

## REAR SHAFT REMOVE / INSTALL

### 6-8. REAR AXLE SHAFT REPLACEMENT (ALL EXCEPT M1009).

This task covers:

a. Removal

b. Installation

#### INITIAL SETUP:

##### Equipment Condition

- Wheel to be serviced, raised and supported by jack stand.

##### Materials/Parts

- One gasket

##### Tools/Test Equipment

- Torque wrench

#### a. REMOVAL

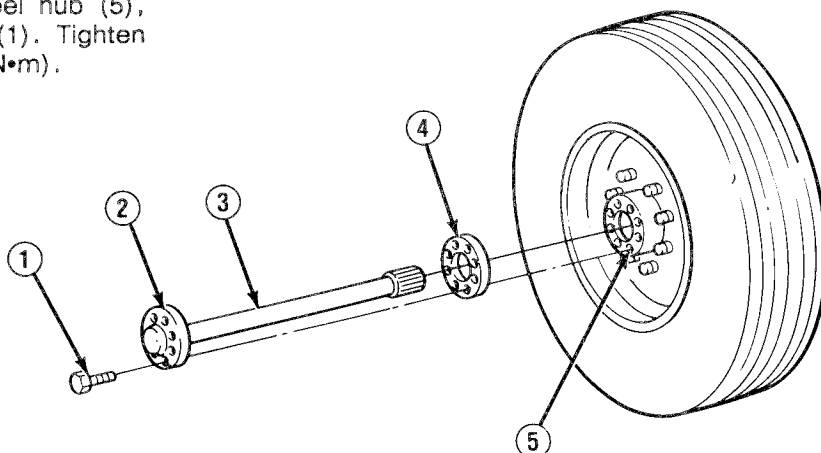
#### NOTE

**Rear axle shafts (3) are factory-installed with RTV sealant instead of gasket (4). Use gasket instead of RTV sealant for installation.**

1. Remove 8 bolts (1). Remove rear axle shaft (3) and gasket (4), if present, from wheel hub (5). Discard gasket.
2. Clean any sealant from bolts (1) and mating surfaces of rear axle shaft flange (2) and exterior of wheel hub (5).

#### b. INSTALLATION

1. Position rear axle shaft (3) through new gasket (4) and wheel hub (5), and install with 8 bolts (1). Tighten bolts to 115 lb.-ft. (156 N•m).



#### FOLLOW-ON TASKS:

- Remove jack stand and lower truck.

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DIFF COVER REMOVE / INSTALL
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**6-8.2. SERVICE REAR DIFFERENTIAL (ALL EXCEPT M1009, M1028A2, AND M1028A3).**

This task covers: a. Service

**INITIAL SETUP:***Materials/Parts*

- One differential cover gasket
- Sealant (Item 41, Appendix C)

*Tools/Test Equipment*

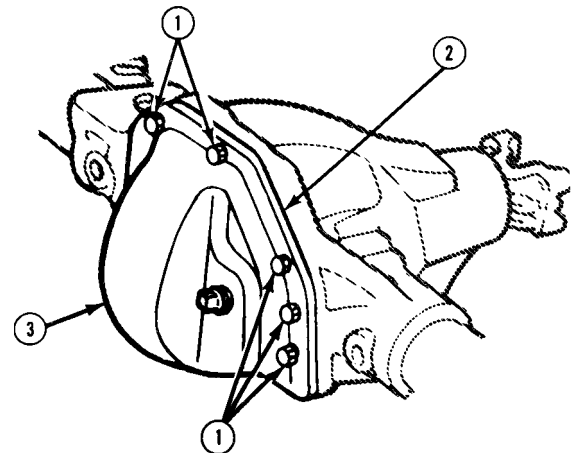
- Torque wrench

a. SERVICE
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**NOTE**

**When removing differential cover bolts, location of clips should be noted.**

1. Place a suitable container under housing.
2. Remove 14 bolts (1) at differential cover (3) .
3. Move vent tube bracket, brake line and bracket, and proportioning valve lever out of the way.
4. Remove differential cover (3) and allow all lubricating oil to drain.

**NOTE**

**Some differentials will use a gasket (2), and some will use RTV sealant.**

5. Remove gasket (2), if present, and discard.
6. If RTV sealant was utilized, remove all old RTV sealant from differential housing.

**NOTE**

**Ensure that differential cover (3) is clean.**

7. Apply a bead of RTV sealant to differential housing or install new gasket (2) and differential cover (3) with 14 bolts (1).
8. Tighten 14 bolts (1) to 35 lb.-ft (47 N•m).
9. Fill differential with lubricating oil. (See LO 9-2320-289-12)

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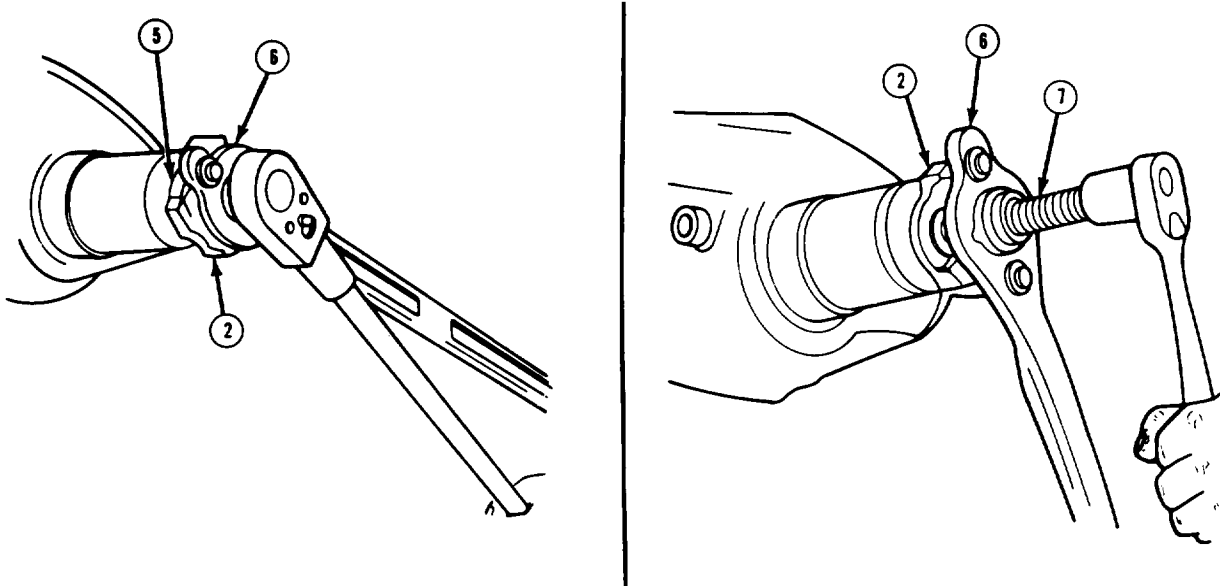


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## 6-10. FRONT AND REAR AXLE DRIVE PINION OIL SEAL AND PINION FLANGE MAINTENANCE (Con't).

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4. Remove oil seal (5) from housing bore and discard.




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### b. INSPECTION

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1. Inspect flange oil seal contact surface, bearing contact surface, drive splines, and universal joint mount. Replace flange if damaged.
2. If flange deflector requires replacement, remove by tapping from flange. Clean stake points, install new deflector, and stake deflector at 3 new equally spaced positions.

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### c. INSTALLATION

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1. Lubricate cavity between oil seal (5) lips with molybdenum grease and install new oil seal squarely in bore until flush with housing,
2. Install flange (2). Install washer (1) and original flange nut (4). Install flange holder (6) and tighten flange nut until same number of threads on drive pinion (3) stem are exposed as recorded during removal and scribe marks are alined. Remove flange nut and discard. Install new flange nut until snug against washer. Remove flange holder.

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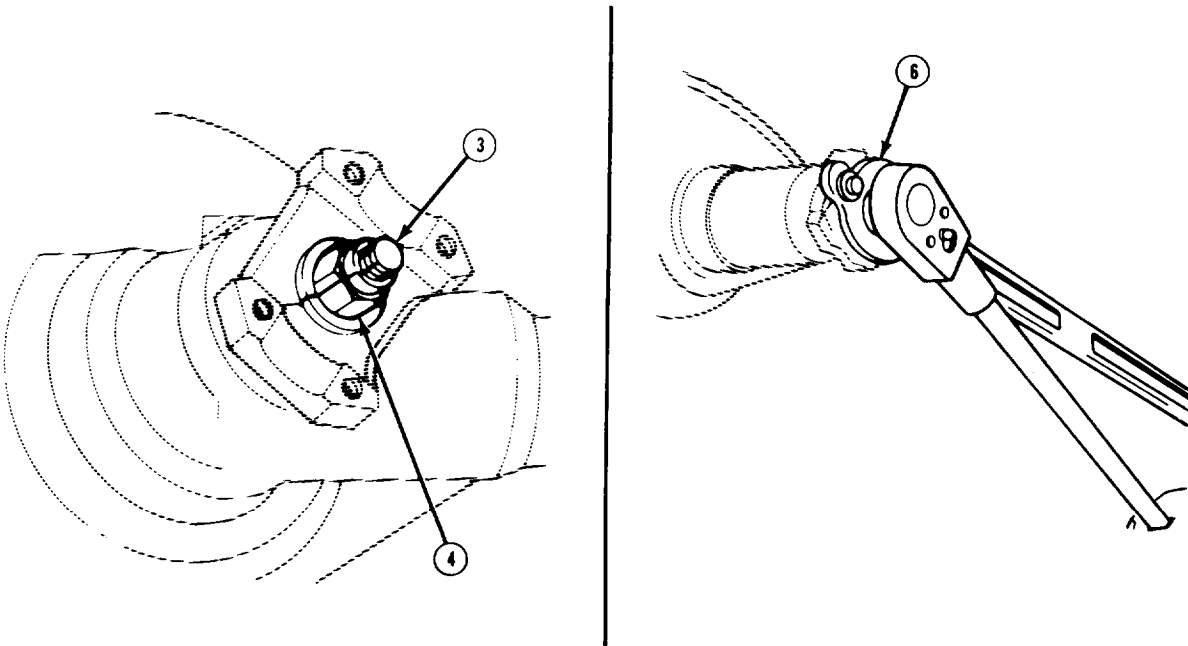
6-10. FRONT AND REAR AXLE DRIVE PINION OIL SEAL AND PINION FLANGE MAINTENANCE (Con't).

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CAUTION

Care should be taken to ensure that original rotating torque is not exceeded by more than 5 lb.-in. (0.6 N.m). If working on M1009, exceeding torque specifications may compress spacer on drive pinion (3) shaft too far and require replacement of spacer.

3. Measure torque required to turn drive pinion (3) and compare with torque recorded during removal, Install flange holder (6) and tighten flange nut (4) in small increments until rotating torque exceeds original by 1–5 lb.-in. (0. 1-0.6 N.m). Remove flange holder.



FOLLOW-ON TASKS:

- Check differential lubricating oil level and fill as required, (See LO 9-2320-289-12)
- Connect propeller shaft to axle. (See TM 9-2320-289-20)
- Remove jack stands and lower truck.



6-13. REAR AXLE ASSEMBLY REPLACEMENT (Con't).

a. REMOVAL

1. Slide clamp up rear axle vent hose (8) and disconnect rear axle vent hose from rear axle differential (7).
2. Place suitable jack under rear axle differential (7).

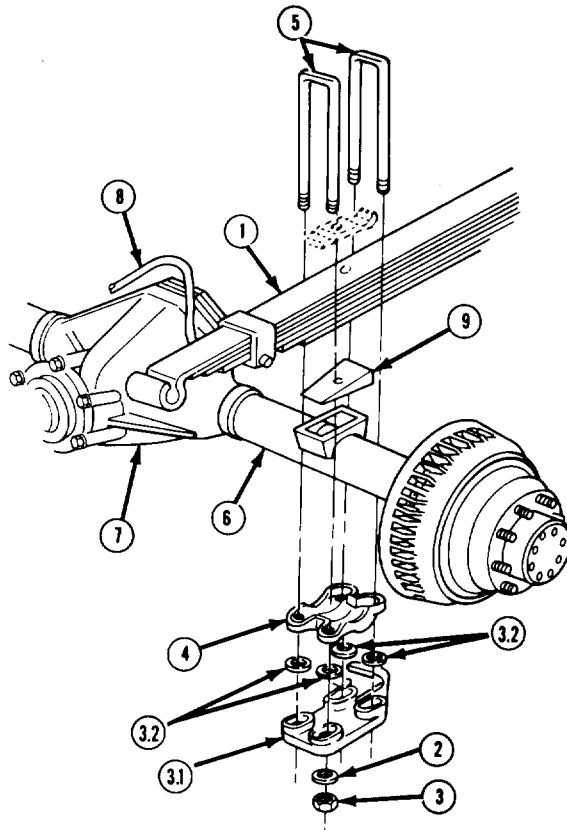
**WARNING**

Rear axle assembly (6) is heavy. Use extreme caution, provide support, and use assistance during removal. Failure to follow this warning may result in serious injury to personnel or damage to rear axle assembly.

**NOTE**

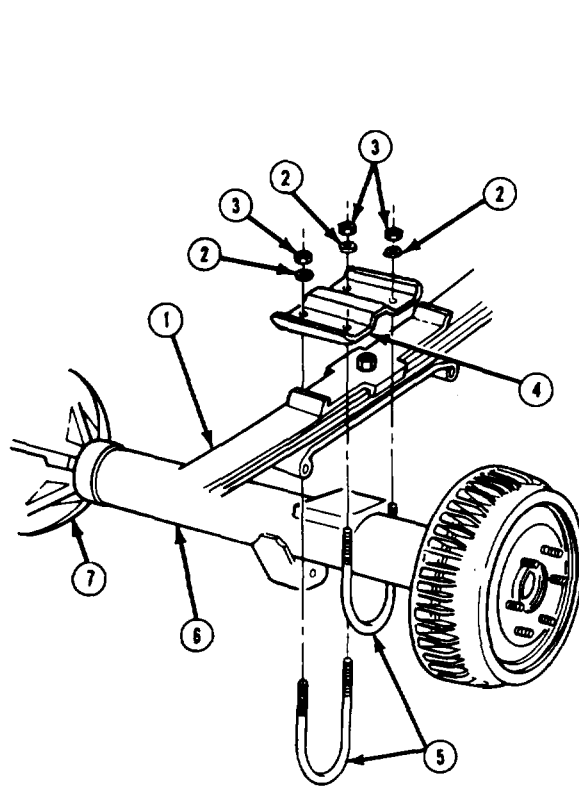
For M1028A2 and M1028A3, skip step 3 and perform step 4.

3. Remove 4 nuts (3), washers (2), 2 "U" bolts (5), and anchor plate (4) at each spring assembly (1). Lower rear axle assembly (6) and remove. If present, remove 2 shims (9) from axle housing.
4. Remove 4 nuts (3), washers (2), adapter (3.1), 4 washers (3.2), 2 "U" bolts (5), and anchor plate (4) at each spring assembly (1). Lower rear axle assembly (6) and remove. If present, remove 2 shims (9) from axle housing.

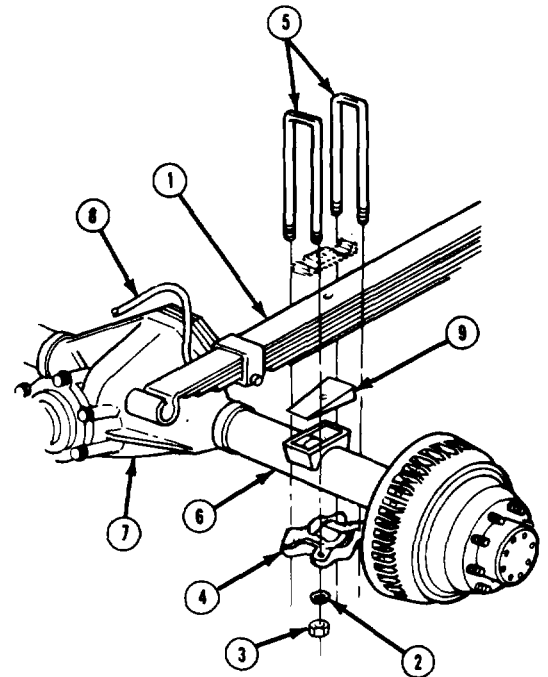


M1028A2 and M1028A3

6-13. REAR AXLE ASSEMBLY REPLACEMENT (Con't).



M1009



All Except M1009, M1028A2, and M1028A3

b. INSTALLATION

WARNING

Rear axle assembly (6) is heavy. Use extreme caution, provide support, and use assistance during installation. Failure to follow this warning may result in serious injury to personnel or damage to rear axle assembly,

NOTE

For M1028A2 and M1028A3, skip steps 1 and 2 and perform steps 2.1 and 2.2.

- 1 . Position rear axle assembly (6) on suitable jack and raise into position. If removed, install 2 shims (9) on axle housing with thinner edges facing front. Aline holes in shims with holes in axle housing and spring assembly (1) center bolt.
- 2 . Loosely install anchor plate (4) at each spring assembly with with 2 " U" bolts (5), 4 washers (2), and nuts (3). Install all nuts to uniform engagement on "U" bolts to retain and position anchor plate.

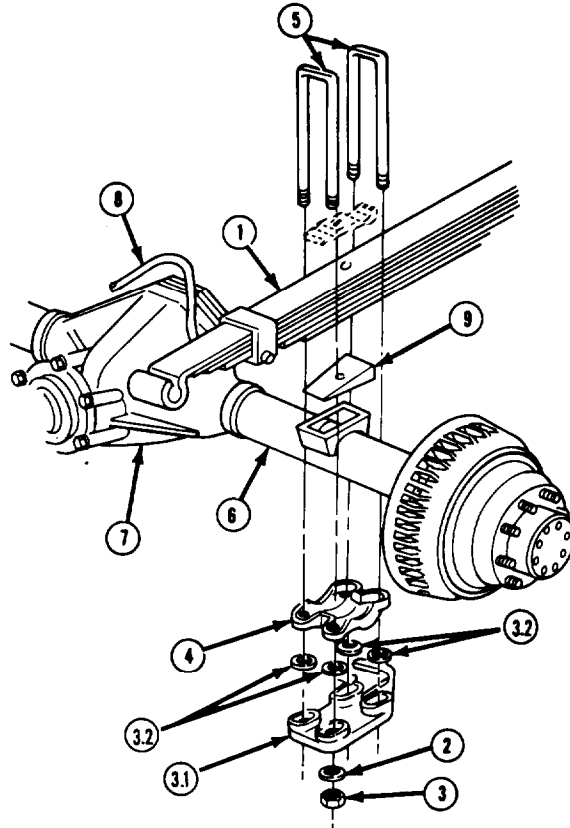


6-13. REAR AXLE ASSEMBLY REPLACEMENT (Con't).

NOTE

Adapters (3.1) are mismarked on casting as to left-hand and right-hand. Install adapters as shown, with ribs up and curved arm to rear facing inboard.

- 2.1. Position rear axle assembly (6) on suitable jack and raise into position. If removed, install 2 shims (9) on axle housing with thinner edges facing front. Aline holes in shims with holes in axle housing and spring assembly (1) center bolt.
- 2.2. Loosely install anchor plate (4) and adapter (3, 1 ) at each spring assembly with 2 "U" bolts (5), 4 washers (3.2), washers (2), and nuts (3). Install all nuts to uniform engagement on "U" bolts to retain and position anchor plate and adapter,



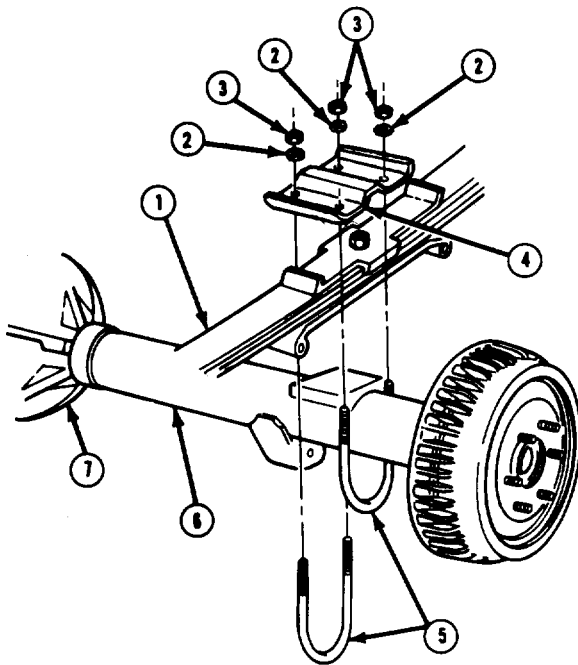
M1028A2 and M1028A3

NOTE

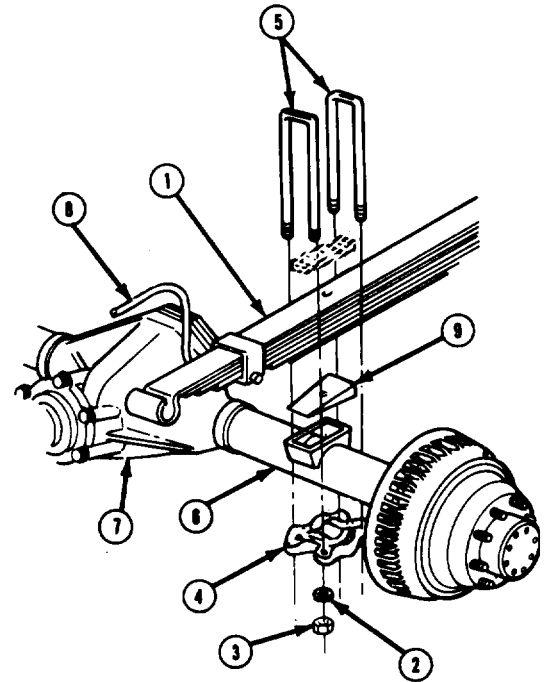
All nuts (3) must be tightened evenly to ensure that "U" bolts (5) and spring assemblies (1) seat properly,

3. Partially tighten all nuts (3) in diagonal sequence to 25 lb.-ft. (34 N.m). Fully tighten nuts on M1009 in same diagonal sequence to 145 lb.-ft. (197 N.m). On M1028A2, tighten all nuts in same diagonal sequence to 150 lb.-ft. (180 N.m). On all others, tighten all nuts in same diagonal sequence to 170 lb.-ft. (231 N.m).
4. Remove jack from rear axle differential (7),
5. Connect rear axle vent hose (8) to rear axle differential (7) and install clamp,

6-13. REAR AXLE ASSEMBLY REPLACEMENT (Con't).



M1009



All Except M1009, M1028A2, and M1028A3

FOLLOW-ON TASKS:

- Install rear stabilizer bar (M1028A2 and M1028A3). (See TM 9-2320-289-20)
- Connect rear shock absorbers to axle. (See TM 9-2320-289-20)
- Connect proportioning valve lever to differential housing. (See TM 9-2320-289-20)
- Connect rear brake lines to wheel cylinders and differential housing. (See TM 9-2320-289-20)
- Connect parking brake cable at equalizer. (See TM 9-2320-289-20)
- Connect rear propeller shaft to rear axle differential. (See TM 9-2320-289-20)
- Install rear wheels. (See TM 9-2320-289-20)
- Remove jack stands and lower truck.
- Road test truck and check torque of "U" bolt nuts.

GEARS AND CARRIER

6-15. REAR AXLE DIFFERENTIAL MAINTENANCE (ALL EXCEPT M1009).

This task covers:

a. Removal	d. Assembly
b. Disassembly	e. Installation
c. Cleaning and Inspection	

INITIAL SETUP:

Equipment Condition

- Rear axle shafts removed.  
(See TM 9-2320-289-20)

*Tools/Test Equipment*

- Wrench nut (differential), J-24429
- Dial indicator
- Puller kit
- Spring tester
- Torque wrench

*Manual References*

- TM 9-214

*General Safety Instructions*

- Dry cleaning solvent is flammable and must not be used near open flame. Use only in a well-ventilated area.
- Compressed air used for cleaning purposes should never exceed 30 psi (207 kPa).
- Tightly hold differential case assembly together to absorb spring pressure during removal and installation of ring gear bolts.

NOTE

When removing differential cover bolts, location of clips Should be noted.

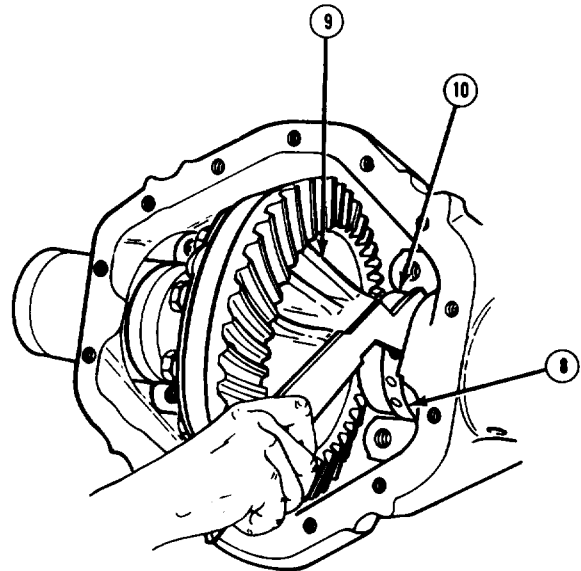
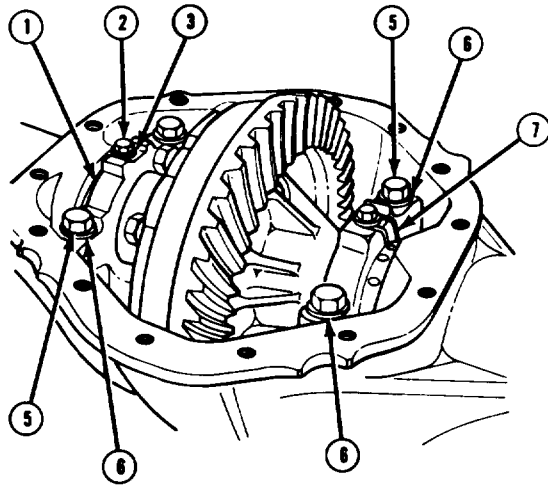
1. Place a suitable container under housing. Remove 14 bolts at differential cover and move vent tube bracket, brake line and bracket, and proportioning valve lever out of the way. Remove differential cover and allow all lubricating oil to drain. Remove gasket, if present, and discard.

NOTE

Ensure that bearing caps (1) are marked for installation in same position.

2. Remove bolt (2), washer (3), and adjusting nut lock (7) from each bearing cap (1), Remove 4 bolts (5), lockwashers (6), and 2 bearing caps. Discard lockwashers.
3. Loosen 2 adjusting nuts (8). Remove differential case (9) assembly from housing. Remove 2 bearing cups (10) from differential case assembly side bearings (11) and tag for installation.

6-15. REAR AXLE DIFFERENTIAL MAINTENANCE (ALL EXCEPT M1009) (Con't).



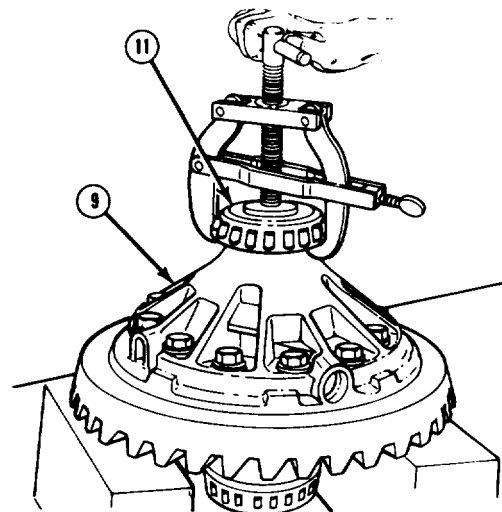
b. DISASSEMBLY

1. Place differential case (9) assembly in vise.

CAUTION

Ensure that puller fingers are installed into notches of differential case (9) assembly so that only inner race is contacted. Failure to follow this caution may result in damage to side bearings (11).

2. Tag side bearings (11) for assembly on their original side. Install bearing puller on side bearing and remove side bearing. Repeat for remaining side bearing.



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6-15. REAR AXLE DIFFERENTIAL MAINTENANCE (ALL EXCEPT M1009) (Con't).

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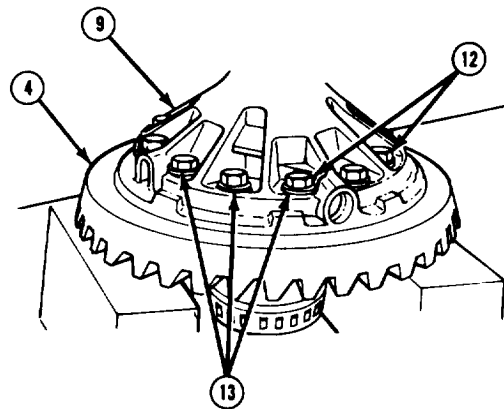
WARNING

Tightly hold differential case (9) assembly together to absorb spring pressure as last ring gear bolts (12) are removed. Failure to follow this warning may result in injury to personnel or damage to differential case assembly components.

NOTE

Shop rags placed around vise will help protect ring gear (4) teeth from damage should ring gear fall during disassembly.

3. Scribe a line on differential case (9) assembly and ring gear (4) to ensure assembly in same position. Remove 12 ring gear bolts (12) and lockwashers (13). Using a soft-faced hammer, tap ring gear loose from differential case assembly. Remove differential case assembly from vise and remove ring gear. Discard lockwashers.
4. Separate differential case (9) assembly halves.



NOTE

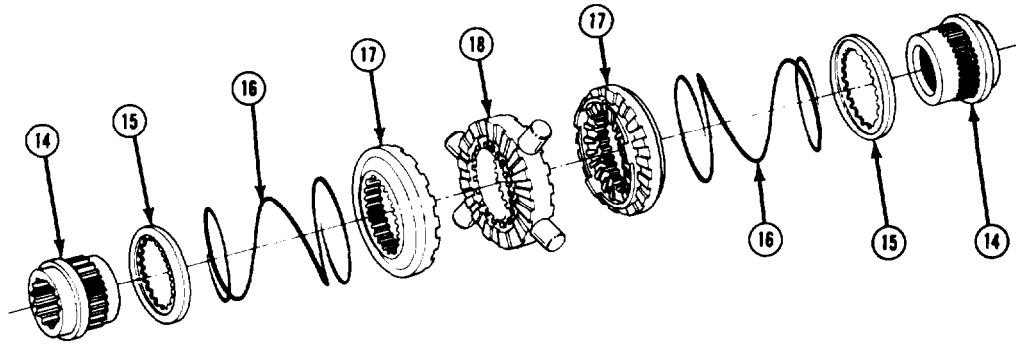
Ensure that differential case (9) assembly internal components are kept separated so that they may be assembled in same position.

5. From 1 differential case (9) half remove side gear (14), retainer (15), spring (16), driven clutch (17), and spider assembly (18). From other differential case half remove driven clutch, spring, retainer, and side gear.

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 6-15. REAR AXLE DIFFERENTIAL MAINTENANCE (ALL EXCEPT M1009) (Con't).
 

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 c. CLEANING AND INSPECTION
 

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 WARNING
 

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- Dry cleaning solvent P-D-680 is toxic and flammable. Always wear protective goggles and gloves and use only in a well-ventilated area. Avoid contact with skin, eyes, and clothes and DO NOT breathe vapors. DO NOT use near open flame or excessive heat. The solvent's flash point is 100°F-138°F (38°C-59°C). If you become dizzy while using cleaning solvent, immediately get fresh air and medical help. If solvent contacts eyes, immediately wash your eyes with water and get medical aid.

⚠ Compressed air used for cleaning purposes should never exceed 30 psi (207 kPa). Use only effective chip guarding and personnel protective equipment (goggles/shield, gloves, etc.). Failure to follow this warning may result in serious injury to personnel.

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 CAUTION
 

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If major components (e.g. spider assembly or driven clutch assemblies) show excessive wear or damage, the entire no-spin unit should be replaced. If any part is replaced, mating parts should also be replaced as they are probably also damaged. Failure to follow this caution may result in a recurrence of original problem.

1. Clean all components in dry cleaning solvent and dry with compressed air.
2. Clean and inspect side bearings in accordance with TM 9-214,

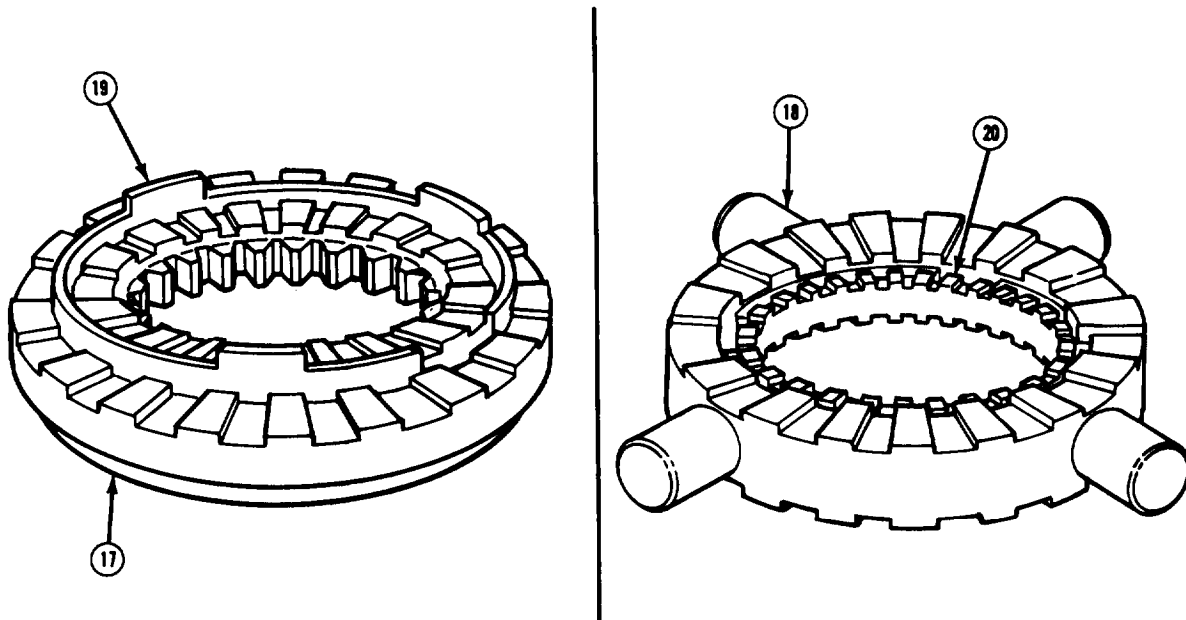
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6-15. REAR AXLE DIFFERENTIAL MAINTENANCE (ALL EXCEPT M1009) (Con't).

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3. Inspect splines on driven clutches and remove any burrs or nicks found. If driven clutch teeth are chipped, or if burrs and nicks cannot be repaired, replace driven clutch.
4. Inspect holdout ring (19) on driven clutches (17) for fractures or chipped teeth. Replace if fractured or chipped.
5. inspect teeth on spider (18) and center cam (20) for fractures or chipping. Inspect center cam to ensure that it moves freely in spider, Replace spider assembly if fractured, chipped or if center cam does not move freely.



6. Inspect side gears for damage, Replace if damaged.
7. Inspect the fit of side gear to mating axle shaft, Replace side gear if it binds in axle shaft.
8. Using a spring tester, measure each spring load at operating height. When height of spring is 0.72 in. (18.29 mm), load should be 65 lb.±6 lb. (30 kg ±3 kg). Replace springs if measurement is not within specification.
9. Inspect differential case for damage. Remove any nicks or burrs found, Replace if damaged or if nicks or burrs cannot be removed.

NOTE

If ring gear is replaced, ring gear bolts and drive pinion must also be replaced. (See paragraph 6-17)

10. inspect ring gear and ring gear bolts for damage. Replace if damaged.

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**6-15. REAR AXLE DIFFERENTIAL MAINTENANCE (ALL EXCEPT M1009) (Con't).**

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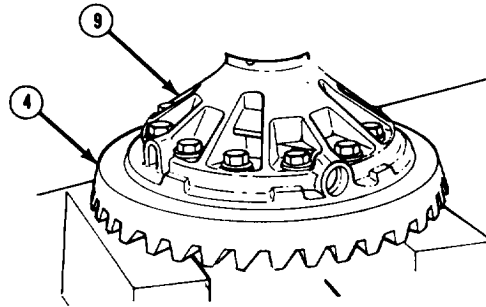
**d. ASSEMBLY**

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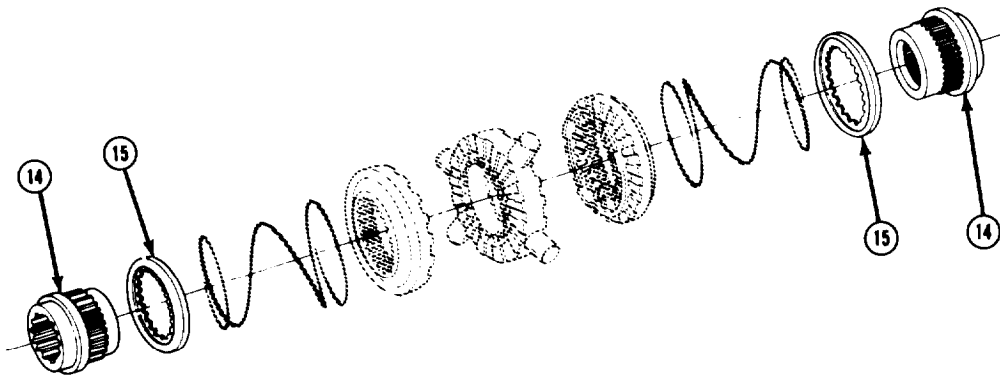
**NOTE**

Ensure that all components are lubricated with lubricating oil as they are assembled.

1. Place ring gear (4) and flanged half of differential case (9) on wooden blocks with bearing end of hub facing downward.



2. Place hub of side gear (14) into bore of differential case (9). Ensure that side gear will rotate freely. Install retainer (15) over side gear splines with retainer lip facing upwards and retainer seated against side gear shoulder.



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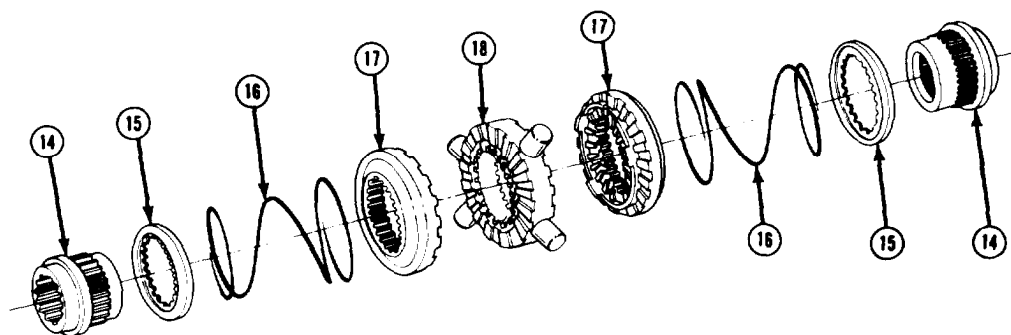


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6-15. REAR AXLE DIFFERENTIAL MAINTENANCE (ALL EXCEPT M1009) (Con't).

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3. Install spring (16) over side gear (14) spline against retainer (15) lip with smaller end of spring against retainer.
4. Install driven clutch (17) over spring (16) with teeth facing upwards.

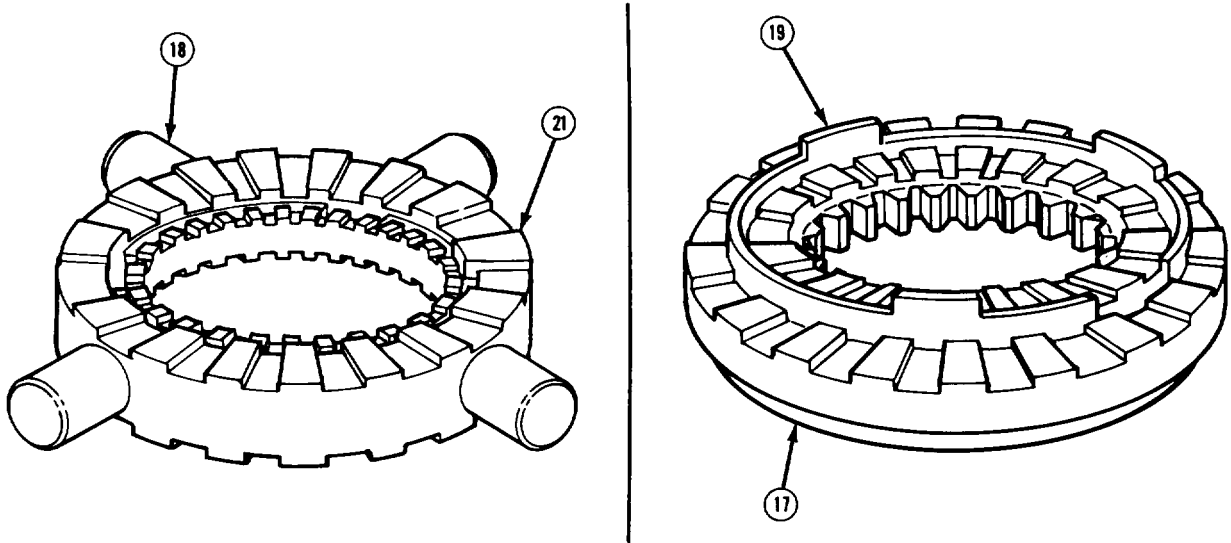


NOTE

Ensure that slot in driven clutch (17) holdout ring (19) engages long spider key (21).

5. Place spider (18) assembly over driven clutch (17),
6. Place remaining driven clutch (17) over spider (18) assembly.

6-15. REAR AXLE DIFFERENTIAL MAINTENANCE (ALL EXCEPT M1009) (Con't).



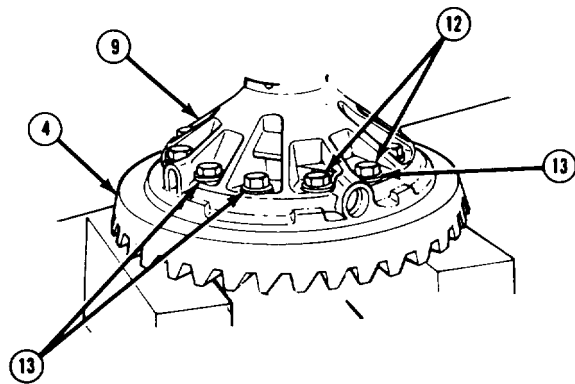
7. Assemble remaining retainer (15), spring (16), and side gear (14).

**WARNING**

Tightly hold differential case (9) assembly together to absorb spring pressure until 2 or more ring gear bolts (12) are installed. Failure to follow this warning may result in injury to personnel or damage to differential case assembly components.

**NOTE**

Ensure that ring gear (4) and differential case (9) assembly halves are assembled as marked.



8. Install remaining differential case (9) half over side gear (14) and compress springs (16). Install 12 new lockwashers (13) and ring gear bolts (12). Tighten bolts alternately to 120 lb.-ft. (163 N.m).

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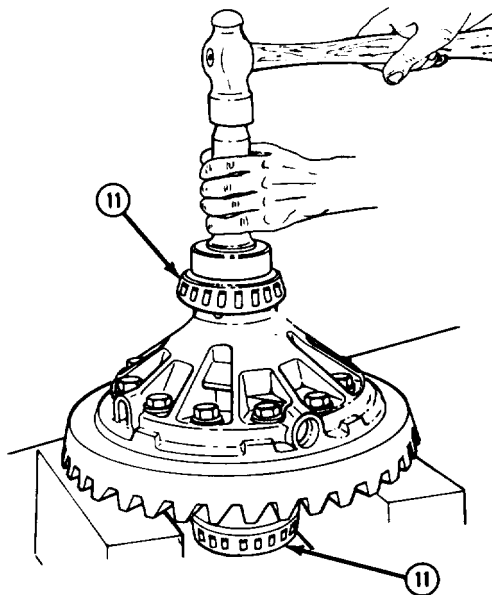
6-15. REAR AXLE DIFFERENTIAL MAINTENANCE (ALL EXCEPT M1009) (Con't).

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NOTE

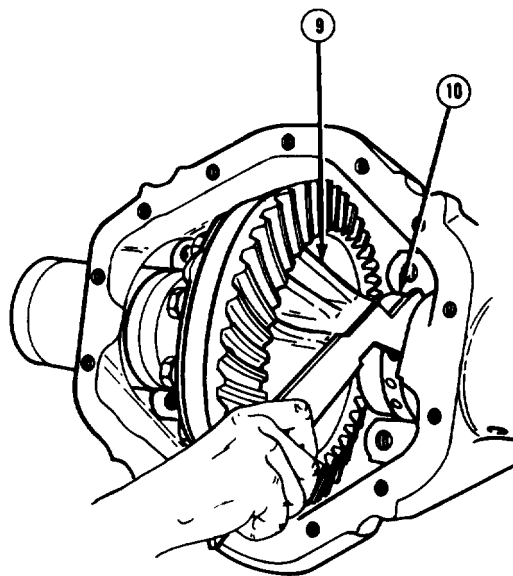
Side bearings (11 ) should rotate freely once installed.

9. Install 2 side bearings (11) as tagged.



e. INSTALLATION

1. Install 2 bearing cups (10) as tagged to side bearings (11). Install differential case (9) assembly inside housing.



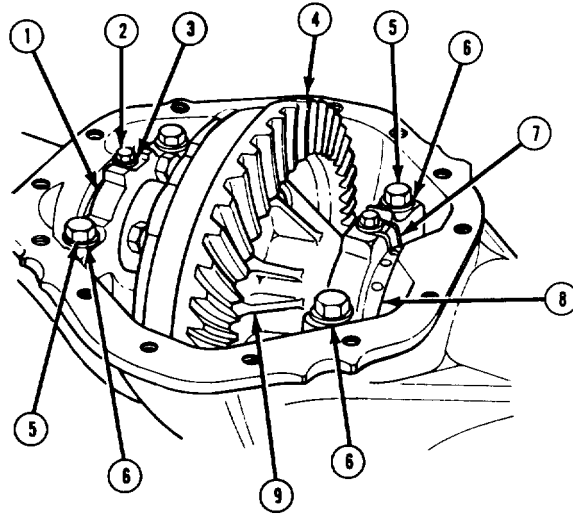
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**6-15. REAR AXLE DIFFERENTIAL MAINTENANCE (ALL EXCEPT M1009) (Con't).**


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2. Install 2 bearing caps (1) in their original positions with 4 new lockwashers (6) and bolts (5). Tighten bolts just enough to hold bearing caps in place.
3. Loosen right side adjusting nut (8) and tighten left side adjusting nut until ring gear (4) contacts drive pinion gear without binding. This is zero ("O") lash.
4. Back off left side adjusting nut (8) approximately 2 slots. Install left side adjusting nut lock (7), washer (3), and bolt (2) to left side bearing cap (1). Tighten bolt to 20 lb.-ft. (27 N.m).
5. Tighten right side adjusting nut (8) until differential case (9) assembly is forced into solid contact with left side adjusting nut, Loosen right side adjusting nut until it is free from bearing contact then retighten until contact is re-established.



6. When in contact, tighten right side adjusting nut (8) 2 slots if side bearings (11) are reused or 3 slots if side bearings are new. Install adjusting nut lock (7), washer (3), and bolt (2) to right side bearing cap (1). Tighten bolt to 20 lb.-ft. (27 N.m).
7. Tighten 4 bolts (5) to 135 lb.-ft. (183 N.m).

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6-15. REAR AXLE DIFFERENTIAL MAINTENANCE (ALL EXCEPT M1009) (Con't).

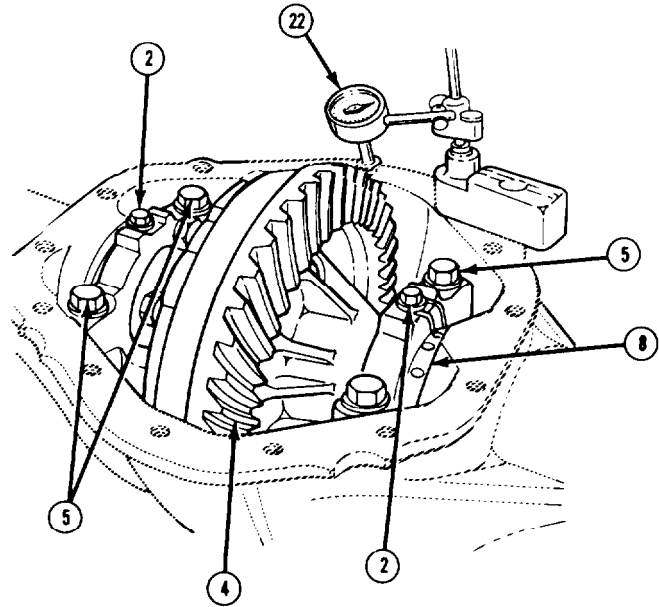
NOTE

At this point, side bearings are preloaded. If any additional adjustments are required, ensure that preload remains as established. If 1 adjusting nut (8) is loosened, the other must be tightened an equal amount to maintain this preload.

8. Mount dial indicator (22) on housing and measure backlash between ring gear (4) and drive pinion gear. Rock ring gear back and forth to measure backlash. Backlash should be between 0.003-0.012 in. (0.076-0.305 mm) with 0.005-0.008 in. (0.127-0.203 mm) preferred,

NOTE

If adjusting nut (8) requires adjustment, bolts (2 and 5) must be loosened. Once final adjustments have been made, bolts must be retightened to proper torque.



9. If backlash is more than 0.012 in. (0.305 mm), loosen right adjusting nut (8) 1 slot and tighten left adjusting nut 1 slot. If backlash is less than 0.003 in. (0.076 mm), loosen left adjusting nut 1 slot and tighten right adjusting nut 1 slot. Remove dial indicator (22) from housing.

NOTE

If ring gear (4) and drive pinion were replaced, perform steps 10-13 to check for proper gear tooth contact pattern.

10. Wipe any lubricant from housing and clean each tooth of ring gear (4).
11. Using a medium stiff brush, sparingly apply prussian blue dye to all ring gear (4) teeth. Area of drive pinion tooth contact should be visible when drive pinion is engaged by hand.

NOTE

Excessive turning of ring gear (4) is not recommended. Ring gear should be turned only enough to provide tooth contact pattern,

12. Apply load until it takes a torque of 40-50 lb.-ft, (54-68 N.m) to turn drive pinion. Turn companion flange so that ring gear (4) turns 1 full revolution, then reverse so that ring gear turns 1 full revolution in opposite direction.

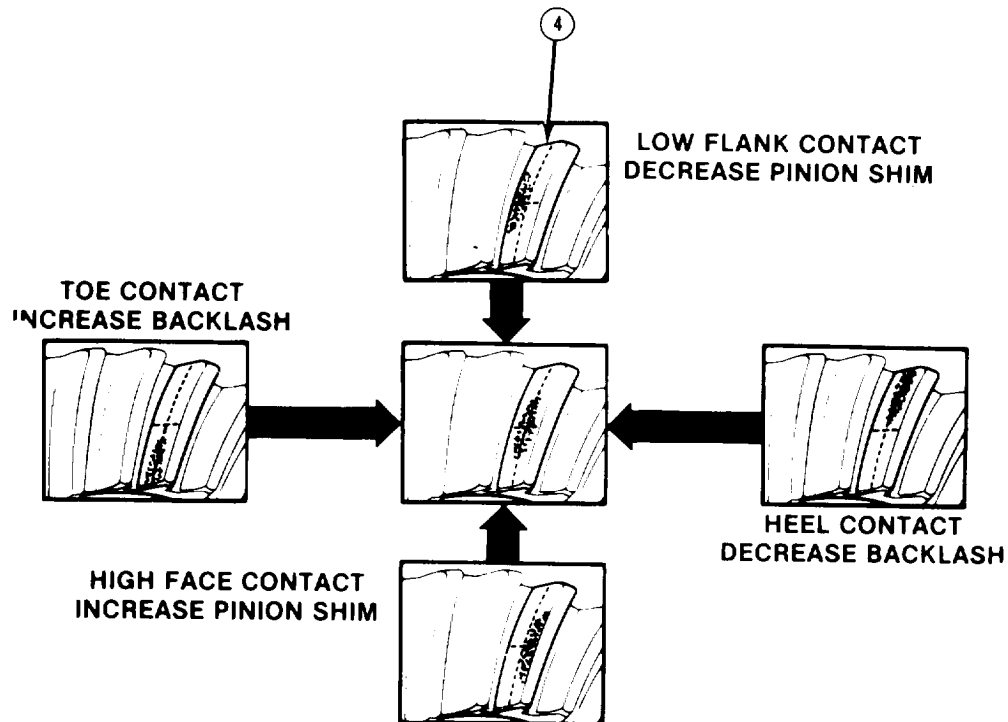
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 6-15. REAR AXLE DIFFERENTIAL MAINTENANCE (ALL EXCEPT M1009) (Con't),
 

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13. Contact pattern should be centrally located up and down on the face of the ring gear (4) teeth. Compare tooth contact pattern on ring gear with examples shown and make adjustments as indicated.



## NOTE

Ensure that differential cover and magnet are clean.

14. Carefully position vent tube bracket, brake line and bracket, and proportioning valve lever at housing. DO NOT kink lines. Install new differential cover gasket and differential cover with 14 bolts. Tighten bolts to 35 lb.-ft. (47 N.m).

## FOLLOW-ON TASKS:

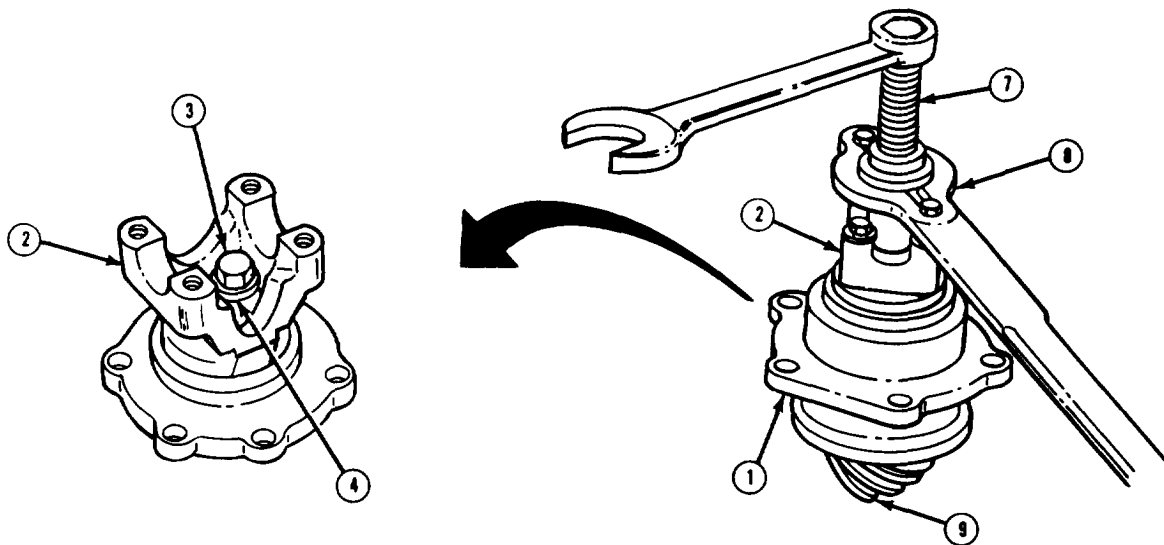
- Install rear axle shafts. (See TM 9-2320-289-20)
- Fill rear axle differential with lubricating oil. (See LO 9-2320-289-12)

PINION BEARINGS

6-17. REAR AXLE DRIVE PINION AND BEARINGS MAINTENANCE (ALL EXCEPT M1009) (Con't).

b. DISASSEMBLY

1. Place retainer (1) and drive pinion (9) assembly in a soft-jawed vise. Place flange holder (8) on flange (2), and remove flange nut (3) and lockwasher (4). Discard flange nut and lockwasher.
2. Thread flange remover bolt into small outside diameter end of flange remover (7). Turn flange remover 1/8 turn to a locked position. Turn flange remover while holding flange holder (8) stationary and remove flange (2). If damaged, remove deflector and discard.



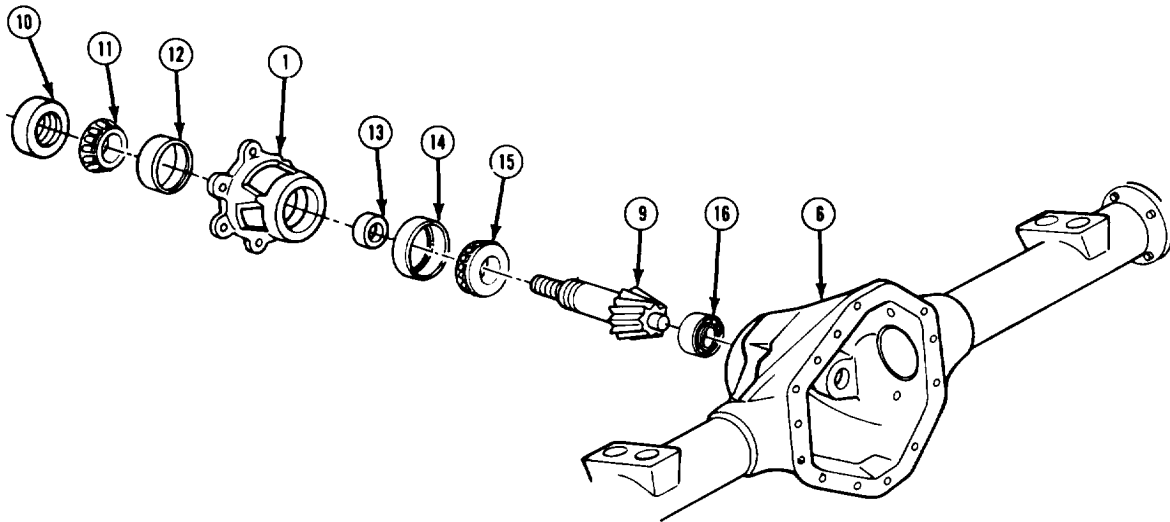
3. Support retainer (1) in a press plate and press out drive pinion (9).
4. Remove oil seal (10) from retainer (1) and discard.
5. Remove front bearing (11) from retainer (1). Remove front and rear bearing cups (12 and 14) from retainer.
6. Press spacer (13) and rear bearing (15) from drive pinion (9). Discard spacer.
7. Remove straddle bearing (16) from housing (6).

TA50599

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 6-17. REAR AXLE DRIVE PINION AND BEARINGS MAINTENANCE (ALL EXCEPT M1009) (Con't).
 

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 c. CLEANING AND INSPECTION
 

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 WARNING
 

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- Dry cleaning solvent P-D-680 is toxic and flammable. Always wear protective goggles and gloves and use only in a well-ventilated area. Avoid contact with skin, eyes, and clothes and DO NOT breathe vapors. DO NOT use near open flame or excessive heat. The solvent's flash point is 100°F-138°F (38°C-59°C). If you become dizzy while using cleaning solvent, immediately get fresh air and medical help. If solvent contacts eyes, immediately wash your eyes with water and get medical aid.
  - Compressed air used for cleaning purposes should never exceed 30 psi (207 kPa). Use only effective chip guarding and personnel protective equipment (goggles/shield, gloves, etc.). Failure to follow this warning may result in serious injury to personnel.
1. Clean all components with dry cleaning solvent and dry with compressed air.
  2. Clean and inspect all pinion bearings in accordance with TM 9-214,
  3. Clean pinion bearing bores in retainer to ensure that they are free of dirt or other contamination. Remove any nicks found.

TA50600



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6-17. REAR AXLE DRIVE PINION AND BEARINGS MAINTENANCE (ALL EXCEPT M1009) (Con't).

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NOTE

If drive pinion is damaged, differential ring gear and ring gear bolts must also be replaced. (See paragraph 6-15)

4. Inspect drive pinion for damage. Replace if damaged,
5. Inspect flange for evidence of wear at point of oil seal contact. Replace if worn or damaged.
6. Inspect retainer for damage. Replace if damaged,

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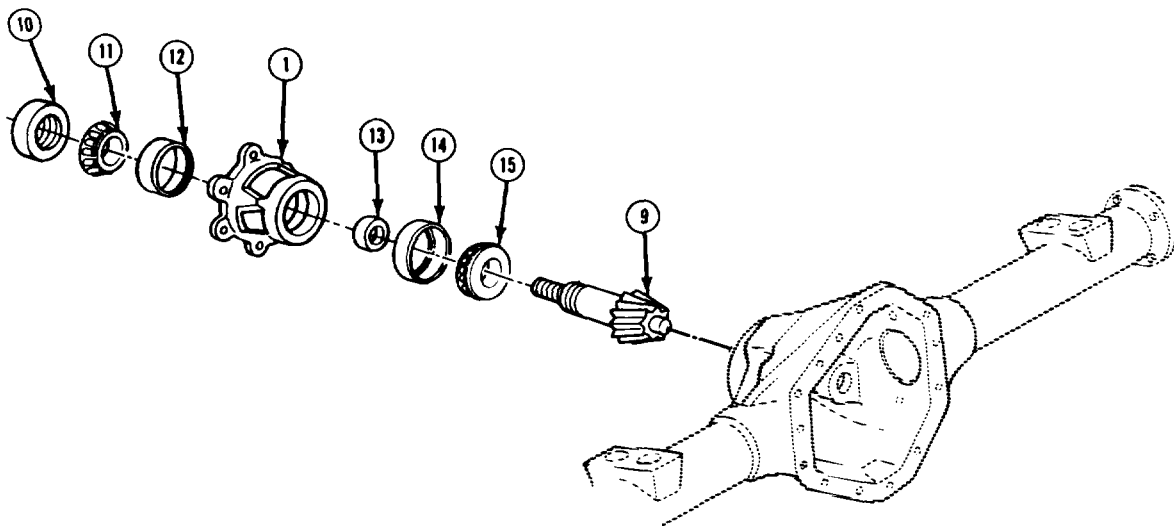
d. ASSEMBLY AND PRELOAD ADJUSTMENT

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NOTE

Ensure that all components are lubricated with lubricating oil as they are assembled.

1. Press rear bearing (15) onto drive pinion (9).
2. Install front and rear bearing cups (12 and 14) inside retainer (1).
3. Place retainer (1) onto drive pinion (9) and install new spacer (13).
4. Press front bearing (11) onto drive pinion (9).
5. Lubricate new oil seal (10) lips with molybdenum grease and install in retainer (1) bore until seated against internal shoulder.
6. If removed, install new deflector to flange (2). Install flange onto drive pinion (9) splines.



TA50601

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**6-17. REAR AXLE DRIVE PINION AND BEARINGS MAINTENANCE (ALL EXCEPT M1009) (Con't).**

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- 7 . Clamp drive pinion (9) and retainer (1) assembly in soft-jawed vise. Install flange holder (8). Install new lockwasher (4) and new flange nut (3). Tighten flange nut to approximately 350 lb.-ft. (475 Nom). Remove flange holder.

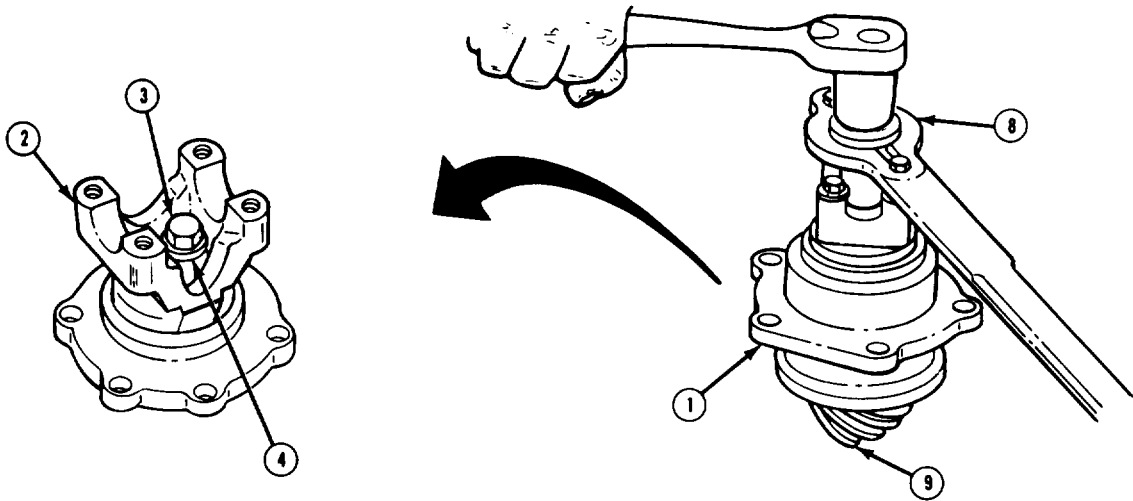
CAUTION

Ensure that flange nut (3) is tightened in small increments as preload is being reached. Exceeding torque specifications may compress spacer (13) on drive pinion (9) too far and require replacement of spacer.

NOTE

Proper preload is reached when torque required to turn drive pinion (9) is 25-35 lb.-in. (3-4 N.m) for new bearings, or 5-15 lb.-in. (1-2 N.m) for reused bearings.

- 8 . Measure turning torque. Continue to tighten flange nut (3) in small increments. Check turning torque after each slight amount of tightening until proper preload is reached.



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6-17. REAR AXLE DRIVE PINION AND BEARINGS MAINTENANCE (ALL EXCEPT M1009) (Con't).

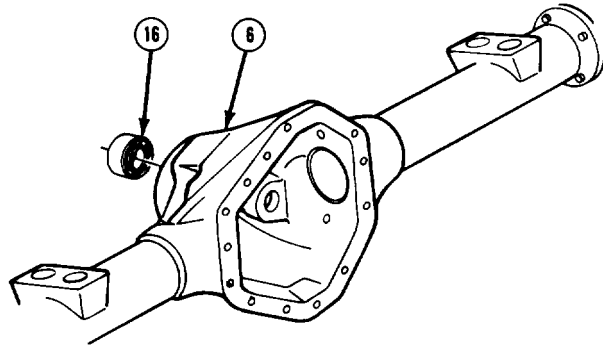
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CAUTION

Ensure that straddle bearing (16) is installed with part number facing pinion flange. Failure to follow this caution will result in damage to straddle bearing.

NOTE

If rear axle housing (6) is 1984 or older design, it uses a straddle bearing (16) with rollers that are larger than 1985 design straddle bearing. Ensure that proper size straddle bearing is installed,



9. Install straddle bearing (16) in housing (6).

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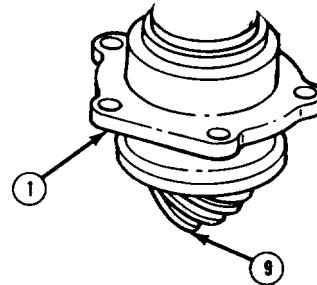
e. INSTALLATION AND PINION DEPTH ADJUSTMENT

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NOTE

If no number is stamped or painted on drive pinion (9), should be used for code number.

1. Check gear head or shaft of drive pinion (9) for pinion depth code number. Remove retainer (1) and drive pinion assembly from vise.



6-17. REAR AXLE DRIVE PINION AND BEARINGS MAINTENANCE (ALL EXCEPT M1009) (Con't).

2. Compare depth code number with number on original drive pinion (9). Using Table 6-4, select proper shim for preliminary setting of pinion depth,

NOTE

If code number on old and new drive pinion (9) are the same, original shim may be reused if undamaged.

3. Refer to thickness of shim as measured in REMOVAL, step 2. Increase or decrease shim thickness as indicated by Table 6-4:

Table 6-4. Determining Drive Pinion Shim Requirements

Code Number On Service Pinion	Code Number On Original Pinion				
	+ 2	+ 1	0	- 1	- 2
+ 2	-	Add 0.001	Add 0.002	Add 0.003	Add 0.004
+ 1	Subtract 0.001	-	Add 0.001	Add 0.002	Add 0.003
0	Subtract 0.002	Subtract 0.001	-	Add 0.001	Add 0.002
- 1	Subtract 0.003	Subtract 0.002	Subtract 0.001	-	Add 0.001
- 2	Subtract 0.004	Subtract 0.003	Subtract 0.002	Subtract 0.001	-

EXAMPLE 1. If original shim measured 0.014 in. (0.36 mm), original code was "-1," and new code is "+2," correct shim would be:

$$0,014 \text{ in.} + 0.003 \text{ in.} = 0.017 \text{ in.}$$

$$(0.36 \text{ mm} + 0.08 \text{ mm} = 0.43 \text{ mm})$$

EXAMPLE 2. If original shim measured 0.012 in. (0.30 mm), original code was "+2," and new code is "-2," correct shim would be:

$$0.012 \text{ in.} - 0.004 \text{ in.} = 0,008 \text{ in.}$$

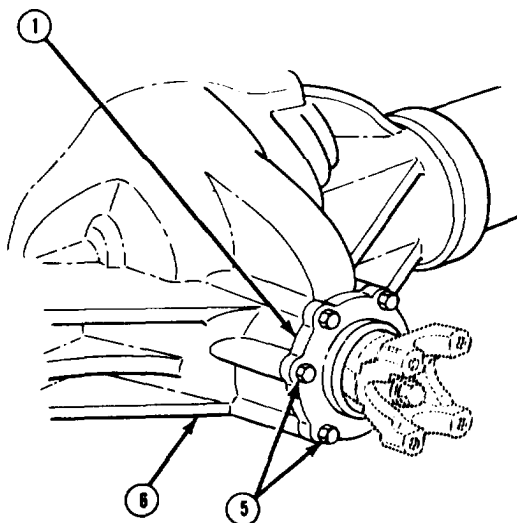
$$(0,30 \text{ mm} - 0.010 \text{ mm} = 0.20 \text{ mm}).$$

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6-17. REAR AXLE DRIVE PINION AND BEARINGS MAINTENANCE (ALL EXCEPT M1009) (Con't).

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- 4 . Ensure that all mating surfaces are clean. Place shim, as determined in INSTALLATION , step 3. onto housing (6), alining all bolt holes.
- 5 . Install retainer (1) and drive pinion assembly with 6 new lockwashers and bolts (5). Tighten bolts to 65 lb.-ft. (88 N.m).



FOLLOW-ON TASKS:

- Install rear axle differential. (See paragraph 6-15)
- Connect rear propeller shaft to pinion flange. (See TM 9-2320-289-20)