



Piper Aircraft, Inc.
2926 Piper Drive
Vero Beach, FL, U.S.A. 32960

SERVICE NO. 1350 BULLETIN

PIPER CONSIDERS COMPLIANCE MANDATORY

Date: December 17, 2020

(S)

SUBJECT:

**NOSE LANDING GEAR STEERING HORN AND ARM
ASSEMBLIES INSPECTION**

MODELS AFFECTED:

PA-46-350P M350
PA-46-500TP M500
PA-46-600TP M600

SERIAL NUMBERS AFFECTED:

4636759 through 4636761
4697668 through 4697671
4698100 through 4698135

COMPLIANCE TIME:

To coincide with the next regularly scheduled maintenance event, but not to exceed the next 50 hours time in service.

APPROVAL:

The engineering aspects of this service document have been shown to comply with the applicable Federal Aviation Regulations and are FAA approved.

PURPOSE:

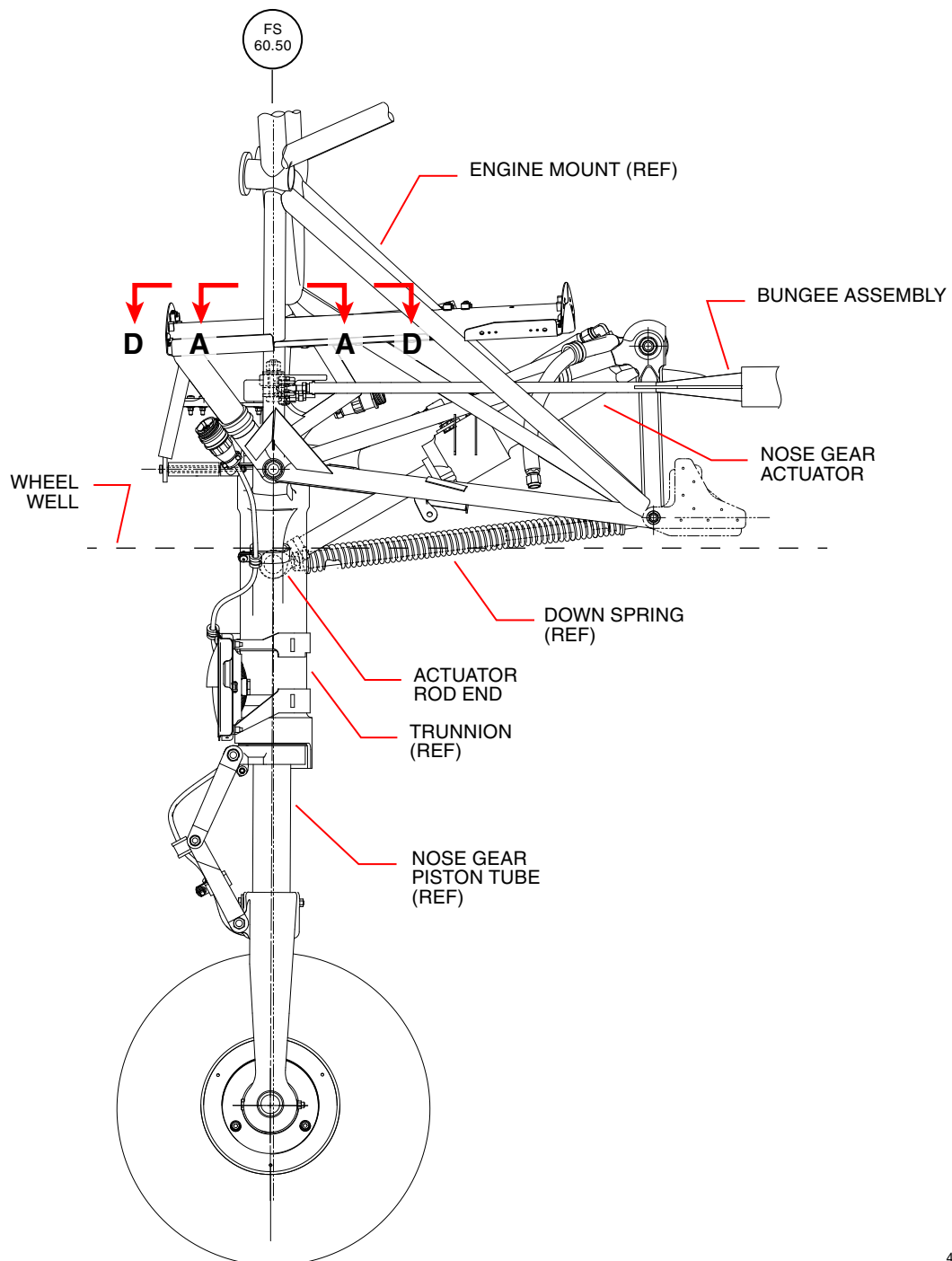
The steering pads, which are components welded onto the nose wheel steering horn assembly, may be protruding beyond the steering horn rollers on the affected airplanes. This may result in the steering pads making improper contact with the nose wheel steering arm assembly. Left uncorrected, this condition may cause damage to the steering arm assembly.

This service bulletin mandates the following steps to address the issues described:

1. Inspect the steering horn assembly to determine if the steering pads are protruding beyond the steering horn rollers, as described above.
2. Inspect the steering arm assembly for damage due to improper contact with the steering pads.
3. If the steering pads are protruding as described above, then replace the steering horn assembly with a new, improved replacement assembly comprised of the steering horn, pads and rollers.
4. If required, based upon inspection, repair or replace the steering arm assembly.

INSTRUCTIONS:

CAUTION: REPAIR TO LANDING GEAR COMPONENTS IS LIMITED TO THE RECONDITIONING OF PARTS (REPLACING BEARINGS AND BUSHINGS), SMOOTHING OUT MINOR NICKS AND SCRATCHES, AND REPAINTING AREAS WHERE PAINT HAS CHIPPED OR PEELED. FOR GREATER DAMAGE, THE REPLACEMENT OF THE AFFECTED COMPONENTS IS REQUIRED.



46N32A000 C

Figure 1 – Sheet 1 of 5
Nose Wheel Steering Assemblies – Typical

1. Gain access to the location of the Nose Wheel Steering Horn Assembly, Piper part number (P/N) 85154-012, and Nose Wheel Steering Arm Assembly, Piper P/N 83626-004. These assemblies are installed above the gear trunnion assembly, just inside the nose landing gear wheel well. Refer to Figure 1.
2. Remove the steering horn from the aircraft. See View A–A and Detail B.

NOTE: Prior to removal, verify if Steering Horn and Roller Assembly, P/N 46N32A009-001, is installed. If so, then there is no need to replace the part. Proceed to Step 5.

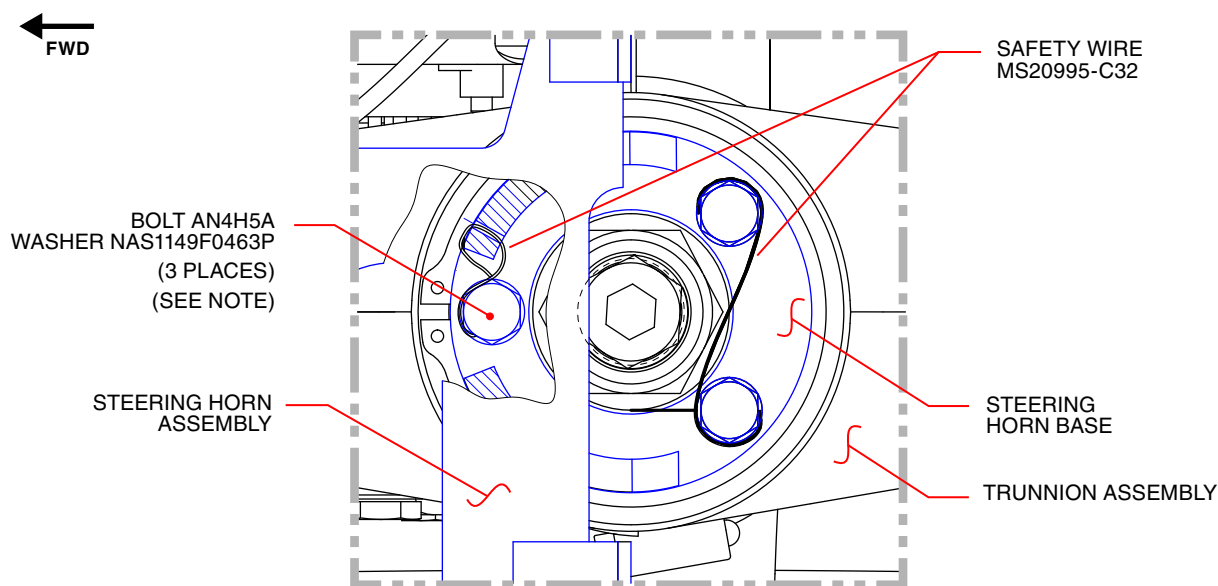
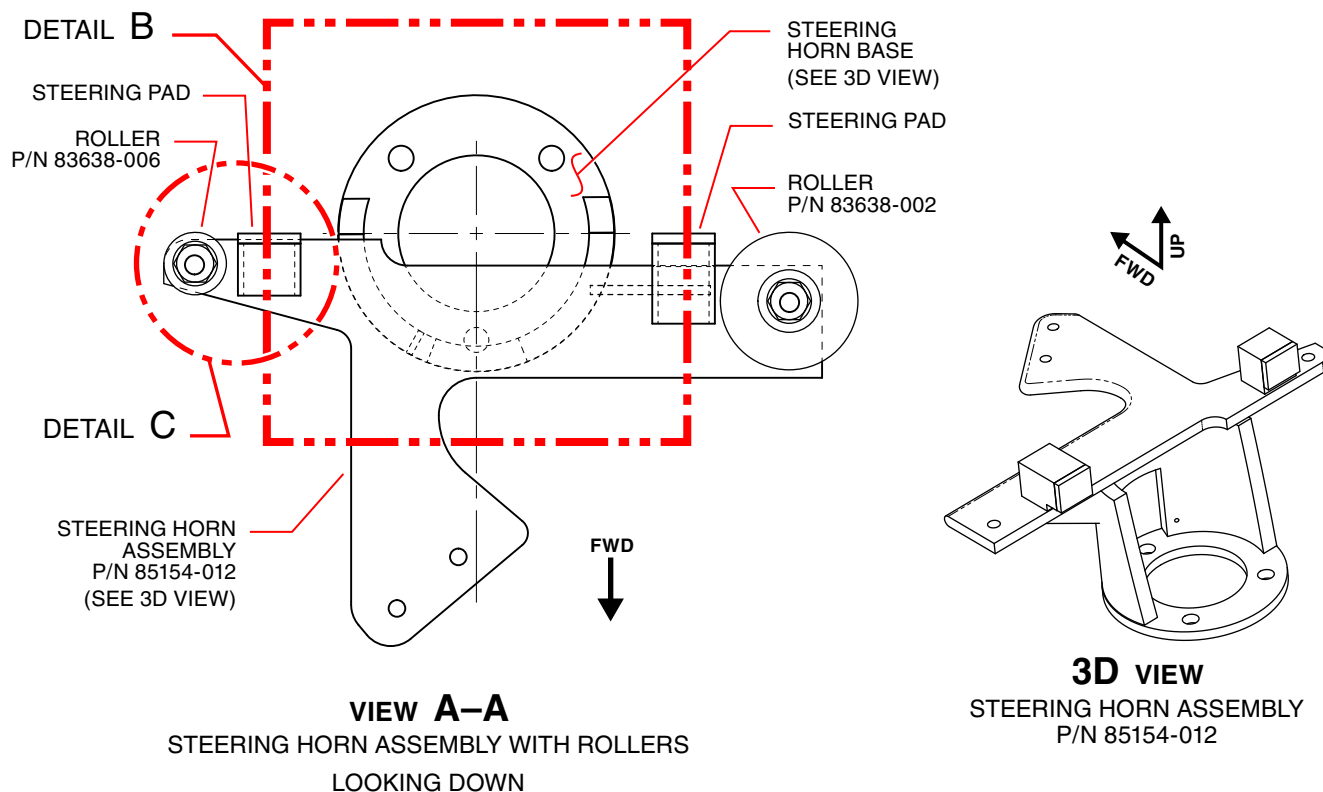
- a. Remove and discard the safety wire retaining the three bolts that attach the steering horn base to the trunnion.
 - b. Loosen and remove the three Bolts AN4H5A and Washers NAS1149F0463P. Retain the hardware for reinstallation; replace any hardware, depending on condition.
 - c. Remove the Nose Wheel Steering Horn Assembly, P/N 85154-012. Do not remove the two Rollers, P/N 83638-002 and P/N 83638-006, from the assembly.
3. Visually inspect the steering horn pads and rollers for any signs of damage.
 - If there is any damage, other than minor nicks or other minor wear, then the steering horn assembly must be replaced, which will be accomplished in an upcoming step. Proceed to Step 5.
 - If there is no visually apparent damage, then proceed to Step 4.
 4. Check if the steering pads and rollers are positioned correctly on the steering horn as shown in Detail C. Place the steering horn onto a flat surface, with the rollers facing the surface. Use a feeler gauge, or a shop aid of appropriate thickness, to determine if the parts are positioned as depicted in Detail C.

NOTE: Detail C provides the correct positioning of the rollers and pads on both the existing and replacement steering horn.

- If the steering pads and rollers are not positioned as Detail C shows, then the parts must be replaced, which will be accomplished in an upcoming step. Proceed to Step 5.
 - If the steering pads and rollers are positioned as Detail C shows, then it may not be necessary to replace the steering horn assembly and rollers. Proceed to Step 5.
5. Inspect the Arm Assembly, P/N 83626-004, for any signs of damage, especially in the areas where the steering pads make contact.

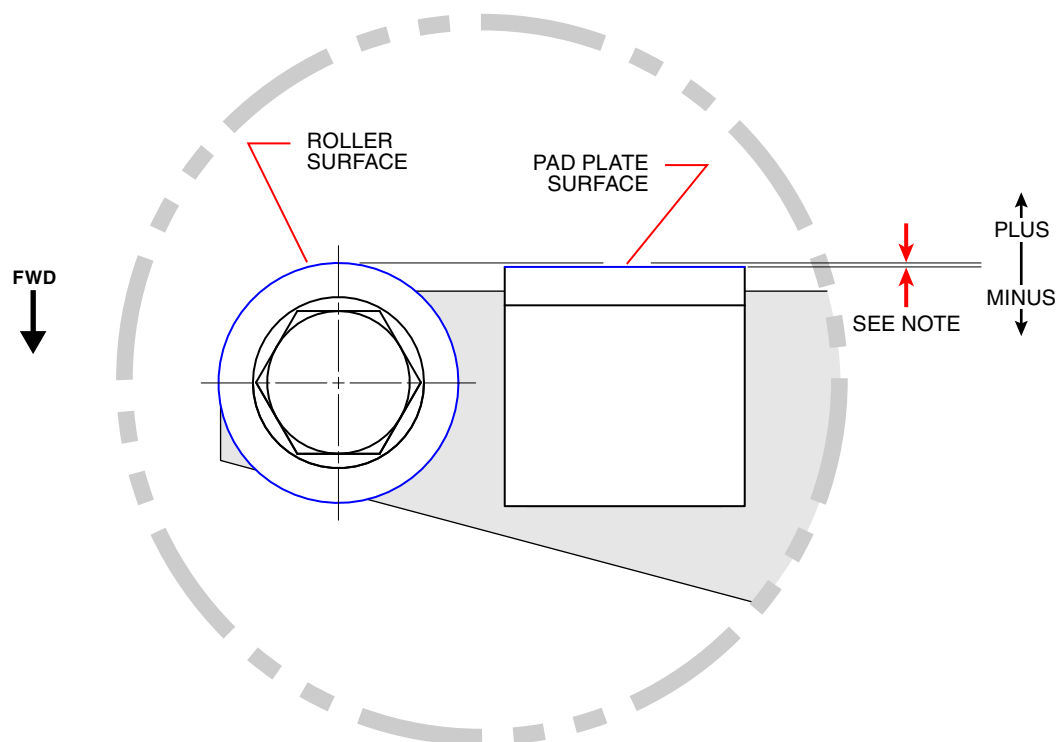
NOTE: This inspection further verifies whether or not the steering pads and rollers, as well as the steering arm, are positioned and installed properly. Existence of the described damage to the arm assembly would indicate that the steering horn pads are improperly contacting the arm, which means the steering horn assembly, and potentially the steering arm assembly, must be replaced.

- If there is any damage at all to the steering arm assembly, then proceed to Step 6.
 - If there is no damage to the steering arm assembly, then proceed to Step 7.
6. Assess the level of damage to the Arm Assembly, P/N 83626-004, discovered during the inspection in Step 5.
 - Repair of the arm assembly is limited to minor damage, such as minor nicks or scratches, chipped or peeled paint, or replacement of the bearing. If minor repairs are possible, then once they are completed, proceed to Step 7, to reinstall or replace the steering horn assembly.
 - More significant damage to the arm assembly requires the replacement of the arm assembly. Proceed to Step 7, to replace the steering horn assembly (Step 7.a.) and the arm assembly (Step 7.c.).



NOTE: Torque Bolts AN4H5A to 25–30 in-lb.

DETAIL B
STEERING HORN BASE (TYPICAL)
(VIEW ROTATED 90 DEGREES CW)



NOTE: The surface of both rollers must be positioned between plus 0.020 in. maximum and minus 0.001 in. maximum distance from the surface of both steering pad plates. The acceptable distance is applicable to both sides at the same time.

DETAIL C

CORRECT ROLLER AND PAD POSITIONING
(TYPICAL OF BOTH ENDS OF HORN AND ALL HORN ASSEMBLIES)

Figure 1 – Sheet 3 of 5
Nose Wheel Steering Assemblies – Typical

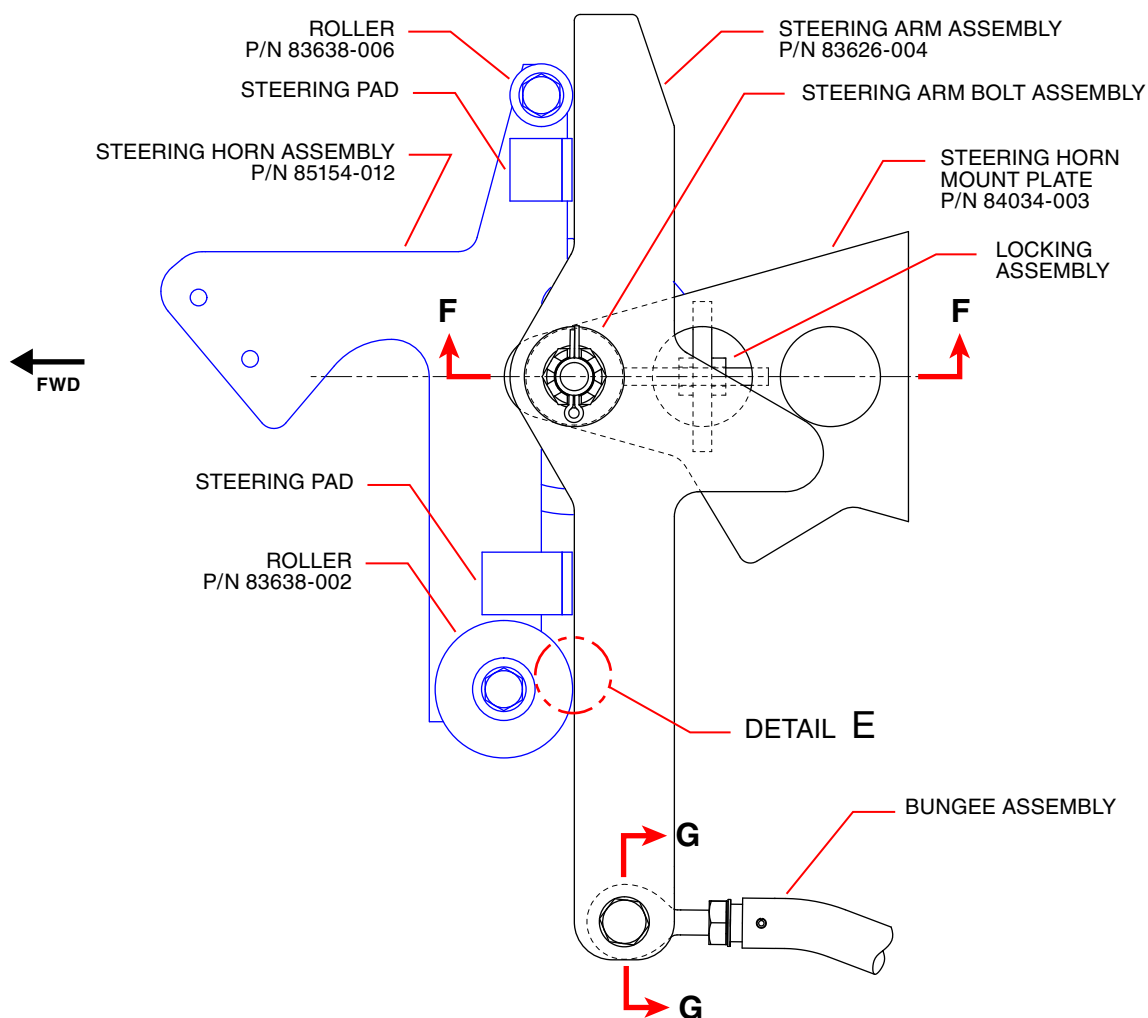
7. Replacement and Reinstallation of Parts

Complete any of the following steps that apply, based on the results of the inspections completed in previous steps:

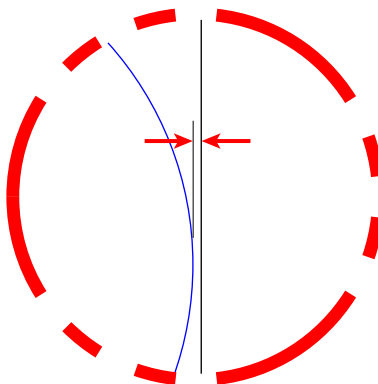
- a. Replace the steering horn assembly and rollers with the new, improved assembly.

NOTE: If the existing steering horn assembly and rollers are going to be reinstalled, then skip to Step b.

- 1) Order one (1) Nose Wheel Steering Horn and Roller Assembly, P/N 46N32A009-801, which is shown in Figure 2. This new, improved assembly replaces, as one assembly, the existing steering horn assembly (which includes the steering pads) and steering horn rollers.
 - 2) Install P/N 46N32A009-801 onto the trunnion assembly, as shown in in Detail B. Torque the bolts per the note in Detail B. Safety wire the bolts with P/N 151-296 (MS20995-C32).
- b. Reinstall the existing steering horn assembly and rollers (if applicable).
- 1) Place the steering horn base (with rollers installed) back onto the top of the trunnion assembly, as shown in Detail B.
 - 2) Install the hardware retained in Step 2, and torque the bolts per the note in Detail B. Safety wire the bolts with P/N 151-296 (MS20995-C32).
- c. Replace the steering arm assembly, if required.
- 1) Order one (1) of each:
 - Steering Arm Assembly, Piper P/N 83626-004
 - Cotter Pin, P/N 424-052 (MS24665-134) (for the bungee attachment, all models)
 - Cotter Pin, P/N 424-059 (MS24665-283) (for the M600 only)
 - 2) Remove the existing arm assembly:
 - a) Disconnect the forward end of the steering bungee from the left hand side of the steering arm, shown in View D–D. Retain the hardware for reinstallation (see View G–G), except for the cotter pin, which is to be discarded; replace any hardware, depending on condition.
 - b) From the bolt assembly common to the steering arm and the mount plate, shown in View F–F, remove the cotter pin, nut and washer that fasten the steering arm to the mount plate. Discard the cotter pin and retain the other hardware; replace any hardware, depending on condition.
 - c) Lift the steering arm assembly off of the bolt.
 - 3) Install the new, replacement Steering Arm Assembly, P/N 83626-004:
 - a) Position the replacement steering arm assembly on the bolt (AN6-15 for M600, or AN6-14A for M350 and M500). Ensure that the bolt hardware stack-up is exactly as defined, for the appropriate model, in View F–F. Replace any hardware on condition.
 - b) Torque the nut (MS17825-6 for M600, or MS21042-6 for M350 and M500), per the note in View F–F.
 - c) On the M600 only, install a new Cotter Pin, P/N 424-059 (MS24665-283).

**VIEW D-D**

FACTORY INSTALLED STEERING HORN ASSEMBLY (P/N 85154-012)
AND STEERING ARM ASSEMBLY (P/N 83626-004)
LOOKING DOWN

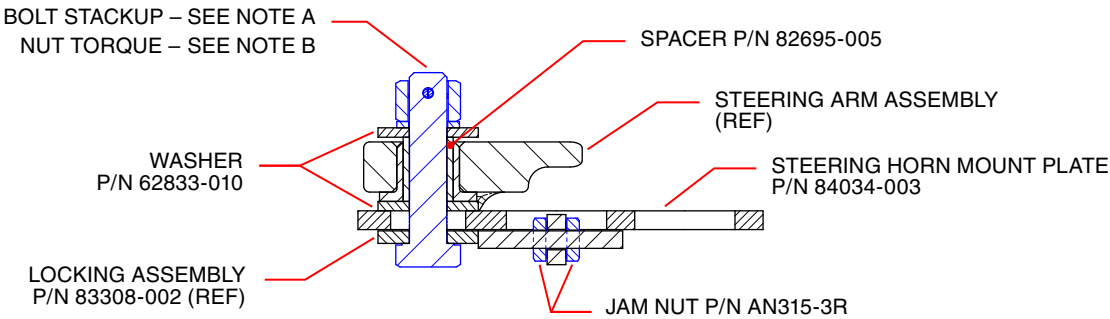


NOTE: The clearance between the steering arm and both of the rollers must be 0.010 – 0.030 inch.

DETAIL E

CLEARANCE BETWEEN STEERING ARM AND ROLLERS

Figure 1 – Sheet 4 of 5
Nose Wheel Steering Assemblies – Typical

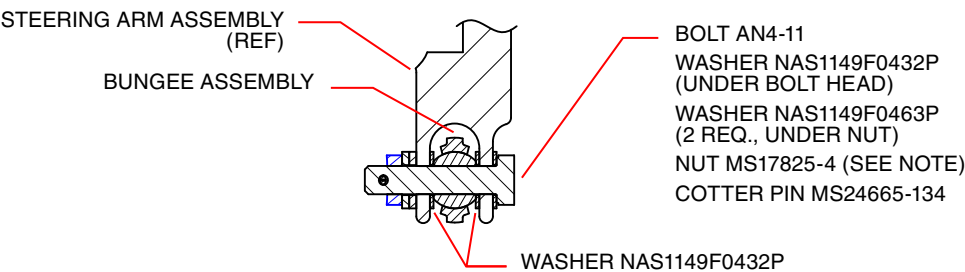


NOTE A: The bolt stackup, by models:

For M600 (shown):	For M350 and M500:
BOLT AN6-15	BOLT AN6-14A
WASHER NAS1149F0663P	NUT MS21042-6
NUT MS17825-6	
COTTER PIN MS24665-283	

NOTE B: For M600 only, torque the Nut MS17825-6 to 100 in-lb, then back off to the nearest radial slit.
For M350 and M500, torque the Nut MS21042-6 to 175-190 in-lb.

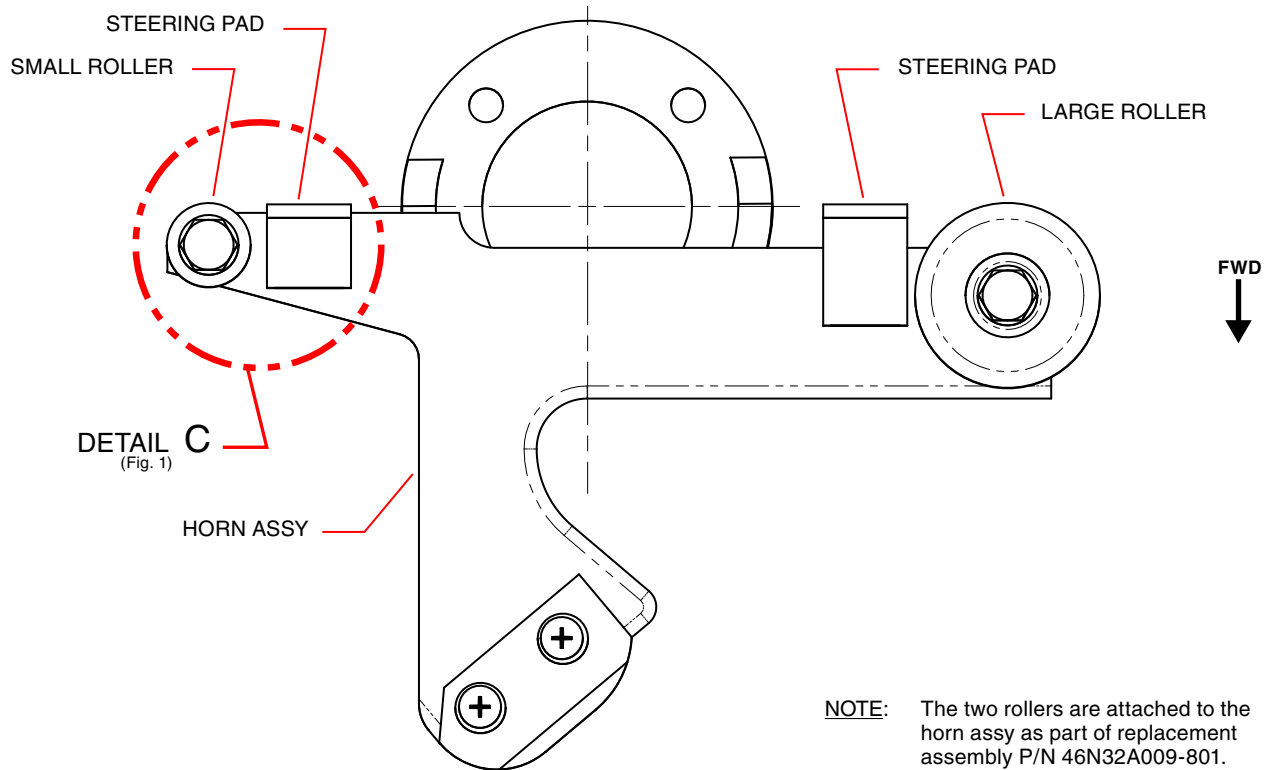
VIEW F-F
STEERING ARM BEARING BOLT STACK-UP AND JAM NUTS



NOTE: Torque the Nut MS17825-4 to 35 in-lb, then back off to the nearest radial slit.

VIEW G-G
BOLT COMMON TO THE BUNGEE
AND STEERING ARM ASSEMBLIES

Figure 1 – Sheet 5 of 5
Nose Wheel Steering Assemblies – Typical

**STEERING HORN AND ROLLER ASSEMBLY**

P/N 46N32A009-801

LOOKING DOWN

Figure 2

Replacement Steering Horn and Roller Assembly

8. Alignment and Adjustment of Nose Landing Gear

To ensure that the nose gear components have been properly installed, review the entirety of Piper Service Letter 1286 (latest revision), "Nose Landing Gear Steering Components Inspection and Adjustment," and complete the applicable procedures to ensure proper nose gear alignment, adjustment and rudder cable tension.

9. Complete a logbook entry documenting compliance with this service bulletin, after the applicable steps in SL 1286 (latest revision) have been accomplished.

MATERIAL REQUIRED:

Per aircraft, on condition:

- One (1) each, Horn and Roller Assy – Nose Wheel Steering, Piper P/N 46N32A009-801; as required, Safety Wire, P/N 151-296 (MS20995-C32)
- One (1) each, Arm Assembly – Steering, Piper P/N 83626-004; Cotter Pin, P/N 424-052 (MS24665-134)
- For PA-46-600TP M600 only – one (1) each, Cotter Pin, P/N 424-059 (MS24665-283)

AVAILABILITY OF PARTS:

Your Piper Approved Service Center

EFFECTIVITY DATE:

This service bulletin is effective upon receipt.

SUMMARY:

Applicable factory participation is limited to new aircraft in warranty at the time of compliance. Factory participation will remain in effect for a period of time not to exceed 180 days from the date of this service bulletin.

Please contact your Piper Approved Service Center to make arrangements for compliance with this service bulletin in accordance with the compliance time indicated.

NOTE: Please notify the factory of any address/ownership corrections. Changes should include aircraft model, serial number, and current owner's name and address.

Corrections and/or changes should be directed to:

PIPER AIRCRAFT, INC.

Attn: Customer Service

2926 Piper Drive

Vero Beach, FL 32960

or:

CustomerService@piper.com

Please include in subject line: "Aircraft ownership update"