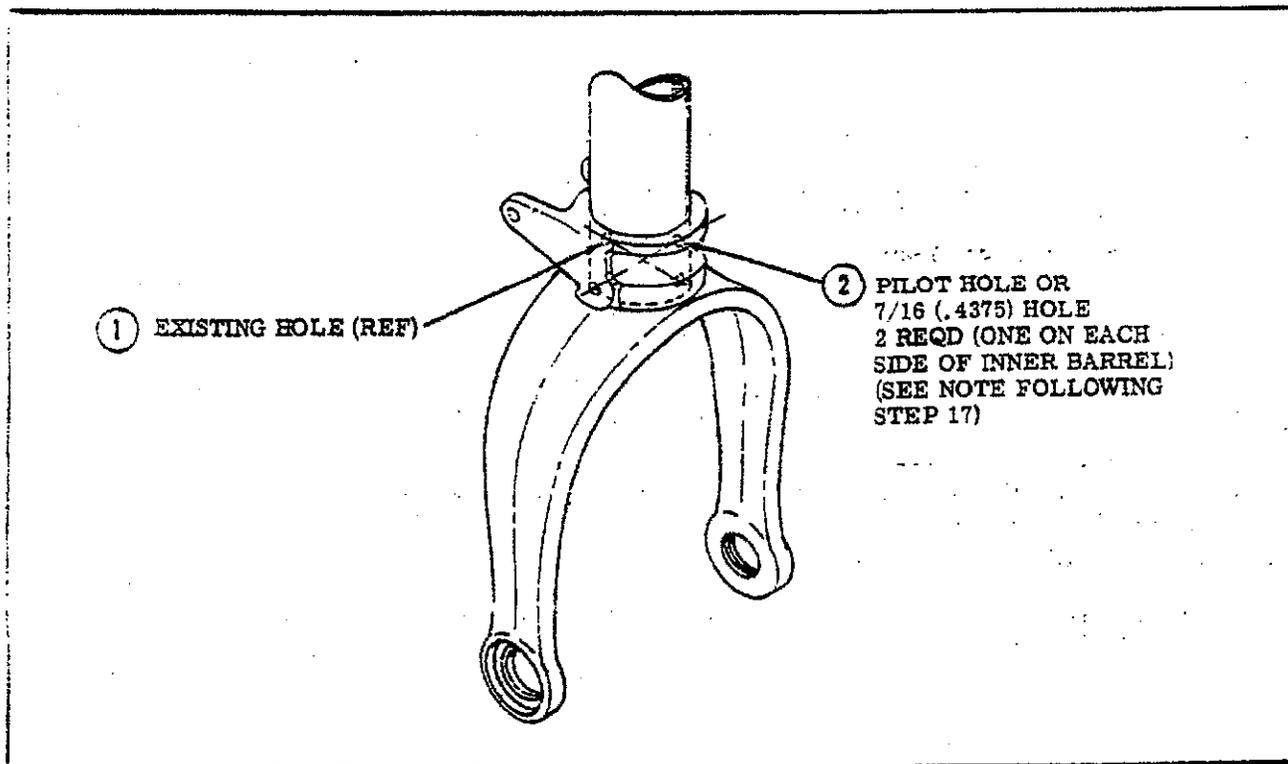


Figure 2. New Hole Locations on Inner Barrel

- (22) Using care not to damage seals, insert the lower strut into upper strut (4), slide loose parts up inside the upper strut and secure with lock ring (7). Be sure that lock ring seats in the groove inside the lower end of the upper strut.
- (23) Attach lower torque link (17) to fork (13) with bolt (15), washers (9 and 16) and nut (10).
- (24) Install the nose wheel.

## NOTE

Omit step (24) if wheel fairing is to be installed.

- (25) If aircraft is equipped with wheel fairings, install nose wheel fairing and wheel together.

## NOTE

The redesigned nose gear fork is wider at the neck than the old style fork. Therefore, a new nose wheel fairing, with wider spaced mounting flanges, must be installed when converting to the redesigned fork.

## (a) Serials:

172 ----- 17247747 thru 17248734  
 175 ----- 56239 thru 17557002  
 182 ----- 18253008 thru 18253598

When converting to the redesigned fork on aircraft equipped with a nose wheel fairing having narrow-spaced mounting flanges (2.62 inches between flanges), the following new nose wheel fairing parts are also required:

0742410-25 Nose Wheel Fairing (Blunt Nose Type)  
 0743015-1 Cover Assembly  
 AN5-51A Bolt (Used with tow bar spacers)

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## (b) Serials:

172 ----- 17248735 thru 17249544

175 ----- 17557003 thru 17557119

When converting to the redesigned fork on aircraft equipped with a nose wheel fairing having narrow-spaced mounting flanges (2.26 inches between flanges), the following new parts are also required:

0743609-17 Nose Wheel Fairing (Pointed Nose Style)

1243616-1 Cover Assembly

AN5-51A Bolt (Used with tow bar spacers)

## (c) If aircraft is already equipped with wheel fairings having 3.00 inch dimension between mounting ears, the wheel fairing can be reused by reworking the axle mounting holes in accordance with figure 3.

(d) Serials: 172 ----- 17249545 & on                      F172 ----- F172-0001 & on  
P172 ----- P17257120 thru P17257188    FP172 ----- FP172-0001 thru FP172-0003  
R172 ----- R1722000 & on                      R172J ----- P17257189

These aircraft had redesigned forks installed at time of manufacture and no modification of wheel fairing is necessary.

Install nose wheel fairing and nose wheel.

- (26) Remove the weight from the tail and lower the nose of the airplane.
- (27) Fill the shock strut to the bottom of the air valve installation hole with the proper hydraulic fluid, then install the air valve.
- (28) Raise the nose of the airplane to remove all weight from the nose gear, inflate the shock strut to the correct operating pressure, then lower the nose of the airplane.