

## 6-10. GEARED HUB SIDE COVER REPLACEMENT

This task covers:

- a. Removal
- b. Cleaning and Inspection

- c. Installation

### INITIAL SETUP:

#### Tools

General mechanic's tool kit:  
automotive (Appendix B, Item 1)

#### Materials/Parts

Sealing compound (Appendix C, Item 46)  
Sealant (Appendix C, Item 38)  
Drycleaning solvent, (Appendix C, Item 18)

#### Manual References

TM 9-2320-280-10  
TM 9-2320-280-24P

#### Equipment Condition

Wheel removed (para. 8-3).

#### General Safety Instructions

Drycleaning solvent is flammable and will not be used near an open flame. A fire extinguisher will be kept nearby when the solvent is used. Use only in well-ventilated places.

### NOTE

- Have drainage container ready to catch oil.
- Geared hub side cover replacement procedures are basically the same for front and rear covers. This procedure deals with the front side cover.

#### **a. Removal**

1. Remove drainplug (5) from geared hub (1) and drain geared hub (1).
2. Install drainplug (5) in geared hub (1).
3. Remove eight capscrews (4), washers (3), and side cover (2) from geared hub (1).

#### **b. Cleaning and Inspection**

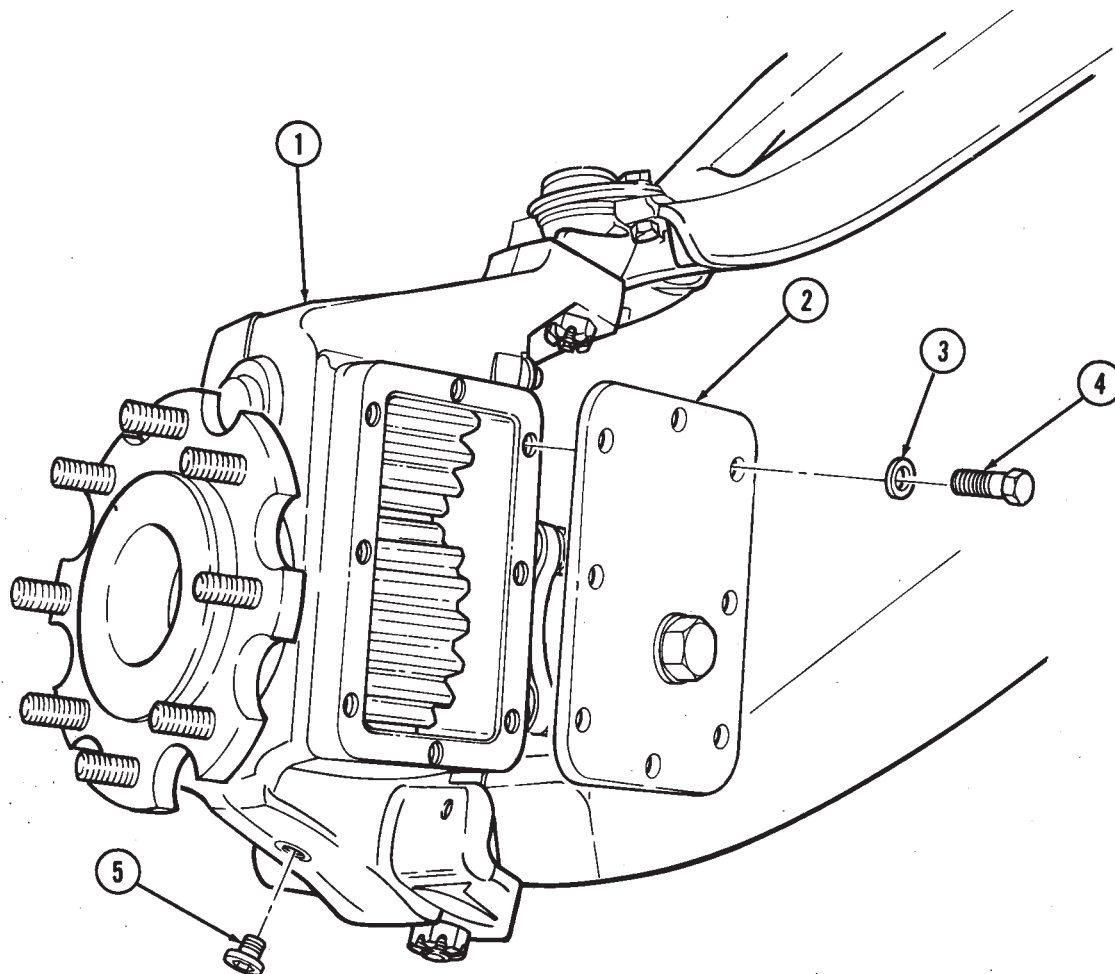
### **WARNING**

Drycleaning solvent is flammable and will not be used near an open flame. A fire extinguisher will be kept nearby when the solvent is used. Use only in well-ventilated places. Failure to do this may result in injury to personnel and/or damage to equipment.

1. Using drycleaning solvent, clean side cover (2).
2. Inspect side cover (2) for damage. If damaged replace.

#### **c. Installation**

1. Apply sealant (RTV) to side cover (2) and install side cover (2) on geared hub (1).
2. Apply sealing compound to capscrews (4) and install eight washers (3) and capscrews (4) on side cover (2). Tighten capscrews (4) to 15 lb-ft (20 N·m).

**6-10. GEARED HUB SIDE COVER REPLACEMENT (Cont'd)**

FOLLOW-ON TASKS:

- Fill geared hub to proper level (para. 2-11).
- Install wheel (para. 8-3).

# 6-11. GEARED HUB REPLACEMENT

This task covers:

a. Removal

b. Installation

INITIAL SETUP:

Tools

General mechanic's tool kit:  
automotive (Appendix B, Item 1)  
Puller kit (Appendix B, Item 167)

Materials/Parts

Three cotter pins (Appendix G, Item 14)  
Lockwasher (Appendix G, Item 146)  
Four locknuts (Appendix G, Item 79)  
(Basic/A1 Series)  
Four locknuts (Appendix G, Item 128)  
(Basic/A1 Series)  
Four locknuts (Appendix G, Item 104)  
(A2 Series)  
Four locknuts (Appendix G, Item 105)  
(A2 Series)  
Sealing compound (Appendix C, Item 45)  
Sealer (Appendix C, Item 39)

Personnel Required

One mechanic  
One assistant

Manual References

TM 9-2320-280-10  
TM 9-2320-280-24P

Equipment Condition

- Wheel removed (para. 8-3).
- Steering stop removed (para. 6-19).
- Air lifting bracket removed, rear only (para. 6-20).

General Safety Instructions

Geared hub must be supported during removal and installation.

**CAUTION**

Use of a pickle fork in lieu of the puller kit may damage serviceable components (boots).

**NOTE**

- Have drainage container ready to catch drained fluid.
- Removal and installation procedures are basically the same for front and rear geared hubs. This procedure covers the front geared hub.

**a. Removal**

1. Remove drainplug (29) from geared hub (9) and drain geared hub (9).
2. Install drainplug (29) in geared hub (9).
3. Remove capscrew (22), washer (23), vent line bracket and clamp (24) from geared hub (9).
4. Loosen clamp (10) and disconnect vent line (1) from geared hub fitting (11).
5. Remove cotter pin (25), slotted nut (26), and washer (27) from tie rod end (28) and geared hub (9). Discard cotter pin (25).
6. Using puller, disconnect tie rod end (28) from geared hub (9).
7. Remove access plug (14), washer (15), axle halfshaft retaining capscrew (13), lockwasher (12) and disconnect halfshaft (20) from geared hub (9). Discard lockwasher (12).

**WARNING**

Geared hub must be supported during removal and installation. Failure to support geared hub may cause injury to personnel or damage to equipment.

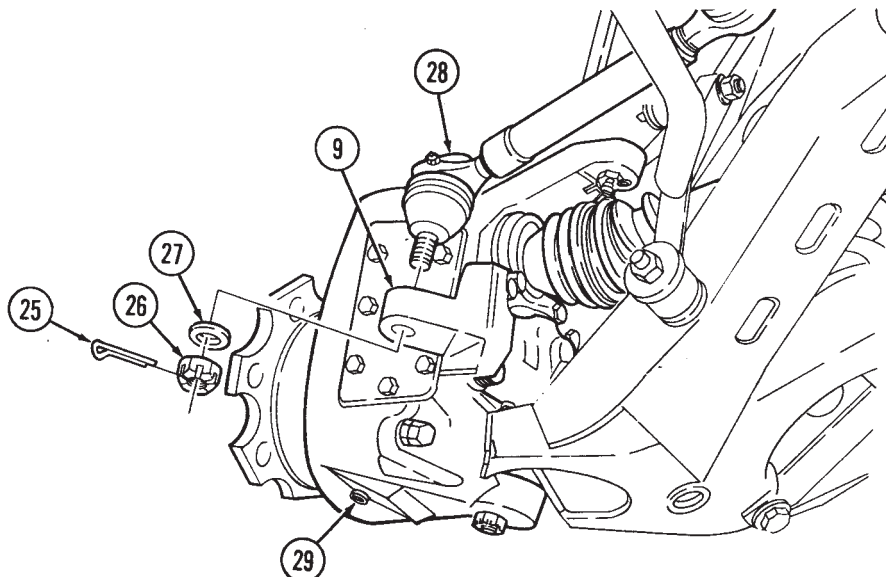
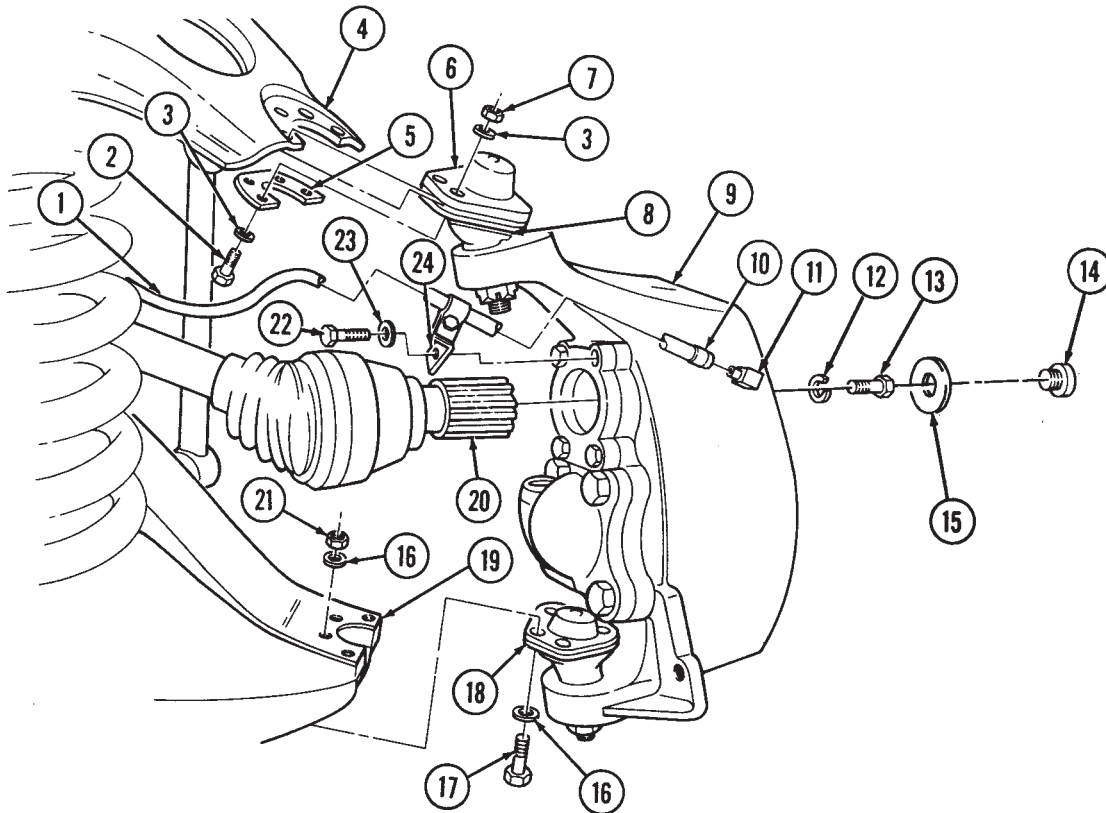
**NOTE**

Note direction of outer capscrew for installation.

8. Remove four locknuts (21), washers (16), capscrews (17), and washers (16) from lower ball joint (18) and lower control arm (19). Discard locknuts (21).

## 6-11. GEARED HUB REPLACEMENT (Cont'd)

9. Remove four locknuts (7), washers (3), capscrews (2), and washers (3) from boot retainer (8), ball joint retainer (5), upper ball joint (6) and upper control arm (4). Discard locknuts (7).
10. Lower support and remove geared hub (9).



## 6-11. GEARED HUB REPLACEMENT (Cont'd)

11. Place geared hub (3) in vise.
12. Remove cotter pin (8), slotted nut (9), and upper ball joint (10) from geared hub (3). Discard cotter pin (8).
13. Remove cotter pin (1), slotted nut (2), and lower ball joint (4) from geared hub (3). Discard cotter pin (1).

### b. Installation

#### NOTE

Upper ball joint has grease fitting.

1. Install upper ball joint (10) to geared hub (3) with slotted nut (9), but do not tighten.
2. Install lower ball joint (4) to geared hub (3) with slotted nut (2), but do not tighten.

#### NOTE

- If geared hub received is P/N 5598766 and left front or right rear installation is required, replace steering arm cover P/N 5591279 with P/N 5591280 for basic and A1 vehicles and P/N 6005121 for M1123 and A2 vehicles.
  - If geared hub received is P/N 5598767 and right front or left rear installation is required, replace steering arm cover P/N 5591280 with P/N 5591279 for basic and A1 vehicles and P/N 6005120 for M1123 and A2 vehicles.
  - Use existing steering arm cover if serviceable.
  - Perform steps 3 through 5 for replacement of steering arm cover. Proceed to step 6 for geared hub installation.
3. Remove four capscrews (7), washers (6), and steering arm cover (5) from geared hub (3).

#### NOTE

Immediately install steering arm cover after application of sealant.

4. Clean sealing surfaces on geared hub (3) and steering arm cover (5). Apply anaerobic sealant to steering arm cover (5).
5. Apply sealing compound to threads on capscrews (7) and install steering arm cover (5) to geared hub (3) with four washers (6) and capscrews (7). Tighten capscrews (7) to 65 lb-ft (88 N•m).

#### WARNING

Geared hub must be supported during removal and installation. Failure to support geared hub may cause injury to personnel or damage to equipment.

6. Install geared hub (3) and upper ball joint (10) on upper control arm (13) ensuring upper ball joint (10) is placed above upper control arm (13), and boot (16) and ball joint retainer (14) are placed below upper control arm (13).

#### NOTE

Ensure outer capscrews on front ball joints are installed from top down, and inner capscrews are installed from bottom up for M1123 and "A2" series vehicles only.

7. Install upper ball joint (10) and ball joint retainer (14) to upper control arm (13) with four washers (12), capscrews (11), washers (12), and locknuts (15). Tighten locknuts (15) to 252 lb-in. (28 N•m).

#### CAUTION

Do not loosen slotted nut to install cotter pin. Doing this may result in damage to equipment.

8. Tighten slotted nut (9) on upper ball joint (10) to 65 lb-ft (88 N•m). Install cotter pin (8).
9. Apply sealing compound to halfshaft retaining capscrew (18) and install halfshaft (24) to geared hub (3) with lockwasher (17) and halfshaft retaining capscrew (18). Tighten halfshaft retaining capscrew (18) to 37 lb-ft (50 N•m).

## 6-11. GEARED HUB REPLACEMENT (Cont'd)

10. Install washer (20) and access plug (19) to geared hub (3). Tighten access plug (19) to 8-13 lb-ft (11-18 N•m).
11. Install lower ball joint (4) and geared hub (3) on lower control arm (23). Ensure lower ball joint (4) is below lower control arm (23).

### NOTE

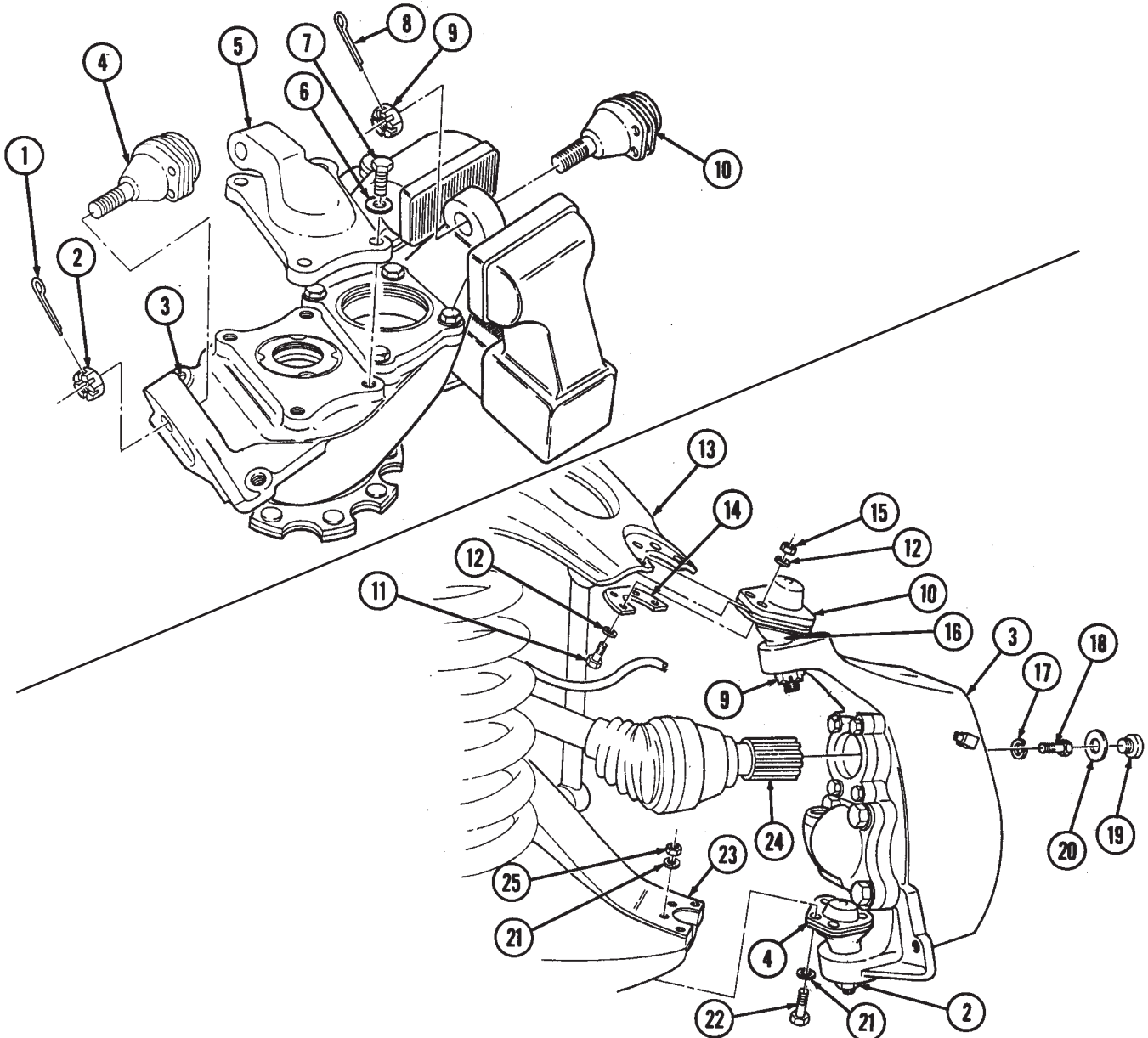
Ensure outer capscrews on front ball joints are installed from top down, and inner capscrews are installed from bottom up for M1123 and "A2" series vehicles only.

12. Secure lower ball joint (4) to lower control arm (23) with four washers (21), capscrews (22), washers (21), and locknuts (25). Tighten locknuts (25) to 35 lb-ft (47 N•m).

### CAUTION

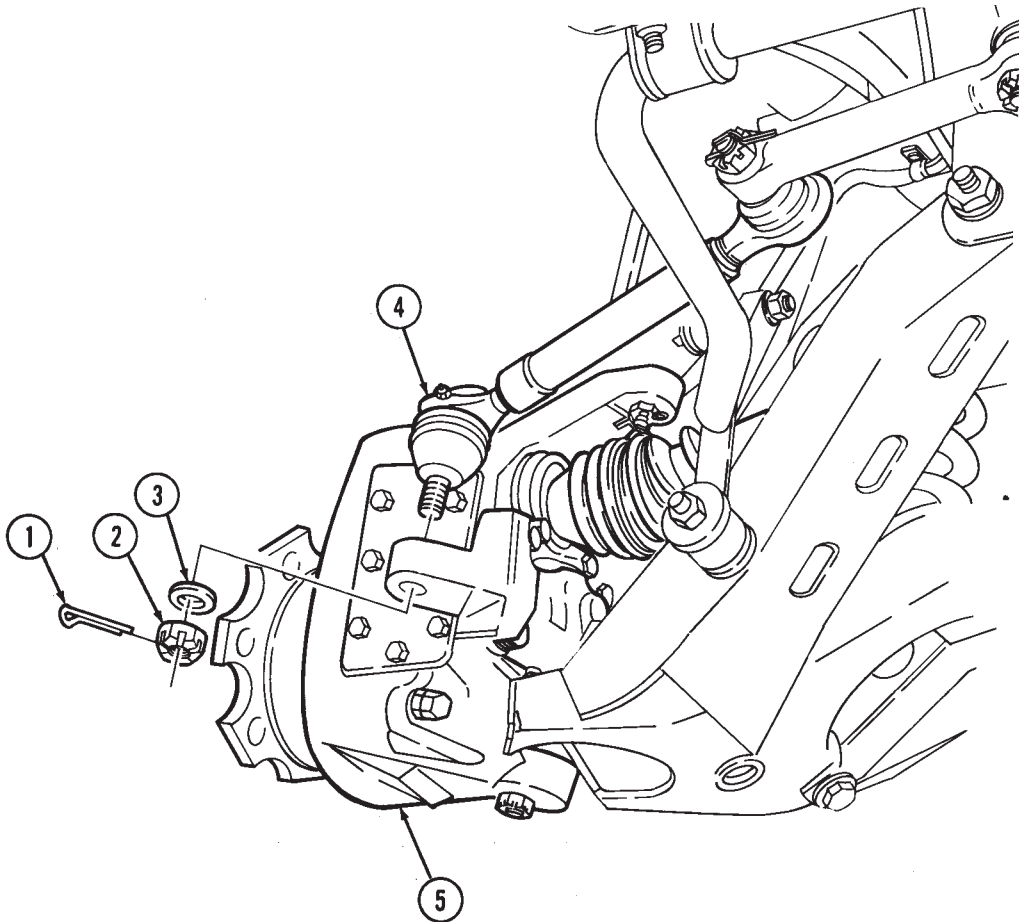
Do not loosen slotted nut to install cotter pin. Doing this may result in damage to equipment.

13. Tighten slotted nut (2) on lower ball joint (4) to 73 lb-ft (99 N•m). Install cotter pin (1).



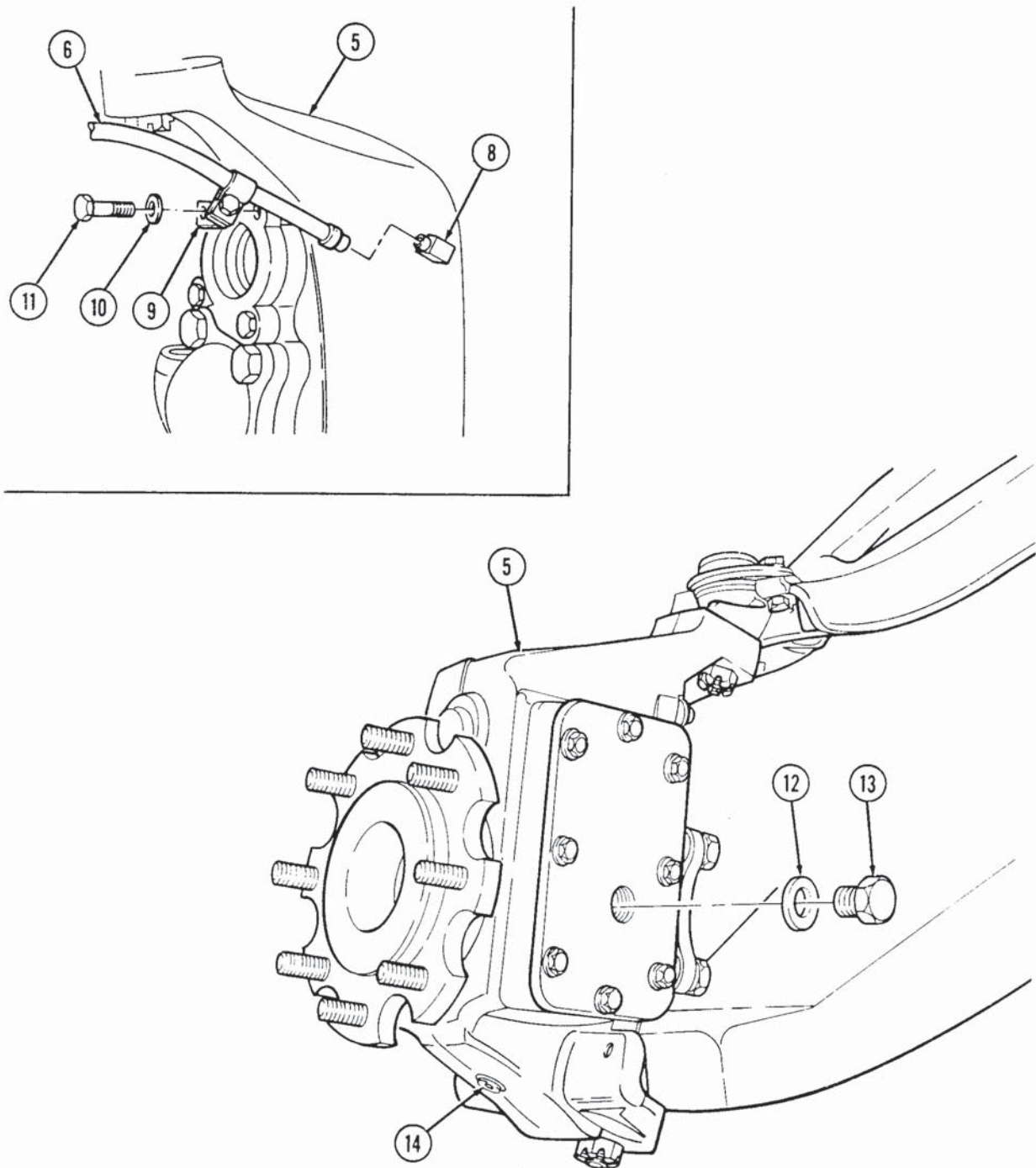
## 6-11. GEARED HUB REPLACEMENT (Cont'd)

14. Install tie rod end (4) into geared hub (5) with washer (3) and slotted nut (2). Tighten slotted nut (2) to 70 lb-ft (95 N•m). Install cotter pin (1).
15. Connect vent line (6) to geared hub fitting (8) with clamp (7).
16. Install vent line (6) and clamp (9) to geared hub (5) with washer (10) and capscrew (11). Tighten capscrew (11) to 38 lb-ft (52 N•m).
17. Tighten drainplug (14) to 8-13 lb-ft (18-18 N•m).
18. Remove fill plug (13) and washer (12) from geared hub (5).
19. Fill geared hub (5) to proper level (para. 2-11).
20. Install washer (12) and fill plug (13) to geared hub (5). Tighten fill plug (13) to 8-13 lb-ft (11-18 N•m).





# 6-11. GEARED HUB REPLACEMENT (Cont'd)



- FOLLOW-ON TASKS:
- Install steering stop (para. 6-19).
  - Install wheel (para. 8-3).
  - Install air lifting bracket, rear only (para. 6-20).
  - Check alignment (paras. 8-10 and 8-11).



## 6-12. GEARED HUB INPUT SEAL REPLACEMENT

This task covers:

**a. Removal**

**b. Installation**

**INITIAL SETUP:**

Tools

General mechanic's tool kit:  
automotive (Appendix B, Item 1)  
Vise insert (Appendix B, Item 170)

Special Tools

Installer (Appendix B, Item 126)  
Driver handle (Appendix B, Item 75)

Materials/Parts

Plain seal (Appendix G, Item 290)  
Lubricating oil (Appendix C, Item 26)

Manual References

TM 9-2320-280-24P

Equipment Condition

Halfshaft removed (para. 6-9).

**a. Removal**

**NOTE**

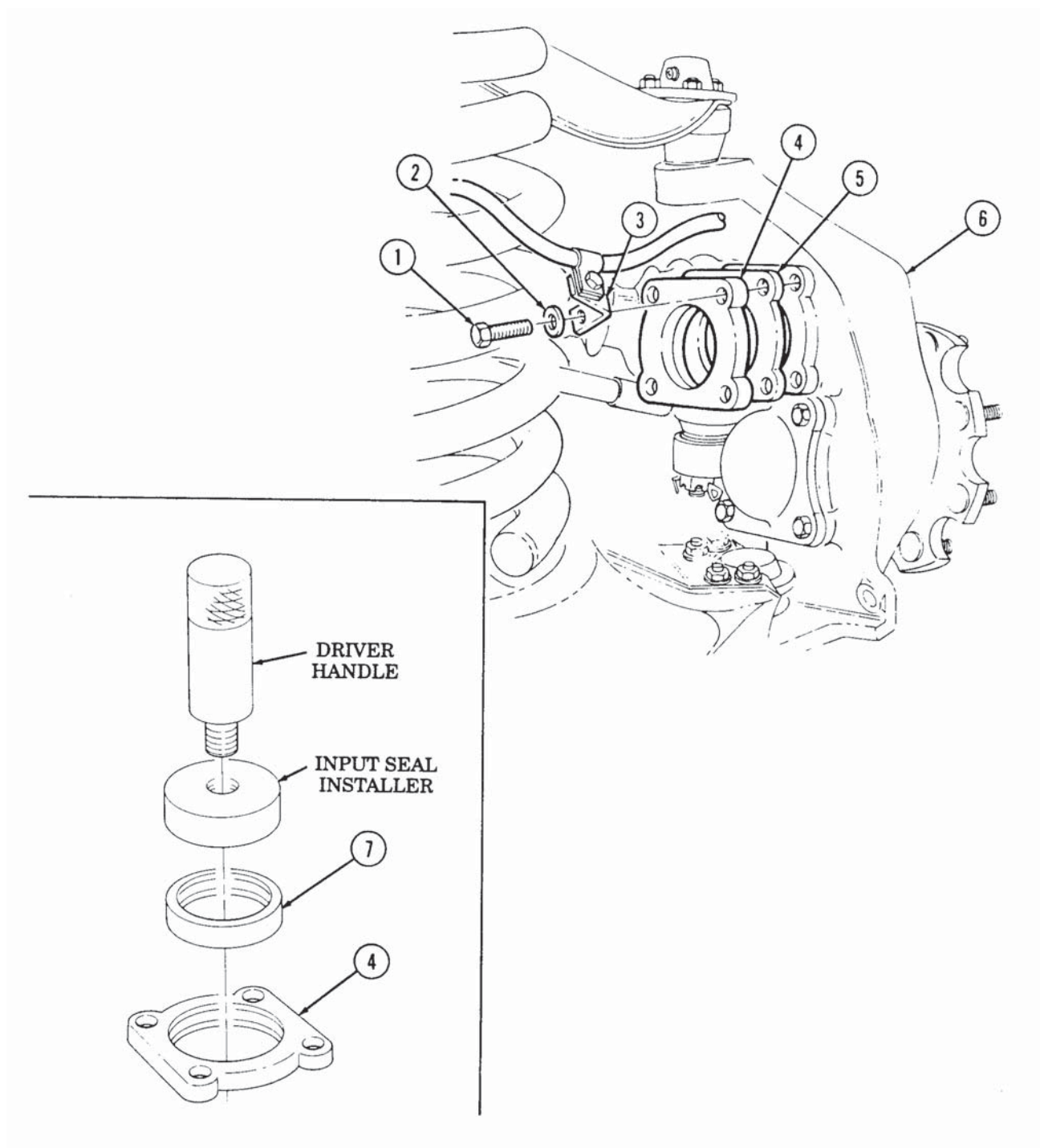
Shim gaskets must be reused to maintain proper drive gear bearing adjustment.

1. Remove capscrew (1), washer (2), and vent line bracket (3) from drive gear retainer (4).
2. Remove three capscrews (1), washers (2), drive gear retainer (4), and shim gasket(s) (5) from geared hub (6).
3. Install drive gear retainer (4) in vise with inserts and remove seal (7). Discard seal (7).

**b. Installation**

1. Using driver handle and input seal installer, install seal (7) in drive gear retainer (4). Ensure radius on outer diameter of seal (7) faces toward inside of geared hub (6).
2. Install shim gasket(s) (5) and drive gear retainer (4) to geared hub (6) with three washers (2) and capscrews (1). Tighten capscrews (1) to 38 lb-ft (52 N.m).
3. Install vent line bracket (3) to drive gear retainer (4) with washer (2) and capscrew (1). Tighten capscrew (1) to 38 lb-ft (52 N.m).
4. Coat lip of seal (7) with lubricating oil.

## 6-12. GEARED HUB INPUT SEAL REPLACEMENT (Cont'd)



FOLLOW-ON TASK: Install halfshaft (para. 6-9).

## 6-13. GEARED HUB SPINDLE SEAL REPLACEMENT

This task covers:

### a. Removal

### b. Installation

#### INITIAL SETUP

##### Tools

General mechanic's tool kit:  
automotive (Appendix B, Item 1)

##### Special Tools

Wrench (Appendix B, Item 127)  
Installer (Appendix B, Item 128)  
Driver handle (Appendix B, Item 75)

##### Materials/Parts

Key washer (Appendix G, Item 65)  
Plain encased seal (Appendix G, Item 291)  
Grease (Appendix C, Item 22)  
Sealer (Appendix C, Item 39)  
Lubricating oil (Appendix C, Item 29)  
Sealing compound (Appendix C, Item 45)

##### Manual References

TM 9-2320-280-10  
TM 9-2320-280-24P

##### Equipment Condition

Wheel removed (para. 8-3).

##### General Safety Instructions

Ensure locktab on key washer is bent completely into slot on retaining nut.

### a. Removal

#### **NOTE**

Have drainage container ready to catch oil.

1. Remove drainplug (2) from geared hub (1) and drain geared hub (1). Install drainplug (2) in geared hub (1). Tighten drainplug (2) to 8-13 lb-ft (11-18 N•m).
2. Remove four capscrews (5), washers (4), and steering arm cover (3) from geared hub (1).

#### **NOTE**

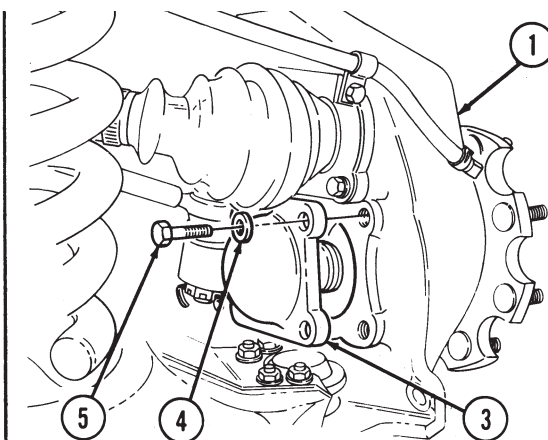
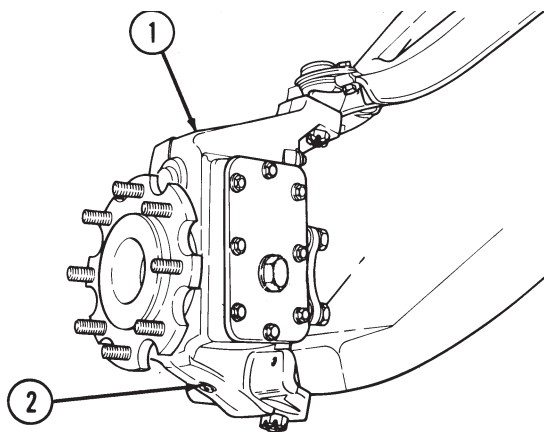
For new configuration, two locktabs on key washer must be bent away from retaining nut for removal.

3. Bend locktab on key washer (13) away from retaining nut (14).

#### **NOTE**

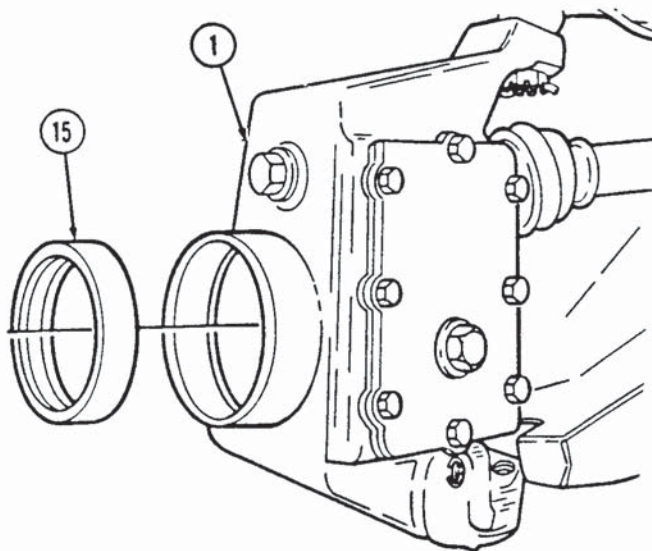
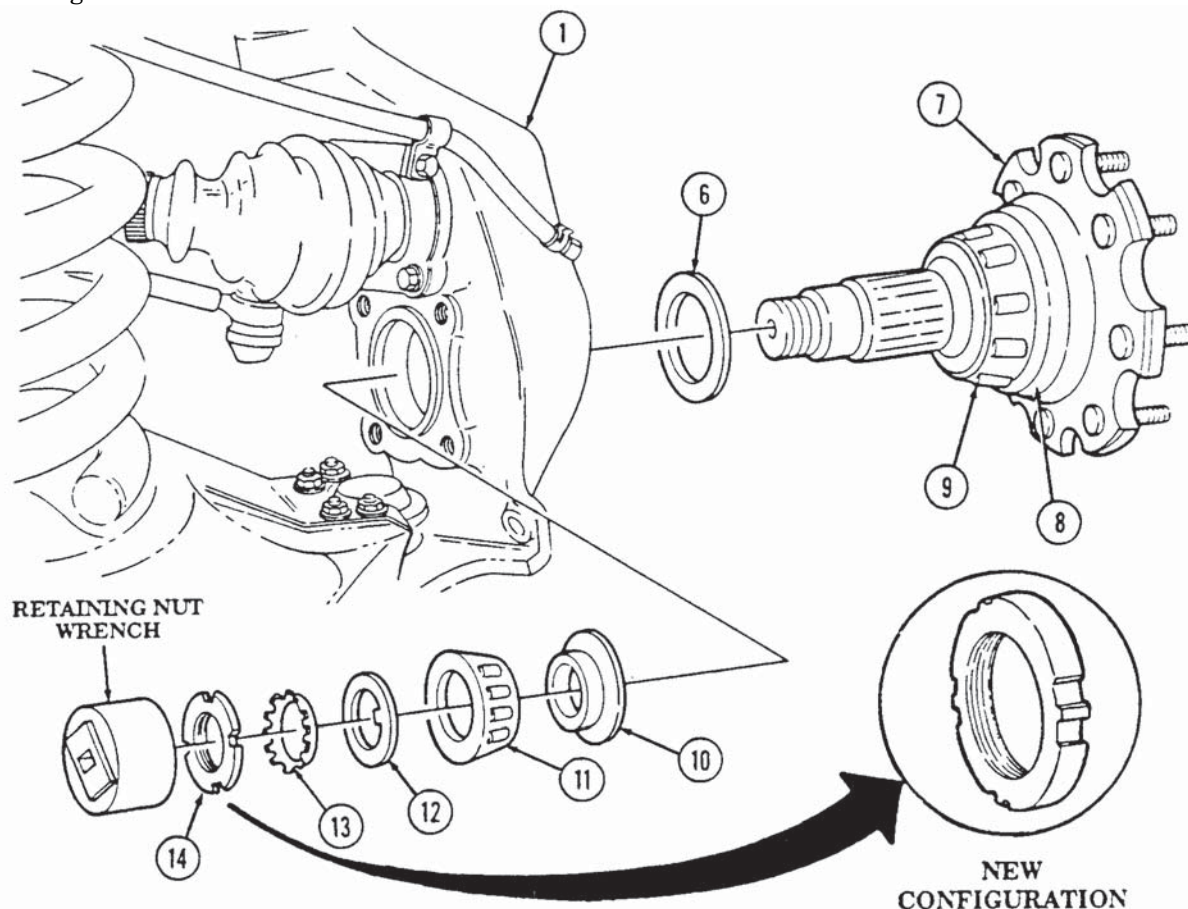
If four-slotted retaining nut TN-07 is present, it is recommended to replace it with eight-slotted retaining nut 12342680.

4. Using retaining nut wrench, remove retaining nut (14), key washer (13), and keyed washer (12) from spindle (7). Discard key washer (13).



### 6-13. GEARED HUB SPINDLE SEAL REPLACEMENT (Cont'd)

5. Remove spindle (7), spacer (6), bearing(11), and spacer (10) from geared hub (1).
6. Remove spindle seal (15) from geared hub (1). Discard spindle seal (15).
7. Inspect spindle (7) for rough or corroded sealing surface (8). Replace geared hub (1) (para. 6-11) if spindle (7) is damaged.
8. Inspect bearings (9) and (11) for damage. Replace geared hub (1) (para. 6-11) if bearing (9) or (11) is damaged.



## 6-13. GEARED HUB SPINDLE SEAL REPLACEMENT (Cont'd)

### b. Installation

1. Using driver handle and spindle seal installer, install spindle seal (1) in geared hub (2).
2. Coat spindle seal (1) with lubricating oil.
3. Install spacer (3) and spindle (4) in geared hub (2).
4. Apply grease to face of retaining nut (9).

#### NOTE

- If four-slotted retaining nut TN-07 is present, it is recommended to replace it with eight-slotted retaining nut 12342680.
- Ensure lip of spacer faces the bearing for a proper fit.

5. Install spacer (5), bearing (6), keyed washer (7), key washer (8), and retaining nut (9) on spindle (4).
6. Using retaining nut wrench, tighten retaining nut (9) to 35-45 lb-ft (47-61 N•m).
7. Rotate spindle (4) five full rotations clockwise and five full rotations counter clockwise to properly seat bearings.
8. Loosen retaining nut (9) until it is finger tight, then retighten nut to 23-27 lb-ft (31-37 N•m).

#### WARNING

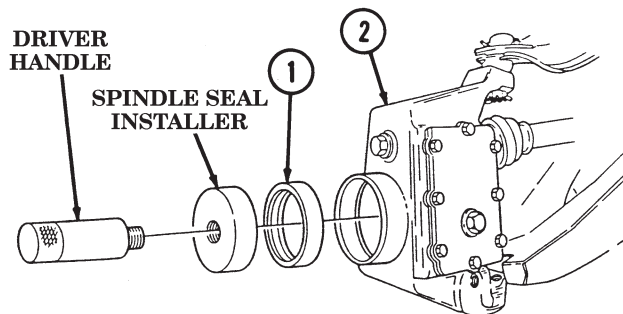
Ensure locktab on key washer is bent completely into slot on retaining nut. Eight-slotted retaining nut provides additional security by enabling two locktabs on key washer to be bent into slots on retaining nut. Failure to do this may cause injury to personnel or damage to equipment.

#### NOTE

- For new configuration, two locktabs on key washer must be bent into slots on retaining nut.
  - It may be necessary to slightly loosen or tighten retaining nut to gain proper alignment with locktabs.
9. Determine which locktab (10) on key washer (8) aligns with slot (11) in retaining nut (9). Bend locktab (10) into slot (11) on retaining nut (9).

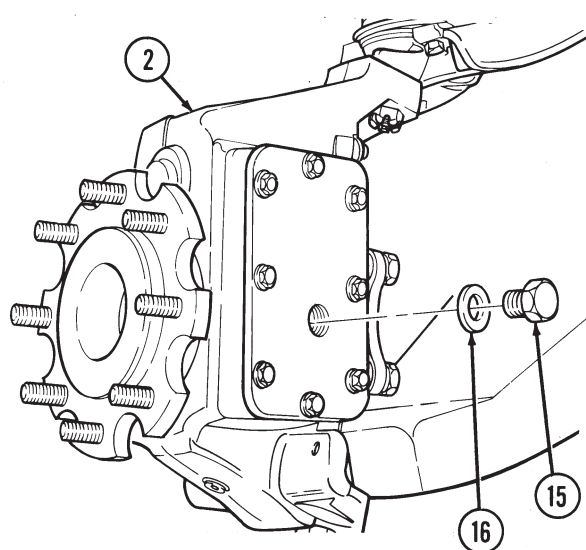
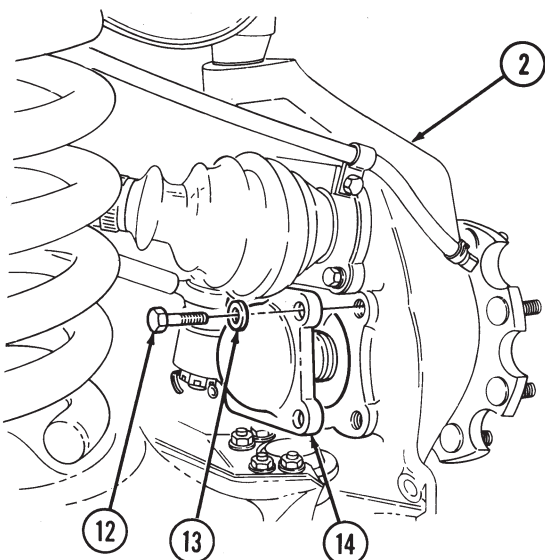
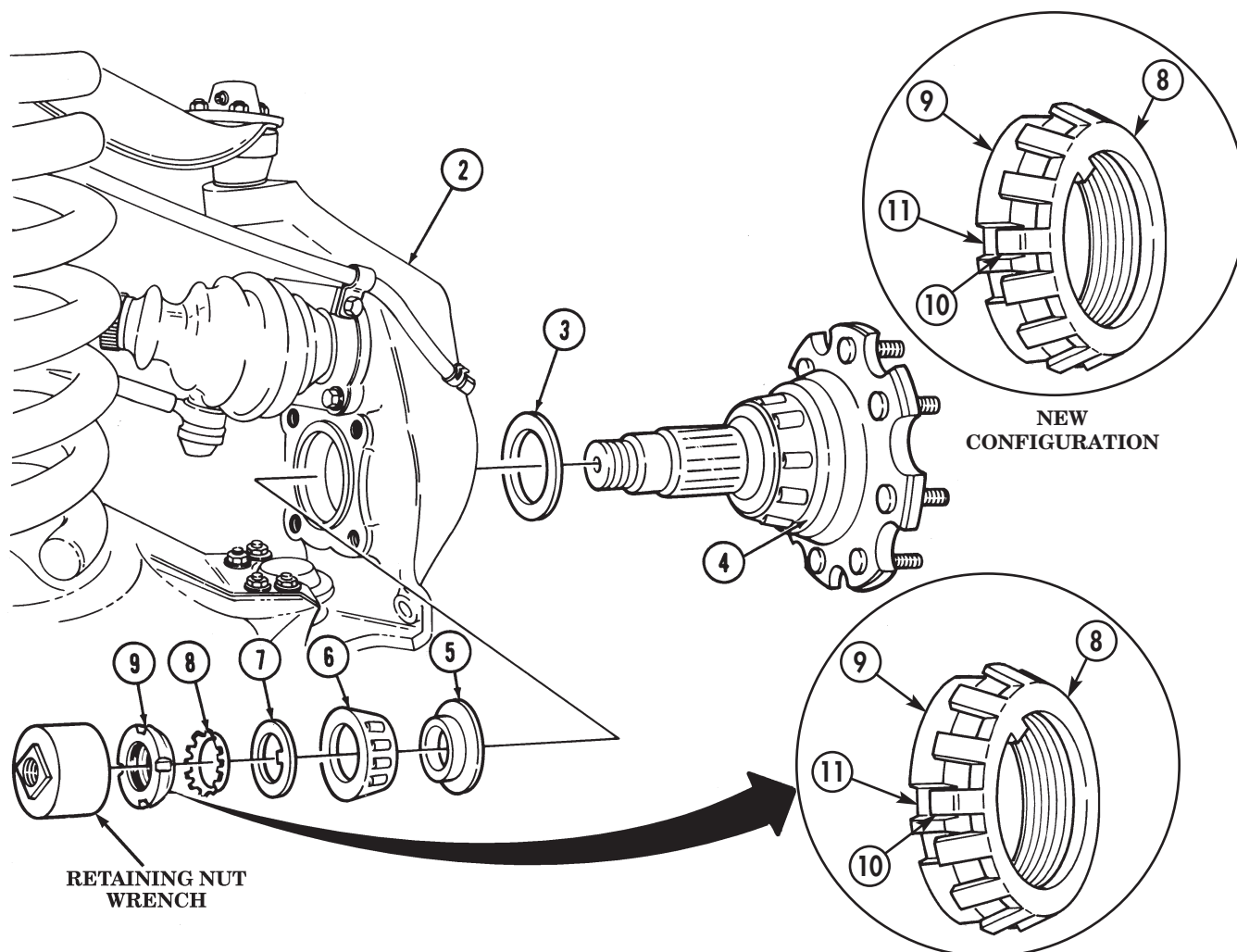
#### NOTE

- Immediately install steering arm cover after application of sealant.
10. Clean sealing surfaces on geared hub (2) and steering arm cover (14). Apply anaerobic sealant to steering arm cover (14) and install steering arm cover (14) on geared hub (2).
  11. Apply sealing compound to threads of capscrews (12) and install steering arm cover (14) on geared hub (2) with four washers (13) and capscrews (12). Tighten capscrews (12) to 65 lb-ft (88 N•m).
  12. Remove fill plug (15) and washer (16) from geared hub (2).
  13. Fill geared hub (2) to proper oil level (para. 2-11).
  14. Install washer (16) and fill plug (15) on geared hub (2). Tighten fill plug (15) to 8-13 lb-ft (11-18 N•m).





# 6-13. GEARED HUB SPINDLE SEAL REPLACEMENT (Cont'd)



FOLLOW-ON TASK: Install wheel (para. 8-3).

## 6-14. GEARED HUB SPINDLE BEARING ADJUSTMENT

This task covers:

### Adjustment

#### INITIAL SETUP:

##### Tools

General mechanic's tool kit:  
automotive (Appendix B, Item 1)

##### Special Tools

Wrench (Appendix B, Item 127)

##### Materials/Parts

Key washer (Appendix G, Item 65)  
Sealer (Appendix C, Item 39)  
Sealing compound (Appendix C, Item 45)  
Grease (Appendix C, Item 22)

##### Manual References

TM 9-2320-280-10  
TM 9-2320-280-24P

##### Equipment Condition

Wheel removed (para. 8-3).

##### General Safety Instructions

Ensure locktab on key washer is bent completely into slot on retaining nut.

### Adjustment

#### **NOTE**

Have drainage container ready to catch oil.

1. Remove drainplug (4), and drain geared hub (1). Install drainplug (4) into geared hub (1). Tighten drainplug (4) to 8-13 lb-ft (11-18 N•m).
2. Remove four capscrews (7), washers (6), and steering arm cover (5) from geared hub (1).

#### **NOTE**

For new configuration, two locktabs must be bent away from retaining nut for removal.

3. Bend locktab (12) on key washer (9) away from retaining nut (10).
4. Using retaining nut wrench, remove retaining nut (10) and key washer (9) from spindle (8). Discard key washer (9).

#### **NOTE**

If four-slotted retaining nut TN-07 is present, it is recommended to replace it with eight-slotted retaining nut 12342680.

5. Apply grease to face of retaining nut (10) and install key washer (9) and retaining nut (10) on spindle (8).
6. Using retaining nut wrench, tighten retaining nut (10) to 35-45 lb-ft (47-61 N•m).
7. Rotate spindle (8) five full rotations clockwise and five full rotations counter clockwise to properly seat bearings.
8. Loosen retaining nut (10) until it is finger tight, then retighten nut to 23-27 lb-ft (31-37 N•m).

#### **WARNING**

Ensure locktab on key washer is bent completely into slot on retaining nut. Eight-slotted retaining nut provides additional security by enabling two locktabs on key washer to be bent into slots on retaining nut. Failure to do this may cause injury to personnel or damage to equipment.

#### **NOTE**

- For new configuration, two locktabs must be bent into slots on retaining nut.
  - It may be necessary to slightly loosen or tighten retaining nut to gain proper alignment with locktabs.
9. Determine which locktab (12) on key washer (9) aligns with slot (11) in retaining nut (10). Bend locktab (12) into slot (11) on retaining nut (10).

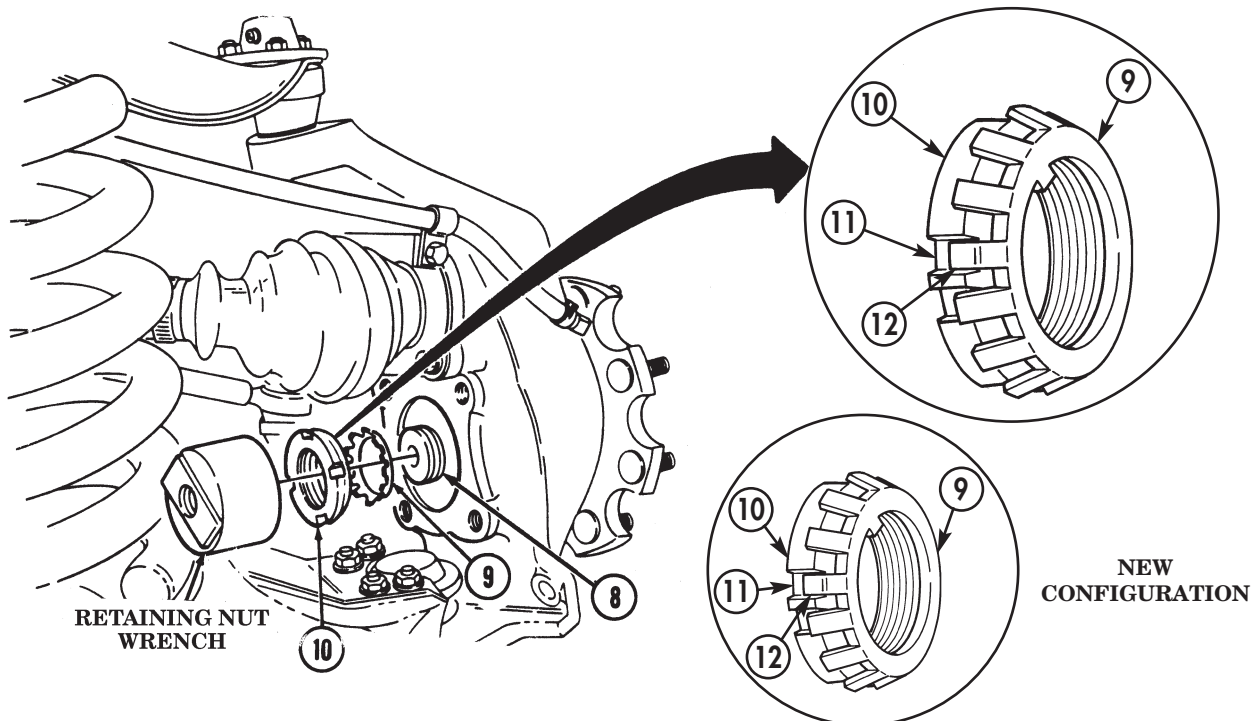
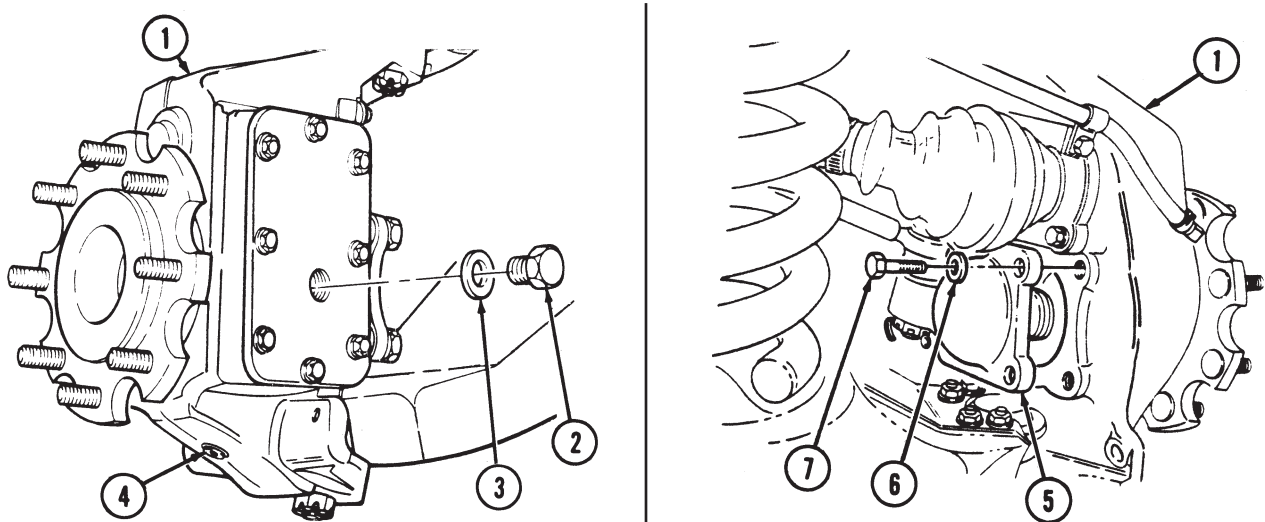


## 6-14. GEARED HUB SPINDLE BEARING ADJUSTMENT (Cont'd)

### NOTE

Immediately install steering arm cover after application of sealant.

10. Clean sealing surfaces on geared hub (1) and steering arm cover (5). Apply anaerobic sealant to steering arm cover (5) and install steering arm cover (5) on geared hub (1).
11. Apply sealing compound to threads of capscrew (7) and install steering arm cover (5) on geared hub (1) with four washers (6) and capscrews (7). Tighten capscrews (7) to 65 lb-ft (88 N·m).
12. Remove fill plug (2) and washer (3) from geared hub (1).
13. Fill geared hub (1) to proper oil level (TM 9-2320-280-10).
14. Install washer (3) and fill plug (2) on geared hub (1). Tighten fill plug (2) to 8-13 lb-ft (11-18 N·m).



FOLLOW-ON TASK: Install wheel (para. 8-3.)