



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

SERVICE NO. 1197B

BULLETIN
SUPERSEDED!

PIPER CONSIDERS COMPLIANCE MANDATORY

For reference only.

Date: May 3, 2010 (S) (M)

SB 1197B supersedes SB 1197A. SB 1197B clarifies the inspection procedure. Aircraft that have previously complied with SB 1197 and SB 1197A are in compliance with SB 1197B.

SUBJECT:

CONTROL WHEEL SHAFT INSPECTION

MODELS AFFECTED:

SERIAL NUMBERS AFFECTED:

PA-28-140 Cherokee Cruiser

28-20001 through 28-26946; 28-7125001 through 28-7725290

PA-28-150 Cherokee

28-03; 28-1 through 28-4377 & 28-1760A

PA-28-160 Cherokee

28-03; 28-1 through 28-4377 & 28-1760A

PA-28-180 Cherokee

28-03; 28-671 through 28-5859 & 28-7105001 through 28-7205318

PA-28S-160 Cherokee

28-1 through 28-1760 & 28-1760A

PA-28S-180 Cherokee

28-671 through 28-5859 & 28-7105001 through 28-7105234

PA-28-235 Cherokee Pathfinder

28-10001 through 28-11378; 28-7110001 through 28-7210023

PA-28-235 Cherokee Pathfinder

28E-11 & 28-7310001 through 28-7710089

PA-28-236 Dakota

28-7911001 through 28-8611008; 2811001 through 2811050

PA-28-151 Warrior

28-7415001 through 28-7715314

PA-28-161 Cadet

2841001 through 2841365

PA-28-161 Warrior II

28-7716001 through 28-8216300; 28-8316001 through 28-8616057; 2816001 through 2816109

PA-28-161 Warrior III

2816110 through 2816119; 2842001 through 2842305

PA-28-180 Archer

28-E13; 28-7305001 through 28-7505260

PA-28-181 Archer II

28-7690001 through 28-8690056; 28-8690061;

PA-28-181 Archer III

28-8690062; 2890001 through 2890205

PA-28-201T Turbo Dakota

2890206 through 2890231; 2843001 through 2843672

PA-28R-180 Arrow

28-7921001 through 28-7921095

PA-28R-200 Arrow

28R-30002 through 28R-31270; 28R-7130001 through 28R-7130013

PA-28R-200 Arrow II

28R-7130013

PA-28R-201 Arrow III

28R-35001 through 28R-35820; 28R-7135001 through 28R-7135229

PA-28R-201T Turbo Arrow III

28R-7235001 through 28R-7635545

PA-28RT-201 Arrow IV

28R-7737002 through 28R-7837317; 2837001 through 2837061; 2844001 through 2844138

PA-28RT-201 Arrow IV

28R-7703001 through 28R-7803374; 2803001 through 2803012

28R-7918001 through 28R-7918267

28R-8018001 through 28R-8218026

(OVER)

ATA: 2710

MODELS AFFECTED: (Continued)

PA-28RT-201T Turbo Arrow IV

PA-32-260 Cherokee Six

PA-32-300 Cherokee Six

PA-32S-300 Cherokee Six Seaplane

PA-32R-300 Lance

PA-32RT-300 Lance II

PA-32RT-300T Turbo Lance II

PA-32R-301 Saratoga SP

PA-32R-301 Saratoga II HP

PA-32R-301 Saratoga II HP (with Entegra)

PA-32R-301T Turbo Saratoga SP

PA-32-301 Saratoga

PA-32-301T Turbo Saratoga

PA-32R-301T Saratoga II TC

PA-32-301FT Piper 6X

PA-32-301XTC Piper 6XT

PA-32-301XTC Piper 6XT (with Entegra)

PA-34-200 Seneca

PA-34-200T Seneca II

PA-34-220T Seneca III

PA-34-220T Seneca IV

PA-34-220T Seneca V

PA-44-180 Seminole

PA-44-180 Seminole

PA-44-180T Seminole

SERIAL NUMBERS AFFECTED: (Continued)

28R-7931001 through 28R-8631005; 2831001 through 2831038

32-03; 32-04; 32-1 through 32-1297; 32-7100001 through 32-7800008

32-15; 32-21; 32-40000 through 32-40974; 32-7140001 through 32-7940290

32S-15; 32S-40000 through 32S-40974;

32S-7140001 through 32S-7240137

32R-7680001 through 32R-7880068

32R-7885002 through 32R-7985106

32R-7787001; 32R-7887002 through 32R-7987126

32R-8013001 through 32R-8613006; 3213001 through 3213028; 3213030 through 3213041

3213029; 3213042 through 3213103; 3246001 through 3246217; 3246219; 3246223

3246218; 3246220 through 3246222; 3246224 through 3246244

32R-8029001 through 32R-8629008; 3229001 through 3229003

32-8006002 through 32-8606023; 3206001 through 3206019; 3206042 through 3206044; 3206047;

3206050 through 3206055; 3206060

32-8024001 through 32-8424002

3257001 through 3257483

3232001 through 3232074

3255001 through 3255014; 3255026

3255015 through 3255025; 3255027; 3255051

34-E4; 34-7250001 through 34-7450220

34-7570001 through 34-8170092

34-8133001 through 34-8633031; 3433001 through 3433172; 3448001 through 3448037

3448038 through 3448079; 3447001 through 3447029

3449001 through 3449377

44-7995001 through 44-8195026

4495001 through 4495013; 4496001 through 4496251

44-8107001 through 44-8207020

COMPLIANCE TIME:

To coincide with next regularly scheduled maintenance event, but not to exceed the next one hundred (100) hours time in service.

APPROVAL:

The technical content of this Service Bulletin has been shown to comply with the applicable Federal Aviation Regulations and is FAA approved.

PURPOSE:

Piper has received two field reports of incorrectly-assembled control wheel shafts. Specifically, the shaft common to the sprocket and the universal joint (both pilot and copilot sides) may not have been inserted fully into the universal joint prior to match-drilling the hole for the taper pin that fastens the shaft to the universal joint. The cause of this condition is unknown. Holes mis-drilled in such a manner may appear visually to be acceptable, when in fact the hole in the shaft may be too close to the end of the shaft, causing a significant reduction in joint strength.

Left uncorrected, this condition could lead to separation of the control wheel shaft, resulting in loss of pitch and roll control.

This Service Bulletin provides instructions for a mandatory inspection of the shaft to universal joint interface to ensure that they are assembled correctly on all aircraft that might be affected.

INSTRUCTIONS:

1. Gain access to the forward end of the control wheel column between the instrument panel and the forward firewall.
2. Locate the shaft and the universal joint (2 per aircraft), which are fastened together with a threaded taper pin, as shown in Figures 1 and 2. These components are installed on the aft side of the T-bar assembly.

NOTE: Some early model aircraft may have a hex head bolt installed, instead of a taper pin. In both cases, inspection is required to verify adequate edge distance for the hole in the shaft.

NOTE: Each universal joint must be fastened to the mating shaft with either a taper pin or a bolt. Any other configuration does not conform to type design.

3. Inspect each universal joint for the presence of a witness hole, as shown in figure 2. Most aircraft will have this witness hole feature. However, some early model aircraft may not have a witness hole. If no witness hole exists, proceed to step 5.
4. Insert a 3/64 inch diameter drill rod into each witness hole as far as it will go with hand pressure. Measure the depth of penetration:
 - If the drill rod penetration depth measures approximately 0.2 inches, this indicates that the drill rod is bottoming out against the near side of the fully inserted shaft. This installation is correct. Proceed to step 8.
 - If the drill rod penetration depth exceeds 0.2 inches, this indicates that the drill rod is bottoming out against the far side inner wall of the universal joint, and is not making contact with the shaft. Universal joints with this condition may have a shaft with inadequate edge distance, and will require further inspection. Proceed to step 5.
5. If the inspection from step 3 identifies a universal joint without a witness hole, or if the inspection from step 4 identifies a shaft with potentially inadequate edge distance, temporarily remove the taper pin (or bolt, as applicable) and disassemble the universal joint from the shaft.

NOTE: Taper pins may become difficult to remove on older aircraft. If necessary, contact Piper Aircraft at (772) 299-2141 for the location of a Piper authorized facility with experience in this procedure. Piper normal business hours are 7:30 AM to 4:30 PM EST, Monday through Friday.

Examine the shaft:

- If the distance from the end of the shaft to the centerline of the hole for the taper pin (or bolt) measures 0.19 inches or more, the edge distance is adequate, and existing parts may be reassembled. Proceed to step 7.
- If the distance from the end of the shaft to the centerline of the hole for the taper pin (or bolt) measures less than 0.19 inches, the edge distance is inadequate, and replacement of the shaft is required. Proceed to step 6.

INSTRUCTIONS: (Continued)

6. If the inspection from step 5 identifies a shaft that must be replaced, identify and order the correct replacement shaft using table 1, 2 or 3 as applicable. In addition, replace any universal joint that exhibits damage, corrosion or excessive wear. Mate the shaft to the universal joint using the following procedure:

A. For installations using taper pins:

- 1) Insert shaft into universal joint, to a depth that achieves a minimum of 0.19 inches from the end of the shaft to the centerline of the hole for the taper pin. Drill hole through mated parts at taper pin location, using a #5 (.2055 inch diameter) drill bit.
- 2) Ream drilled hole in steps, with a #1 tapered reamer, Piper P/N 906-713. In a properly sized tapered hole, the tapered pin shall install to a depth such that the small end of the tapered shank (where the threads begin) is between 0.030 inches inside and 0.062 inches outside of outer surface.

B. For installations using hex head bolts:

Insert shaft into universal joint, to a depth that achieves a minimum of 0.19 inches from the end of the shaft to the centerline of the hole for the bolt. Drill hole through mated parts at bolt location, using a #16 (.1770 inch diameter) drill bit. Ream hole to final size of .1870 to .1875 inches in diameter.

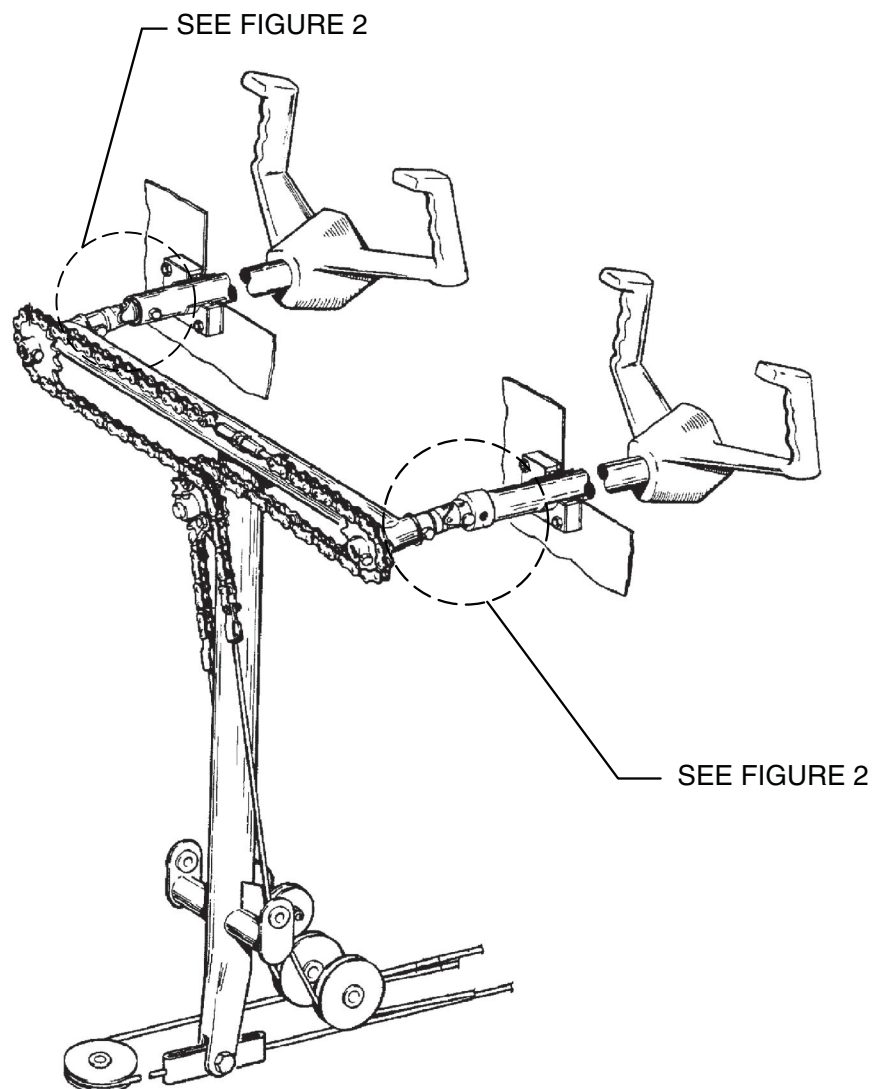


Figure 1
Control Column Assembly

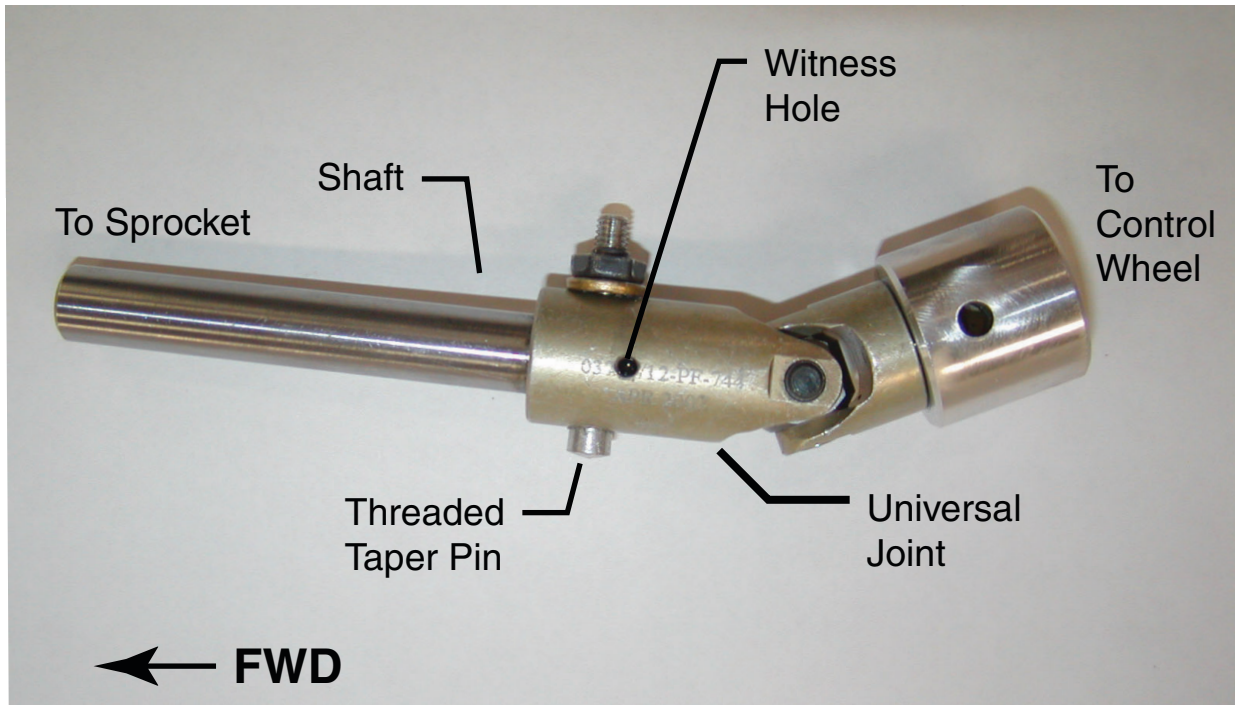


Figure 2
Shaft Fastened to Universal Joint

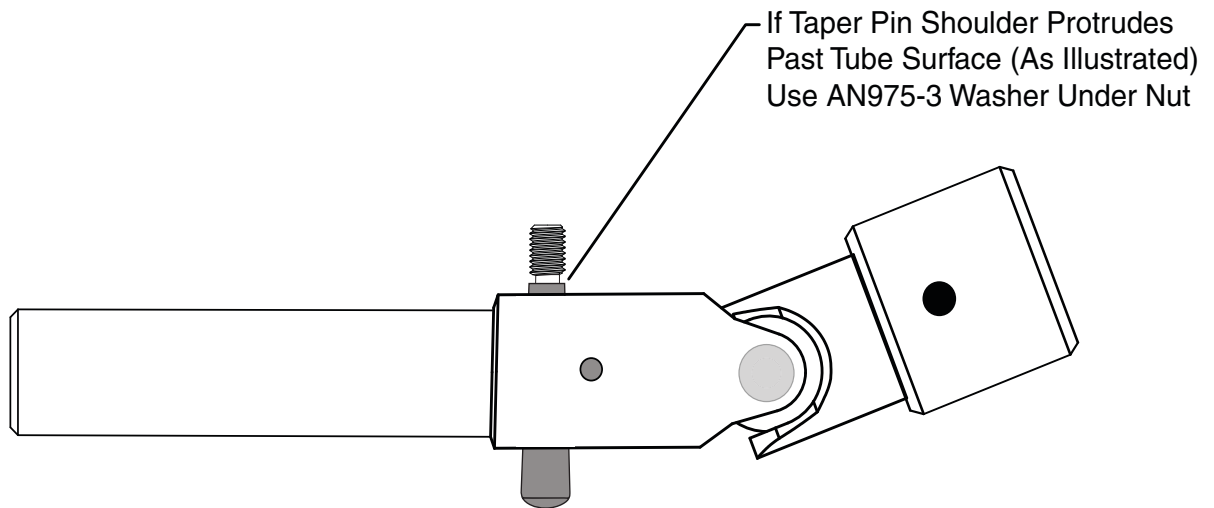


Figure 3
Taper Pin Protrusion

INSTRUCTIONS: (Continued)

7. Reinstall threaded fastener

A. For taper pins:

Install tapered pin through mated parts. (See Figure 3). Install the appropriate washer under the nut, using the following criteria:

- If pin shoulder (small taper end) does not protrude past outer surface, install an AN960-10 washer (Piper part number 407-564) under nut.
- If pin shoulder (small taper end) protrudes past tube surface, install an AN975-3 washer (Piper part number 494-093) under nut.

NOTE: Do not reuse the nut that installs the taper pin. Taper pins, washers, sprockets and universal joints may be reused, if they are determined to be in airworthy condition.

B. For hex head bolts:

Install bolt, washer and nut to match original hardware stack up.

NOTE: Do not reuse the nut that installs the bolt. Bolts, washers, sprockets and universal joints may be reused, if they are determined to be in airworthy condition.

8. Make a logbook entry indicating compliance with this Service Bulletin.

MATERIAL REQUIRED:

The correct part numbers may be found in the applicable Aircraft Parts Catalog and Tables 1, 2 and 3

AVAILABILITY OF PARTS:

Your Piper Service Facility.

EFFECTIVITY DATE:

This Service Bulletin is effective as of release date.

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 Factory Authorized Piper Service Facility 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, 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

**Table 1
REPLACEMENT SHAFT and UNIVERSAL JOINT**

| Model | Serial Number | Shaft | | Universal Joint |
|-------------------------------|-------------------------------|-----------------|--------------------|-----------------|
| | | left (Pilot) | right (Copilot) | |
| PA-28-140 Cherokee | 28-20001 through 28-20160 | 62716-002 | 62716-003 | 62834-000 |
| | 28-20161 through 28-21845 | 62716-004 | 62716-005 | 62834-000 |
| | 28-21931 through 28-21934 | | | |
| | 28-21846 through 28-21930 | 62716-006 | 62716-007 | 62834-002 |
| | 28-21935 through 28-25400 | 62716-007 | 62716-007 | 62834-002 |
| 28-25401 through 28-26946 | | | | |
| PA-28-150 Cherokee | 28-1 through 28-1760 | 62716-002 | 62716-003 | 62834-000 |
| | 28-03, 28-1760A | 62716-004 | 62716-005 | 62834-000 |
| | 28-1761 through 28-3377 | | | |
| 28-3378 through 28-4377 | 62716-006 | 62716-007 | 62834-002 | |
| PA-28-160 Cherokee | 28-1 through 28-1760 | 62716-002 | 62716-003 | 62834-000 |
| | 28-03, 28-1760A | 62716-004 | 62716-005 | 62834-000 |
| | 28-1761 through 28-3377 | | | |
| 28-3378 through 28-4377 | 62716-006 | 62716-007 | 62834-002 | |
| PA-28-180 Cherokee | 28-671 through 28-1760 | 62716-002 | 62716-003 | 62834-000 |
| | 28-03 | 62716-004 | 62716-005 | 62834-000 |
| | 28-1761 through 28-3377 | | | |
| | 28-3378 through 28-4377 | 62716-006 | 62716-007 | 62834-002 |
| 28-4378 through 28-5859 | 62716-007 | 62716-007 | 62834-002 | |
| 28-7105001 through 28-7205318 | | | | |
| PA-28S-160 Cherokee | 28-1 through 28-1760 | 62716-002 | 62716-003 | 62834-000 |
| PA-28S-180 Cherokee | 28-1760A | 62716-004 | 62716-005 | 62834-000 |
| | 28-671 through 28-1760 | | | |
| | 28-1761 through 28-3377 | 62716-006 | 62716-007 | 62834-002 |
| | 28-3378 through 28-4377 | 62716-007 | 62716-007 | 62834-002 |
| | 28-4378 through 28-5859 | | | |
| 28-7105001 through 28-7105234 | | | | |
| PA-28-235 Cherokee | 28-10001 through 28-10486 | 62716-002 | 62716-003 | 62834-000 |
| | 28-10487 through 28-10719 | 62716-004 | 62716-005 | 62834-000 |
| | 28-10720 to 28-11039 | 62716-006 | 62716-007 | 62834-002 |
| | 28-11040 through 28-11378 | 62716-007 | 62716-007 | 62834-002 |
| | 28-7110001 through 28-7210023 | | | |
| 28E-11 | 28-7310001 through 28-7710089 | | | |
| PA-28-236 Dakota | 28-7911001 through 28-8611008 | 62716-007 | 62716-007 | 62834-002 |
| PA-28-151 Warrior | 2811001 through 2811050 | 62716-007 | 62716-007 | 62834-002 |
| | 28-7415001 through 28-7715314 | | | |
| PA-28-161 Cadet | 2841001 through 2841365 | 62716-007 | 62716-007 | 62834-002 |
| PA-28-161 Warrior II | 28-7716001 through 28-8216300 | 62716-007 | 62716-007 | 62834-002 |
| | 28-8316001 through 28-8616057 | | | |
| | 2816001 through 2816109 | | | |
| | 2816110 through 2816119 | | | |
| 2842001 through 2842305 | | | | |

**Table 2
REPLACEMENT SHAFT and UNIVERSAL JOINT**

| Model | Serial Number | Shaft | | Universal Joint |
|--|---|-----------------|--------------------|-----------------|
| | | left (Pilot) | right (Copilot) | |
| PA-28-161 Warrior III | 2816110 through 2816119 2842001 through 2842305 | 62716-007 | 62716-007 | 62834-002 |
| PA-28-180 Archer | 28-E13 28-7305001 through 28-7505260 | 62716-007 | 62716-007 | 62834-002 |
| PA-28-181 Archer II | 28-7690001 through 28-8690056 28-8690061, 28-8690062 2890001 through 2890205 | 62716-007 | 62716-007 | 62834-002 |
| PA-28-181 Archer III | 2890206 through 2890231 2843001 through 2843672 | 62716-007 | 62716-007 | 62834-002 |
| PA-28-201T Turbo Dakota | 28-7921001 through 28-7921095 | 62716-007 | 62716-007 | 62834-002 |
| PA-28R-180 Arrow | 28R-30002 through 28R-31270 8R-7130001 through 28R-7130013 | 62716-007 | 62716-007 | 62834-002 |
| PA-28R-200 Arrow | 28R-35001 through 28R-35820 28R-7135001 through 28R-7135229 | 62716-007 | 62716-007 | 62834-002 |
| PA-28R-200 Arrow II | 28R-7235001 through 28R-7635545 | 62716-007 | 62716-007 | 62834-002 |
| PA-28R-201 Arrow III | 28R-7737002 through 28R-7837317 2837001 through 2837061 2844001 through 2844138 | 62716-007 | 62716-007 | 62834-002 |
| PA-28R-201T Turbo Arrow III | 28R-7703001 through 28R-7803374 2803001 through 2803012 | 62716-007 | 62716-007 | 62834-002 |
| PA-28RT-201 Arrow IV | 28R-7918001 through 28R-7918267 28R-8018001 through 28R-8218026 | 62716-007 | 62716-007 | 62834-002 |
| PA-28RT-201T Turbo Arrow IV | 28R-7931001 through 28R-8631005 2831001 through 2831038 | 62716-007 | 62716-007 | 62834-002 |
| PA-32-260 Cherokee Six | 32-03, 32-04 | 62716-004 | 62716-005 | 62834-000 |
| | 32-1 through 32-600 | | | |
| | 32-601 through 32-690 | 62716-006 | 62716-007 | 62834-002 |
| | 32-691 through 32-1297 32-7100001 through 32-7800008 | 62716-007 | 62716-007 | 62834-002 |
| PA-32-300 Cherokee Six | 32-15, 32-21 | 62716-004 | 62716-005 | 62834-000 |
| | 32-40000 through 32-40415 | 62716-006 | 62716-007 | 62834-002 |
| | 32-40416 through 32-40974 | | | |
| | 32-7140001 through 32-7940290 | 62716-007 | 62716-007 | 62834-002 |
| PA-32S-300 Cherokee Six Seaplane | 32S-15 | 62716-004 | 62716-005 | 62834-000 |
| | 32S-40000 through 32S-40415 | 62716-006 | 62716-007 | 62834-002 |
| | 32S-40416 through 32S-40974 | | | |
| | 32S-7140001 through 32S-7240137 | 62716-007 | 62716-007 | 62834-002 |
| PA-32R-300 Lance | 32R-7680001 through 32R-7880068 | 62716-007 | 62716-007 | 62834-002 |
| PA-32RT-300 Lance II | 32R-7885002 through 32R-7985106 | 62716-007 | 62716-007 | 62834-002 |
| PA-32RT-300T Turbo Lance II | 32R-7787001 32R-7887002 through 32R-7987126 | 62716-007 | 62716-007 | 62834-002 |

Table 3
Figure 4REPLACEMENT SHAFT and UNIVERSAL JOINT

| Model | Serial Number | Shaft | | Universal Joint |
|--|--|-----------------|--------------------|-----------------|
| | | left (Pilot) | right (Copilot) | |
| PA-32R-301 Saratoga SP | 32R-8013001 through 32R-8613006 3213001 through 3213028 3213030 through 3213041 | 62716-007 | 62716-007 | 62834-002 |
| PA-32R-301 Saratoga II HP | 3213029 3213042 through 3213103 3246001 through 3246217 3246219; 3246223 | 62716-007 | 62716-007 | 62834-002 |
| PA-32R-301 Saratoga II HP (with Entegra) | 3246218 3246220 through 3246222 3246224 through 3246244 | 62716-007 | 62716-007 | 62834-002 |
| PA-32R-301T Turbo Saratoga SP | 32R-8029001 through 32R-8629008 3229001 through 3229003 | 62716-007 | 62716-007 | 62834-002 |
| PA-32-301 Saratoga | 32-8006002 through 32-8606023 3206001 through 3206019 3206042 through 3206044 3206047 3206050 through 3206055 3206060 | 62716-007 | 62716-007 | 62834-002 |
| PA-32-301T Turbo Saratoga | 32-8024001 through 32-8424002 | 62716-007 | 62716-007 | 62834-002 |
| PA-32R-301T Saratoga II TC | 3257001 through 3257483 | 62716-007 | 62716-007 | 62834-002 |
| PA-32-301FT Piper 6X | 3232001 through 3232074 | 62716-007 | 62716-007 | 62834-002 |
| PA-32-301XTC Piper 6XT | 3255001 through 3255014 3255026 | 62716-007 | 62716-007 | 62834-002 |
| PA-32-301XTC Piper 6XT (with Entegra) | 3255015 through 3255025 3255027, 3255051 | 62716-007 | 62716-007 | 62834-002 |
| PA-34-200 Seneca | 34-E4 34-7250001 through 34-7450220 | 62716-007 | 62716-007 | 62834-002 |
| PA-34-200T Seneca II | 34-7570001 through 34-8170092 | 62716-007 | 62716-007 | 62834-002 |
| PA-34-220T Seneca III | 34-8133001 through 34-8633031 3433001 through 3433172 3448001 through 3448037 | 62716-007 | 62716-007 | 62834-002 |
| PA-34-220T Seneca IV | 3448038 through 3448079 3447001 through 3447029 | 62716-007 | 62716-007 | 62834-002 |
| PA-34-220T Seneca V | 3449001 through 3449377 | 62716-007 | 62716-007 | 62834-002 |
| PA-44-180 Seminole | 44-7995001 through 44-8195026 4495001 through 4495013 4496001 through 4496251 | 62716-007 | 62716-007 | 62834-002 |
| PA-44-180T Seminole | 44-8107001 through 44-8207020 | 62716-007 | 62716-007 | 62834-002 |

BULLETIN SUPPLEMENT - PROCEDURAL OPERATING INFORMATION

MATERIAL ALLOWANCE:

N/R.

LABOR ALLOWANCE:

* For aircraft in warranty only, one half (0.5) hour is the maximum time to be allowed to accomplish the inspection of both sides (pilot's and copilot's). Six (6) hours is the maximum time to be allowed to replace the u-joint, shaft and sprocket, per side (a maximum of twelve (12) hours for both sides).

DISPOSITION OF PARTS IN STOCK:

N/A

DISPOSITION OF PARTS REPLACED:

N/A

*Piper will only pay for the hours it takes an Authorized Service Center to perform the task up to, but not to exceed, the "hours" listed in the "Labor Allowance" section above.