

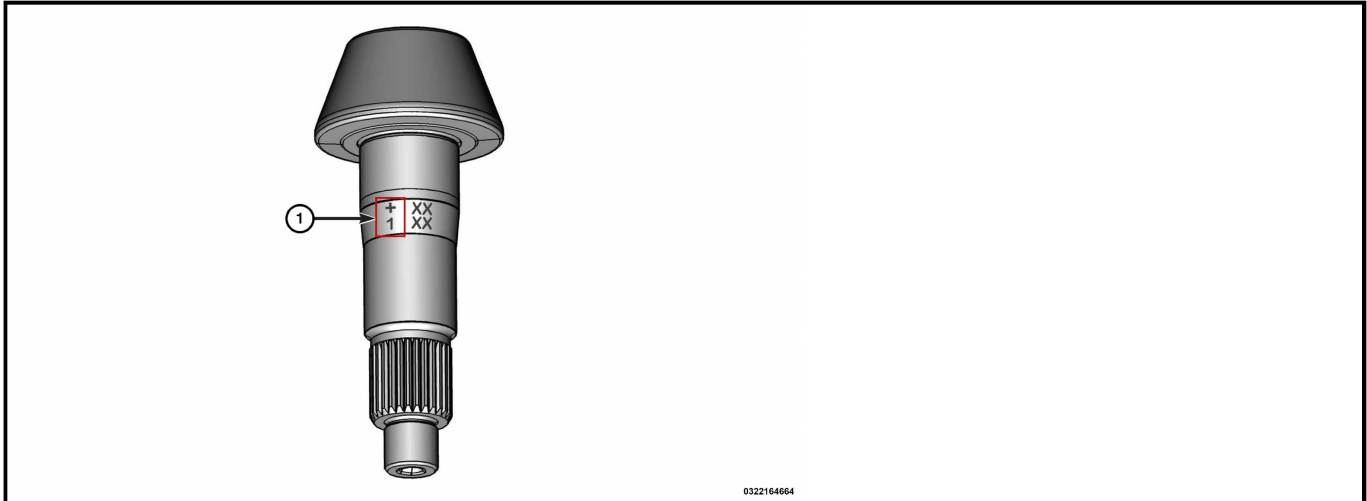
2021 GENERAL INFORMATION

Axle Adjustments - Gladiator

ADJUSTMENTS

ADJUSTMENTS - M210 FRONT AXLE

PINION DEPTH VARIANCE



Ring and pinion gears are supplied as matched sets. A plus "+" number, minus "-" number or zero "0" is etched into the shank of the pinion shaft (1). This number is the amount (in hundredths of a millimeter) the depth varies from the standard depth setting of a pinion etched with a "0". The standard depth provides the best gear tooth contact pattern. Refer to Backlash and Contact Pattern in this section for additional information.

If a new gear set is being installed, note the depth variance etched into both the original and replacement pinion. Add or subtract this number from the thickness of the original depth washer to compensate for the difference in the depth variances. Refer to the Depth Variance chart.

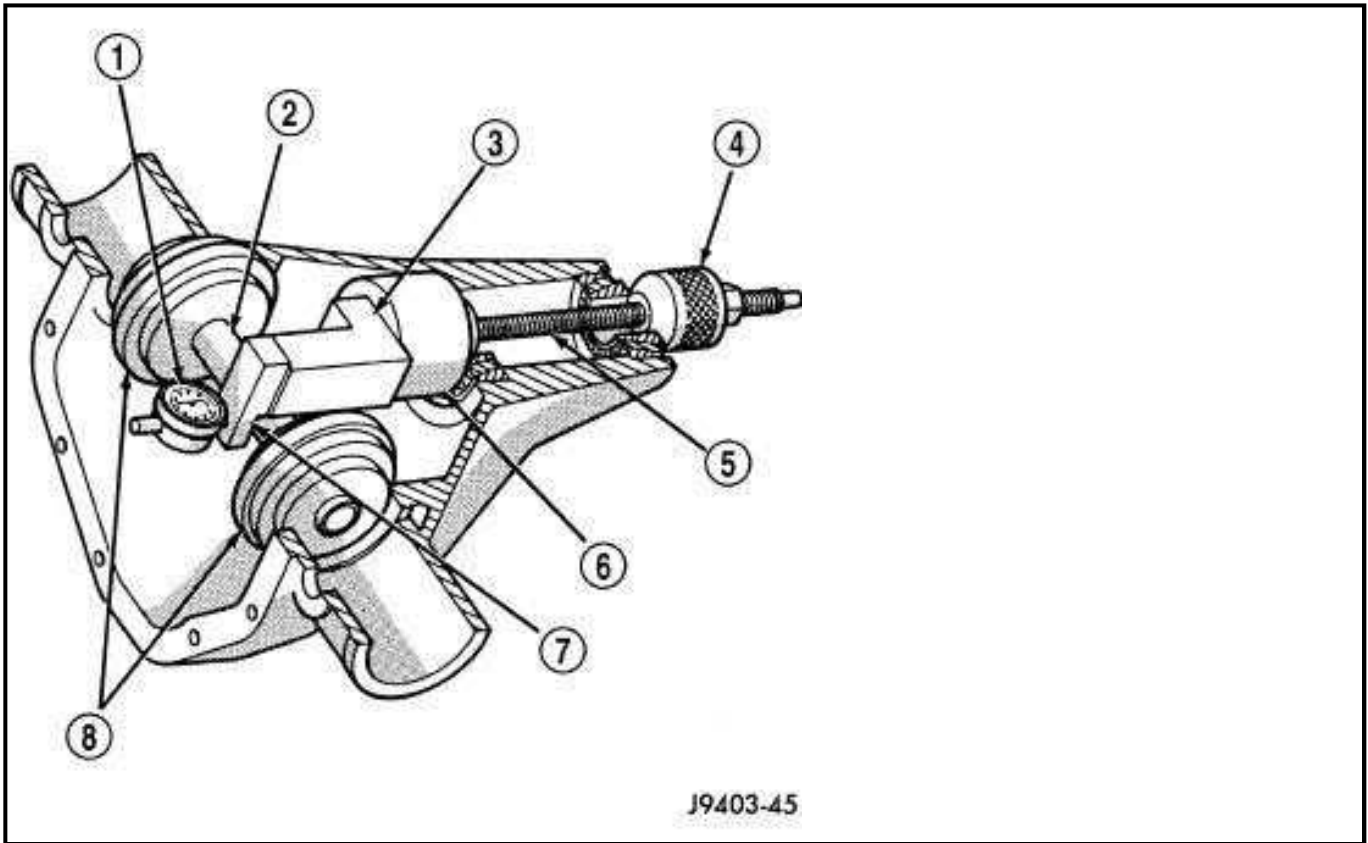
Note where Old and New Pinion Marking columns intersect. Intersecting figure represents plus or minus the amount needed.

Note the etched number on the face of the pinion shaft (-1, -2, 0, +1, +2, etc.). The numbers represent hundredths of a millimeter deviation from the standard. If the number is negative, add that value to the required thickness of the depth washer. If the number is positive, subtract that value from the thickness of the depth washer. If the number is 0 no change is necessary.

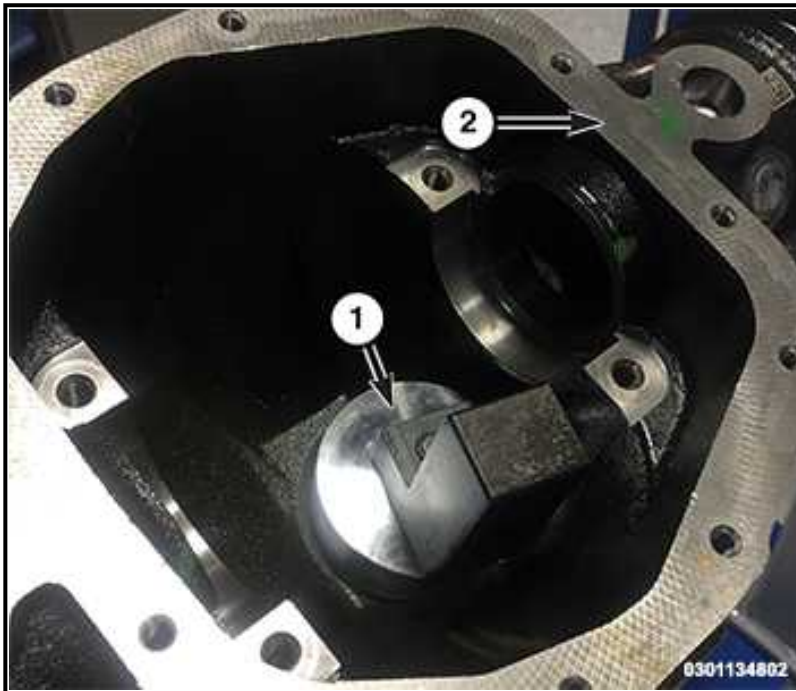
PINION GEAR DEPTH VARIANCE

Original Pinion Gear Depth Variance	Replacement Pinion Gear Depth Variance									
	-4	-3	-2	-1	0	+1	+2	+3	+4	
+4	+0.20	+0.18	+0.15	+0.13	+0.10	+0.08	+0.05	+0.03	0	
+3	+0.18	+0.15	+0.13	+0.10	+0.08	+0.05	+0.03	0	-0.03	
+2	+0.15	+0.13	+0.10	+0.08	+0.05	+0.03	0	-0.03	-0.05	
+1	+0.13	+0.10	+0.08	+0.05	+0.03	0	-0.03	-0.05	-0.08	
0	+0.10	+0.08	+0.05	+0.03	0	-0.03	-0.05	-0.08	-0.10	
-1	+0.08	+0.05	+0.03	0	-0.03	-0.05	-0.08	-0.10	-0.13	
-2	+0.05	+0.03	0	-0.03	-0.05	-0.08	-0.10	-0.13	-0.15	
-3	+0.03	0	-0.03	-0.05	-0.08	-0.10	-0.13	-0.15	-0.18	
-4	0	-0.03	-0.05	-0.08	-0.10	-0.13	-0.15	-0.18	-0.20	

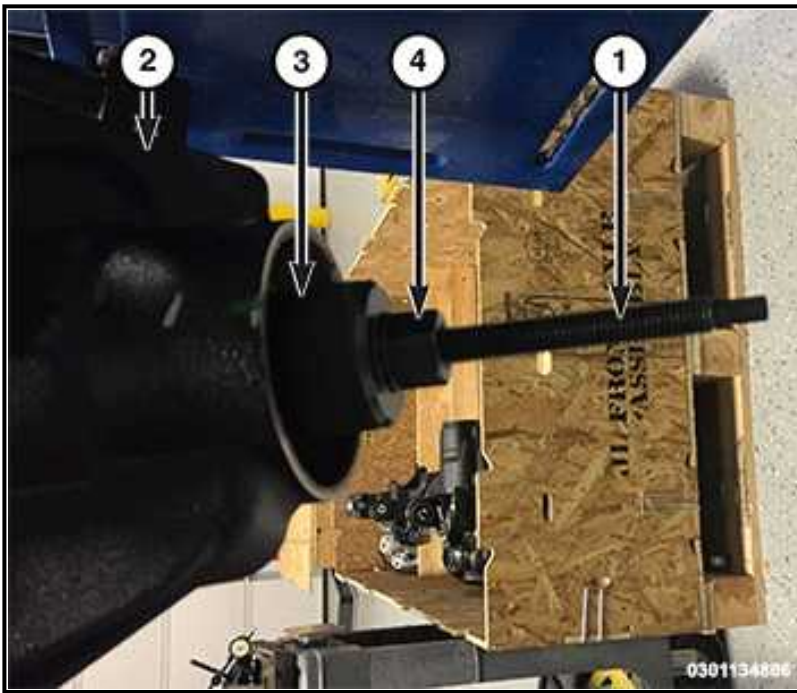
PINION DEPTH MEASUREMENT



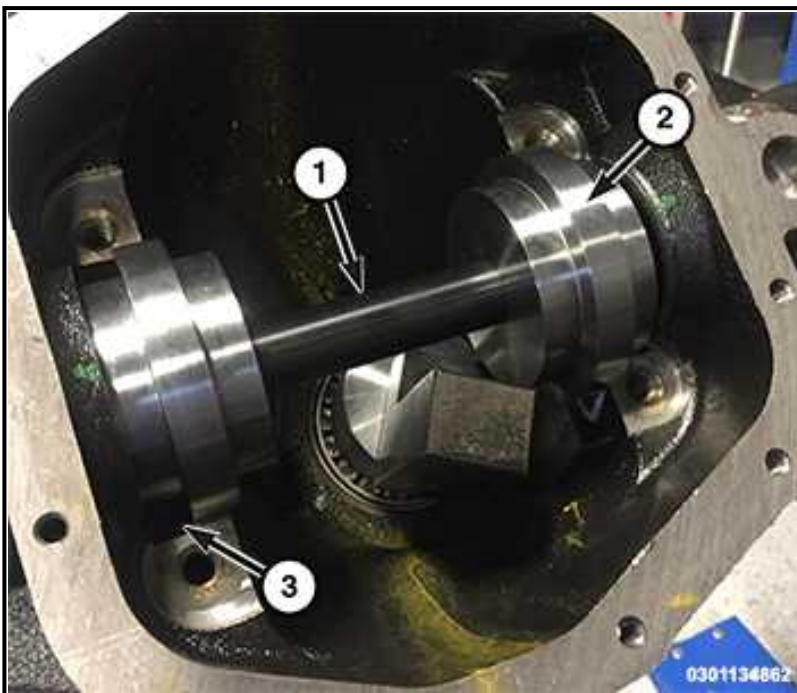
Measurements are taken with the pinion bearing cups and pinion bearings installed in the housing. Take measurements with a Dial Indicator. (special tool #C-3339A, Set, Dial Indicator) (1).



1. Assemble the Pinion Height Block (special tool #6739, Block, Height) the Pinion Block (special tool #2053200030, Gauge, Pinion Height 38.800 mm) for 3.73 and 4.10 axle ratios, or (special tool #2053300030, Gauge, Pinion Height 24.800 mm) for 3.45 axle ratio (1), and rear pinion bearing onto Screw (special tool #6741, Screw).

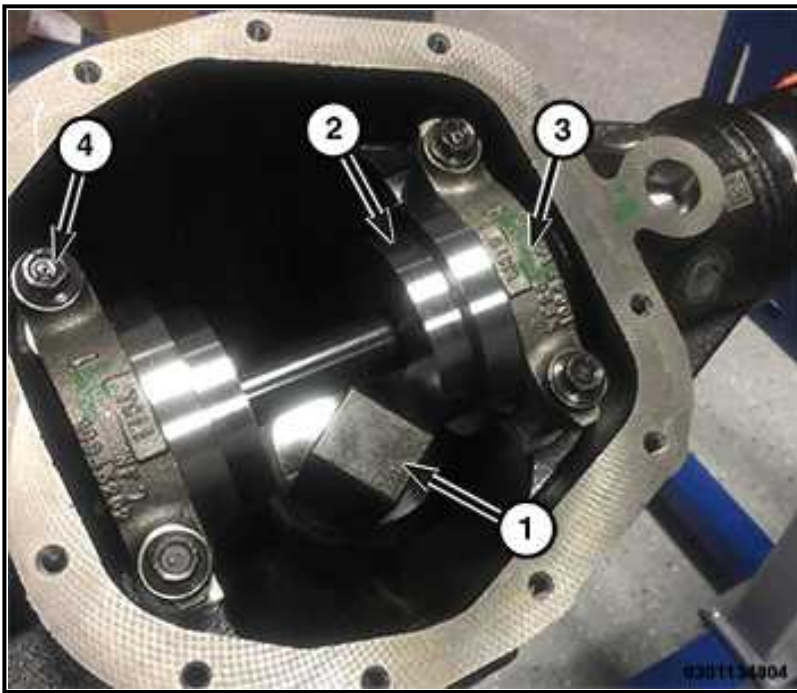


2. Insert assembled height gauge components into the housing (2) through the pinion bearing cups.
3. Install front pinion bearing and Cone-nut (special tool #6740, Cone) (3). Tighten nut until torque to rotate the screw is 2.25 N.m (20 in. lbs.).

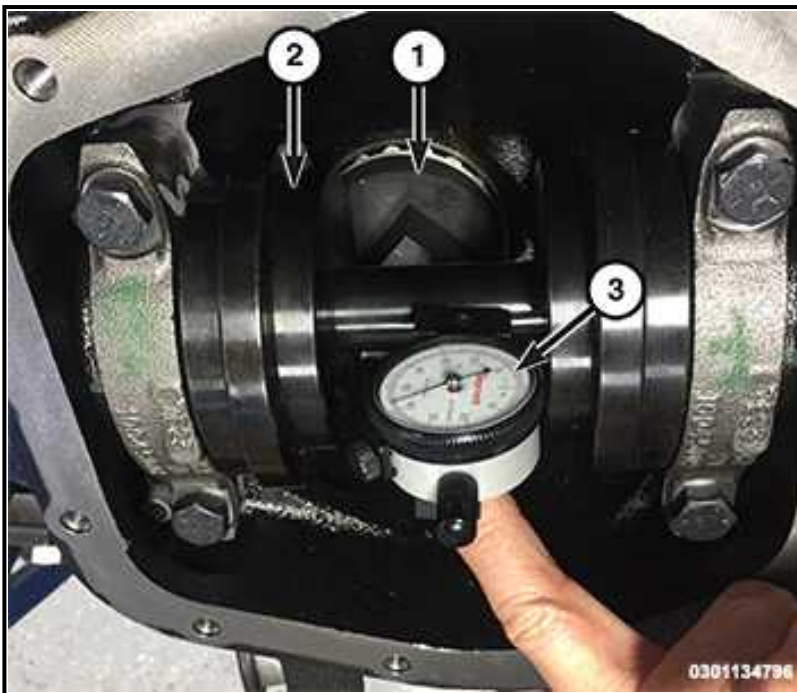


4. Place the Arbor Discs (special tool #2052800030, Set, Arbor Disc) (2) on the Arbor (special tool #D-115-3, Arbor) (1) and position the assembly in the axle housing differential bearing cradles (3).

NOTE: Arbor Discs (special tool #2052800030, Set, Arbor Disc) have different step diameters to fit other axles. Choose the proper step for the axle being serviced.



5. Install differential bearing caps (3) on arbor discs (2) and tighten cap bolts (4) to the proper. Refer to [TECHNICAL SPECIFICATIONS](#) .



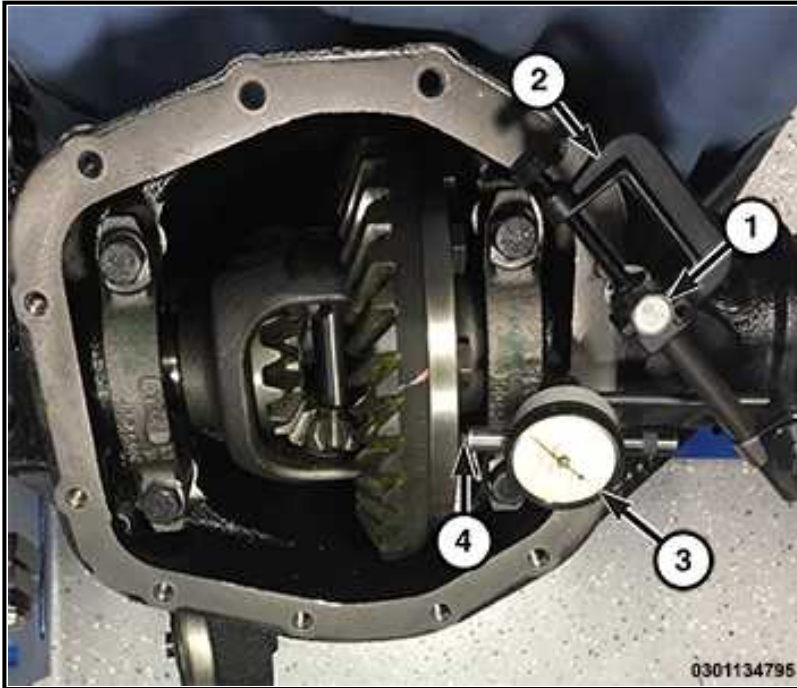
6. Install Dial Indicator (special tool #C-3339A, Set, Dial Indicator) (3) into Scooter Block (special tool #D-115-2A, Block, Scooter) (1) and secure set screw.
7. Position Scooter Block/Dial Indicator (3) flush on the pinion height block (1) and zero the dial indicator (3).
8. Slowly slide the scooter block (1) across the pinion height block over to the arbor. Move the scooter block (1) until the dial indicator (3) probe crests the arbor and record the highest reading.
9. Select a washer equal to the dial indicator reading plus or minus the pinion depth variance number etched in the face of the pinion. **Example:** If depth variance is -2 add 0.002 in. to the dial indicator reading. If depth variance is +2 subtract 0.002 in. from the dial indicator reading.

The total is the washer thickness needed for the pinion depth variance.

DIFFERENTIAL BEARING PRELOAD AND GEAR BACKLASH

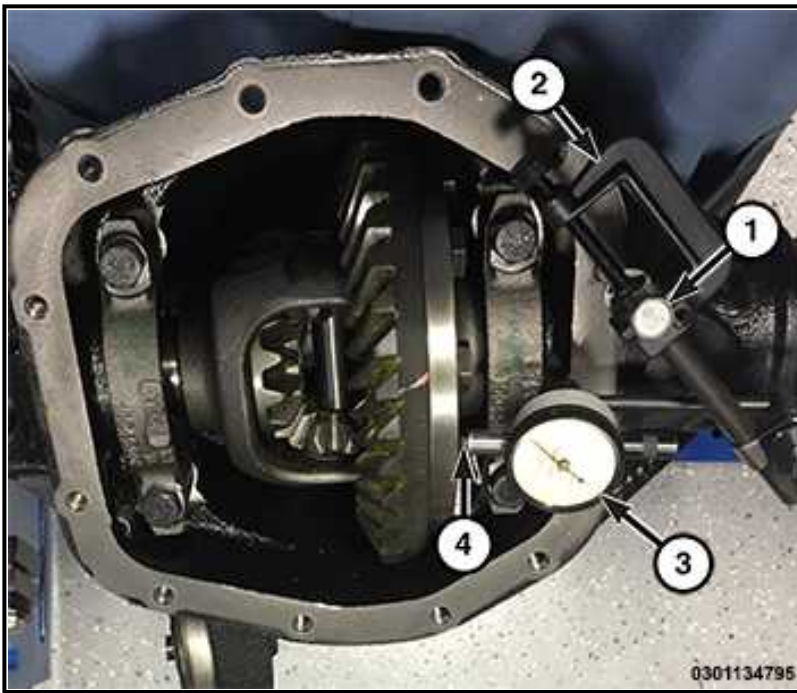
1. Remove the differential assembly from the axle housing. Refer to [REMOVAL AND INSTALLATION](#) .

2. Remove the differential spreader tool.
3. Install the Dummy Bearings (special tool #2052900030, Bearing, Dummy 80.000 mm) and (special tool #2053100030, Bearing, Dummy 96.838 mm) on the differential case and install the differential case in the axle housing.
4. Install the differential bearing caps in the original location and snug the bearing cap bolts.
5. Seat the differential dummy bearings to the pinion gear side of the housing with a dead-blow hammer.
6. Seat the differential dummy bearings to the ring gear side of the housing with a dead-blow hammer.



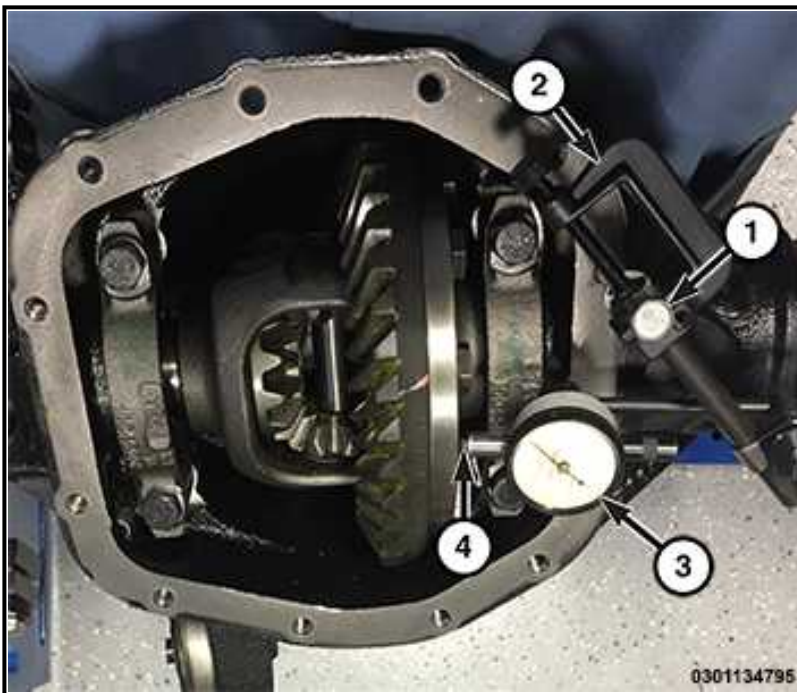
1 - Alignment Pins
2 - Dial Indicator Set
3 - Dial Indicator
4 - Differential Case

7. Install the (special tool #C-3288-B, Set, Alignment Pins) in the cover bolt hole.
8. Attach the (special tool #C-3339A, Set, Dial Indicator) to the pin and position indicator dial indicator plunger on a flat surface between the ring gear bolts.
9. Push and hold the differential case to pinion gear side of the housing and zero the dial indicator.
10. Push and hold the differential case to the ring gear side of the differential housing. Record the dial indicator reading. Add the preload specification 0.05 mm (0.002 in.) to the differential dial indicator reading. This is the total differential shim thickness needed to preload the differential bearings.
EXAMPLE: Differential Dial Indication Reading + Preload Specification 0.05 mm (0.002 in.) = Total Differential Shim.
11. Rotate the dial indicator out of the way on the pilot stud.
12. Remove the differential case and dummy bearings from the differential housing.
13. Install the pinion gear in the axle housing and establish the pinion torque to rotating (PTTR).



1 - Alignment Pins
2 - Dial Indicator Set
3 - Dial Indicator
4 - Differential Case

14. Install the differential case with the Dummy Bearings (special tool #2052900030, Bearing, Dummy 80.000 mm) and (special tool #2053100030, Bearing, Dummy 96.838 mm) in the axle housing, install the bearing caps and snug the bolts.
15. Seat the ring gear side dummy bearing.
16. Position the dial indicator plunger on a flat surface between the ring gear bolts.
17. Push and hold the differential case against the pinion gear and zero the dial indicator.



1 - Alignment Pins
2 - Dial Indicator Set
3 - Dial Indicator
4 - Differential Case

18. Push and hold the differential case to the ring gear side of the axle housing and record the dial indicator ring gear side reading.
19. Subtract the backlash specification 0.16 mm (0.006 in.) from the ring gear side reading for the ring gear backlash. The remainder is the washer needed on the ring gear side of the differential.

EXAMPLE: Ring Gear Side Reading - Backlash Specification 0.16 mm (0.006 in.) = Ring Gear Side Shim.

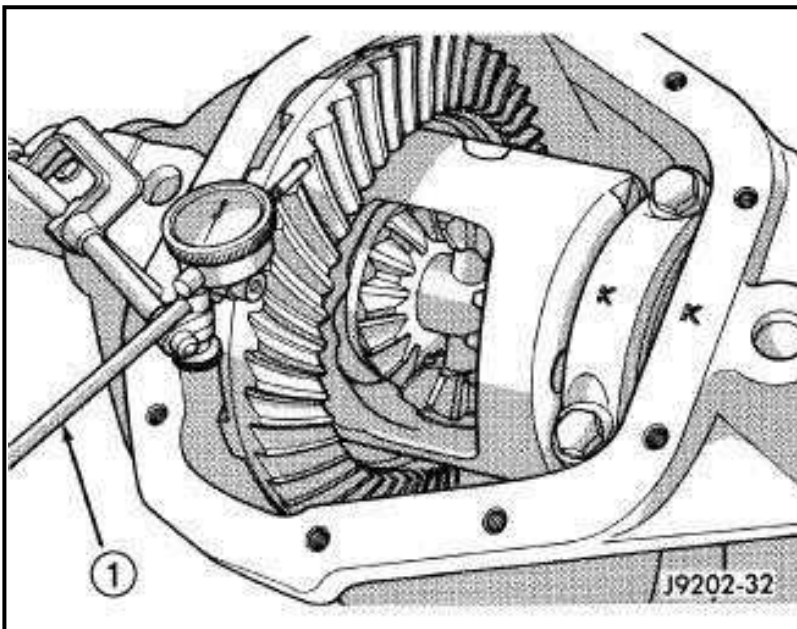
20. Subtract the ring gear side shim from the differential total preload shim. The remainder is the shim needed on the pinion gear side of the differential.

EXAMPLE: Total Differential Shim - Ring Gear Side Shim = Pinion Gear Side Shim.

21. Rotate the dial indicator out of the way on the pilot stud.
22. Remove the differential case with dummy bearings from the differential housing.
23. Install the differential side bearings on the differential case. Refer to **REMOVAL AND INSTALLATION**.

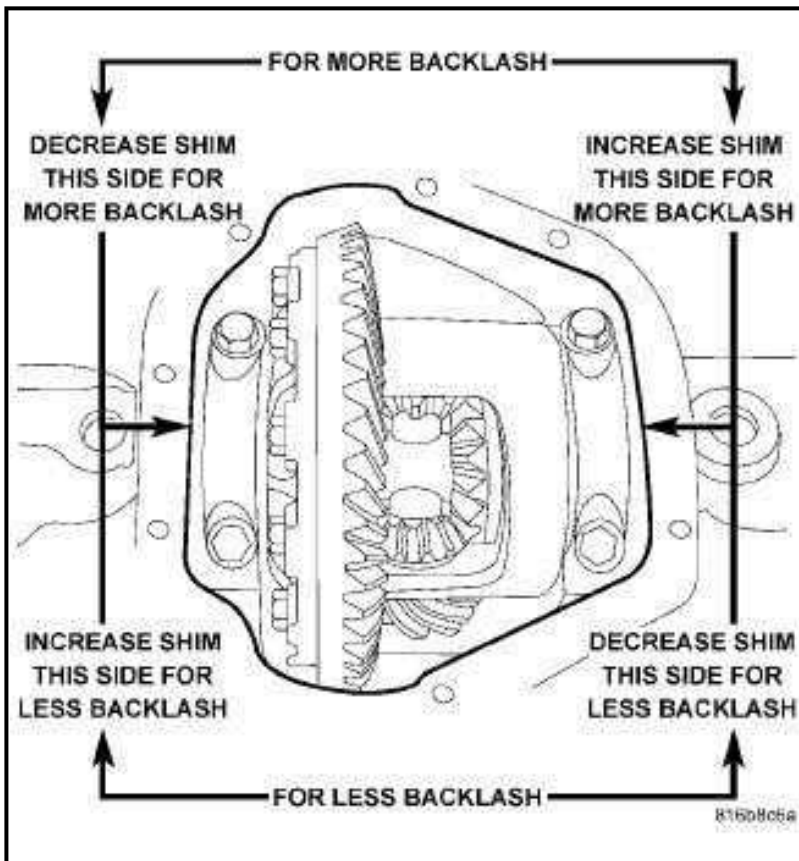
CAUTION: Never spread housing over 0.50 mm (0.020 in.). Failure to follow these instruction could result in distorting the housing.

24. Install the differential assembly into the differential housing. Refer to **REMOVAL AND INSTALLATION**.
25. Install the differential bearing caps and tighten the differential bearing cap bolts to the proper torque specification.
26. Remove the spreader from the differential housing.
27. Rotate the differential case several times to seat the differential side bearings.



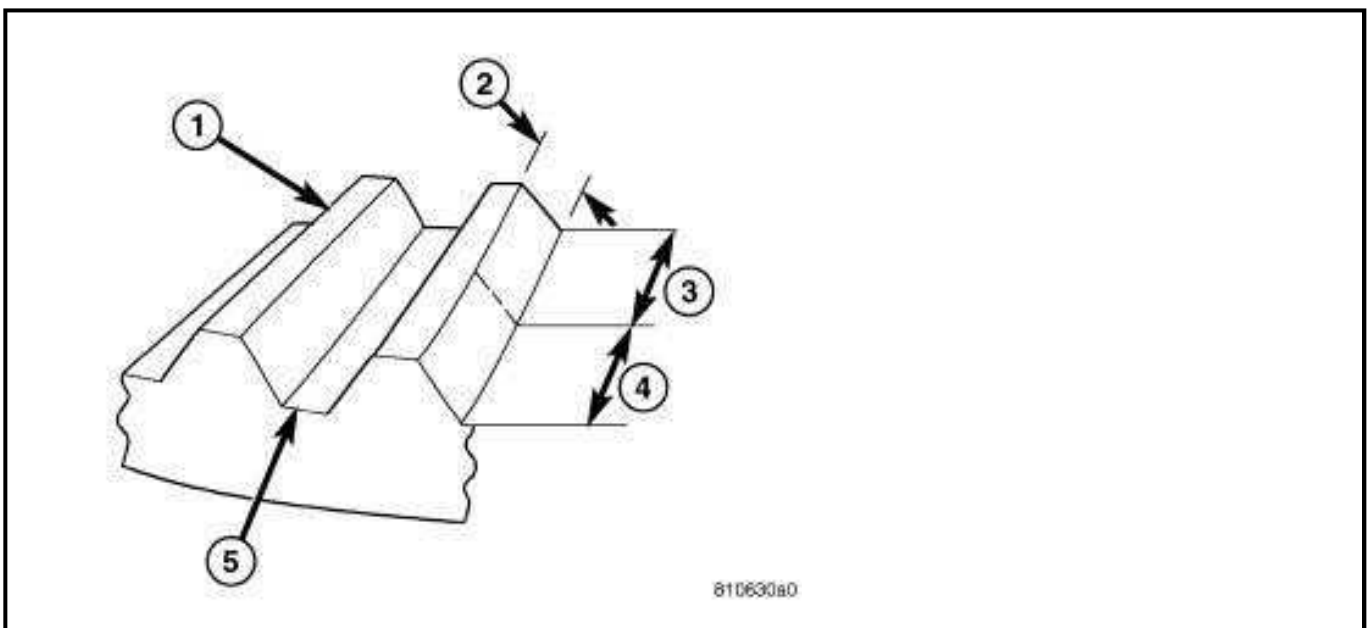
1 - Dial Indicator Plunger

28. Position the dial indicator plunger against a ring gear tooth.
29. Push and hold the ring gear upward while holding the pinion gear.
30. Zero the dial indicator face to pointer.



31. Push and hold the ring gear downward while holding the pinion gear. The dial indicator reading should be between 0.12 mm - 0.20 mm (0.005 in - 0.008 in). If the backlash is not within specifications transfer the necessary amount of shim thickness from one side of the axle housing to the other.
32. Verify the differential case and ring gear run-out by measuring ring to pinion gear backlash at eight locations around the ring gear. Readings should not vary more than 0.05 mm (0.002 in.). If the readings vary more than specified, the ring gear or the differential case is defective.
33. After the proper backlash is achieved, perform Gear Contact Pattern procedure.

GEAR CONTACT PATTERN



The ring gear and pinion teeth contact patterns will show if the pinion depth is correct in the housing. It will also show if the ring gear backlash has been adjusted correctly. The backlash can be adjusted within specifications to achieve desired tooth contact patterns.

The top land (1) of the gear tooth is the top surface of the tooth. The profile (2) of the gear tooth is the depth of the tooth. The toe (3) of the gear is the portion of the tooth surface at the end towards the center. The heel (4) of the gear is the portion of the tooth at the outer-end. The root (5) of the gear tooth is the lowest portion of the tooth.

NOTE: If the profile across the tooth is the same it is a three axis cut gear. If the profile across the tooth is tapered it is a two axis cut gear.

1. Apply a thin coat of hydrated ferric oxide or equivalent to the drive and coast side of the ring gear teeth.
2. Wrap, twist and hold a shop towel around the pinion yoke to increase the turning resistance of the pinion. This will provide a more distinct contact pattern.
3. With a boxed end wrench on the ring gear bolt, rotate the differential case one complete revolution in both directions while a load is being applied from shop towel.

The areas on the ring gear teeth with the greatest degree of contact against the pinion teeth will squeegee the compound to the areas with the least amount of contact. Note and compare patterns on the ring gear teeth to Gear Tooth Contact Patterns chart adjust pinion depth and gear backlash as necessary.

DRIVE SIDE HEEL TOE	CONDITION	COAST SIDE TOE HEEL	CONDITION	ACTION REQUIRED
	Desirable pattern. The drive pattern should be centered on the tooth. There should be some clearance between the pattern and the top of the tooth.		Desirable pattern. The coast pattern should be centered on the tooth, but may be slightly toward the toe. There should be some clearance between the pattern and the top of the tooth.	None
	Top toe contact		Top heel contact	Backlash correct. Thicker pinion position shim required.
	Root heel contact		Root toe contact	Backlash correct. Thinner pinion position shim required.
	Top heel contact		Top toe contact	Pinion position shim correct. Decrease backlash.
	Root toe contact		Root heel contact	Pinion position shim correct. Increase backlash.

TOTAL TORQUE TO ROTATE CHECK

The final check on the differential assembly before installing the axle shafts is, torque to rotate pinion, and differential combined. This will verify the correct differential bearing preload.

Total Torque To Rotate (TTTR) is: Pinion Torque To Rotate plus 0.45 - 0.95 N.m (4 - 8 in. lbs.).

NOTE: If TTTR is high, decrease the washer thickness equally on both sides of the differential and check TTTR again. If TTTR is low, increase the washer thickness equally on both sides of the differential and check TTTR again.

FRONT AXLE - M210

DESCRIPTION	SPECIFICATIONS	COMMENT
Bearing Cap Bolts	108 N.m (80 Ft. Lbs.)	-
Differential Cover Bolts	Torque Procedure: 1. Tighten to 20 N.m (15 Ft. Lbs.) 2. Rotate additional 20B°	Tightening Sequence
Differential Drain Plug	34 N.m (25 Ft. Lbs.)	-
Differential Fill Plug	34 N.m (25 Ft. Lbs.)	-

DESCRIPTION	SPECIFICATIONS	COMMENT
Front Axle Disconnect Skid Plate Bolts	42 N.m (31 Ft. Lbs.)	-
Front Axle Disconnect Bolts	18 N.m (13 Ft. Lbs.)	Do not reuse these fasteners. If removed, a NEW fastener must be installed and tightened to specifications.
Pinion Flange Nut	217 N.m (160 Ft. Lbs.)	Do not reuse these fasteners. If removed, a NEW fastener must be installed and tightened to specifications.
Ring Gear Bolts	136 N.m (100 Ft. Lbs.)	Do not reuse these fasteners. If removed, a NEW fastener must be installed and tightened to specifications.

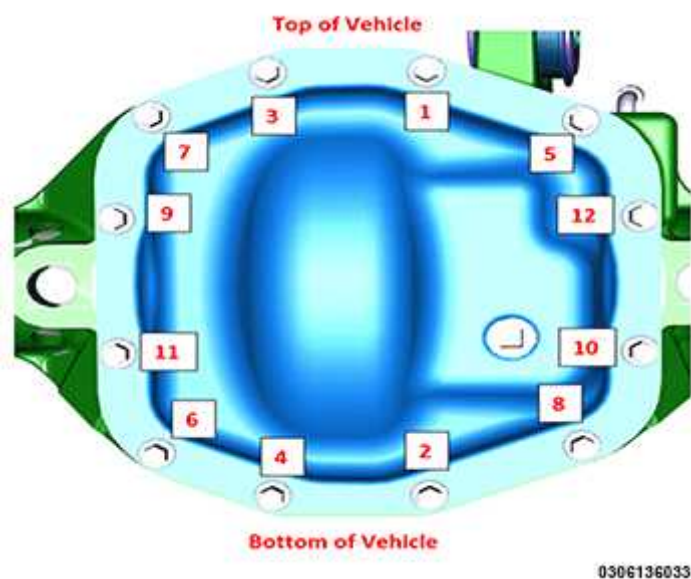
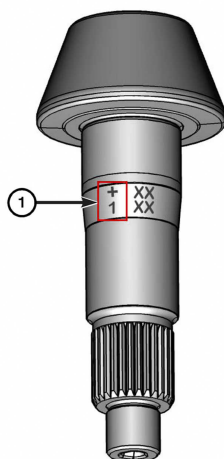


Fig. 1: Differential Cover Bolts Tightening Sequence
 Courtesy of CHRYSLER GROUP, LLC

ADJUSTMENTS - M220 REAR AXLE

PINION DEPTH VARIANCE



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Ring and pinion gears are supplied as matched sets. A plus "+" number, minus "-" number or zero "0" is etched into the shank of the pinion shaft (1). This number is the amount (in hundredths of a millimeter) the depth

varies from the standard depth setting of a pinion etched with a "0". The standard depth provides the best gear tooth contact pattern. Refer to Backlash and Contact Pattern in this section for additional information.

If a new gear set is being installed, note the depth variance etched into both the original and replacement pinion. Add or subtract this number from the thickness of the original depth washer to compensate for the difference in the depth variances. Refer to the Depth Variance chart.

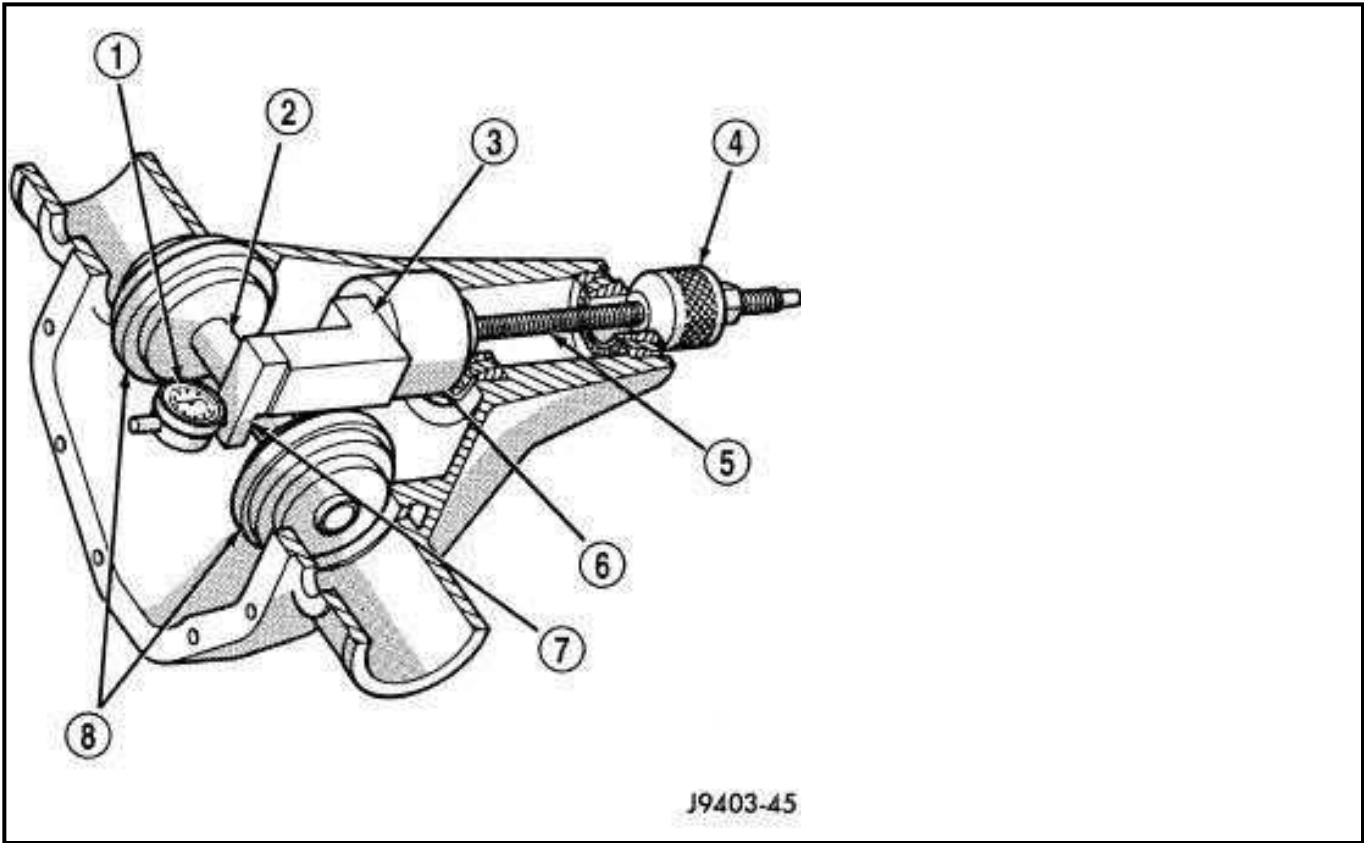
Note where Old and New Pinion Marking columns intersect. Intersecting figure represents plus or minus the amount needed.

Note the etched number on the face of the pinion shaft (-1, -2, 0, +1, +2, etc.). The numbers represent hundredths of a millimeter deviation from the standard. If the number is negative, add that value to the required thickness of the depth washer. If the number is positive, subtract that value from the thickness of the depth washer. If the number is 0 no change is necessary.

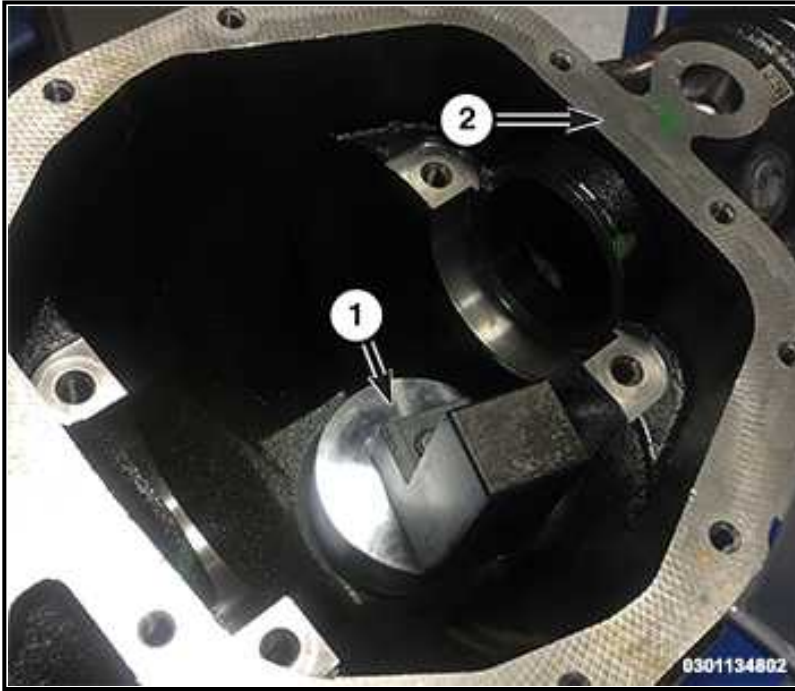
PINION GEAR DEPTH VARIANCE

Original Pinion Gear Depth Variance	Replacement Pinion Gear Depth Variance									
	-4	-3	-2	-1	0	+1	+2	+3	+4	
+4	+0.20	+0.18	+0.15	+0.13	+0.10	+0.08	+0.05	+0.03	0	
+3	+0.18	+0.15	+0.13	+0.10	+0.08	+0.05	+0.03	0	-0.03	
+2	+0.15	+0.13	+0.10	+0.08	+0.05	+0.03	0	-0.03	-0.05	
+1	+0.13	+0.10	+0.08	+0.05	+0.03	0	-0.03	-0.05	-0.08	
0	+0.10	+0.08	+0.05	+0.03	0	-0.03	-0.05	-0.08	-0.10	
-1	+0.08	+0.05	+0.03	0	-0.03	-0.05	-0.08	-0.10	-0.13	
-2	+0.05	+0.03	0	-0.03	-0.05	-0.08	-0.10	-0.13	-0.15	
-3	+0.03	0	-0.03	-0.05	-0.08	-0.10	-0.13	-0.15	-0.18	
-4	0	-0.03	-0.05	-0.08	-0.10	-0.13	-0.15	-0.18	-0.20	

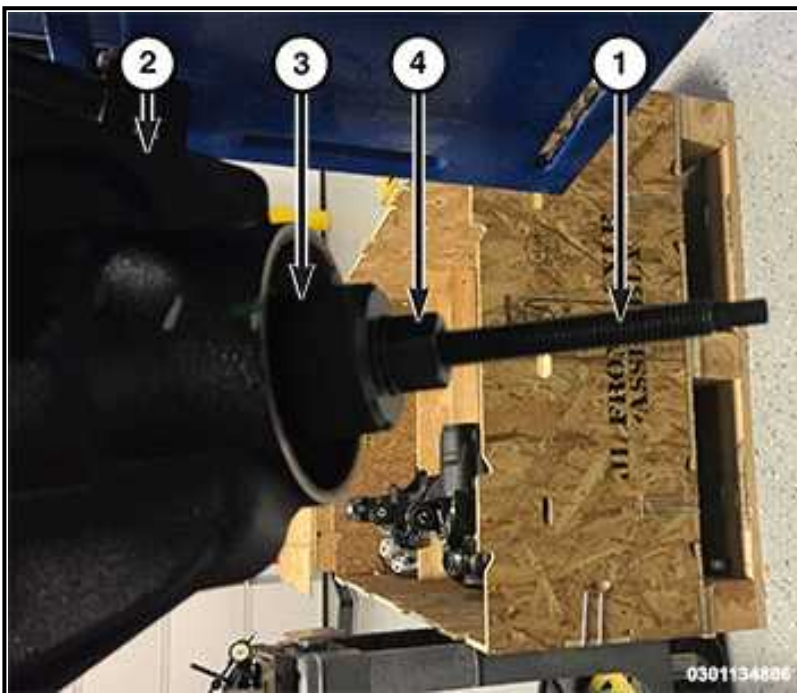
PINION DEPTH MEASUREMENT



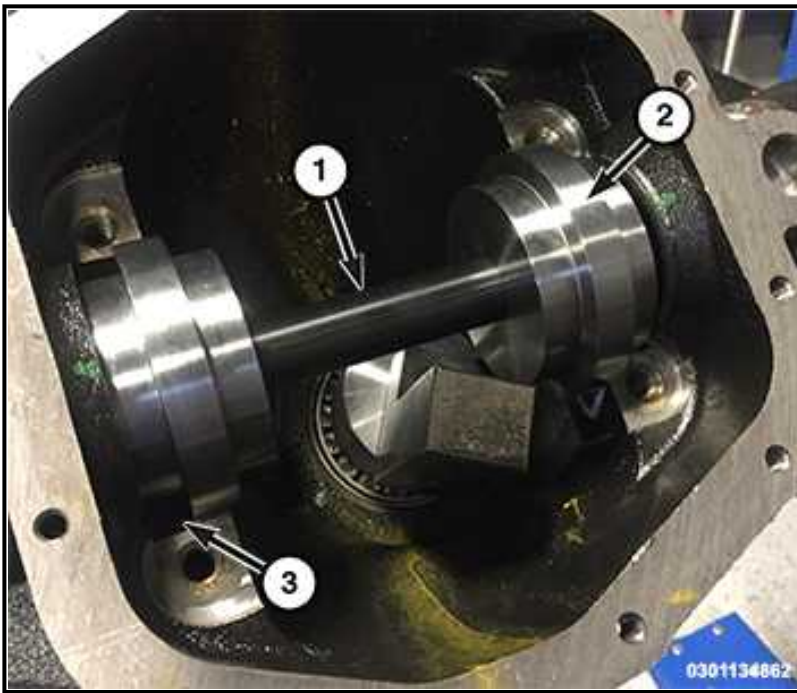
Measurements are taken with the pinion bearing cups and pinion bearings installed in the housing. Take measurements with a Dial Indicator. (special tool #C-3339A, Set, Dial Indicator) (1).



1. Assemble the Pinion Height Block (special tool #6739, Block, Height) the Pinion Block (special tool #2053200030, Gauge, Pinion Height 38.800 mm) for 3.73 and 4.10 axle ratios, or (special tool #2053300030, Gauge, Pinion Height 24.800 mm) for 3.45 axle ratio (1), and rear pinion bearing onto Screw (special tool #6741, Screw).

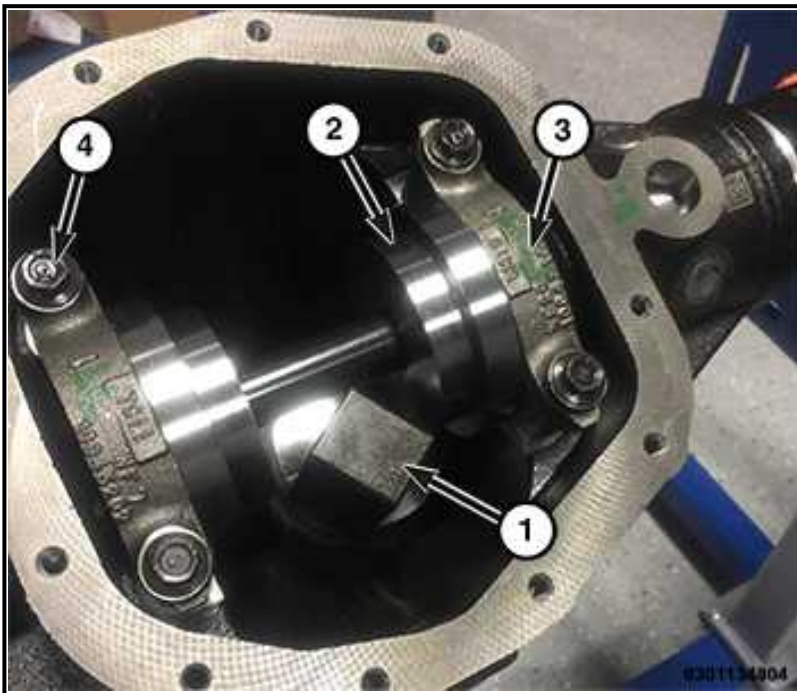


2. Insert assembled height gauge components into the housing (2) through the pinion bearing cups.
3. Install front pinion bearing and Cone-nut (special tool #6740, Cone) (3). Tighten nut until torque to rotate the screw is 2.25 N.m (20 in. lbs.).

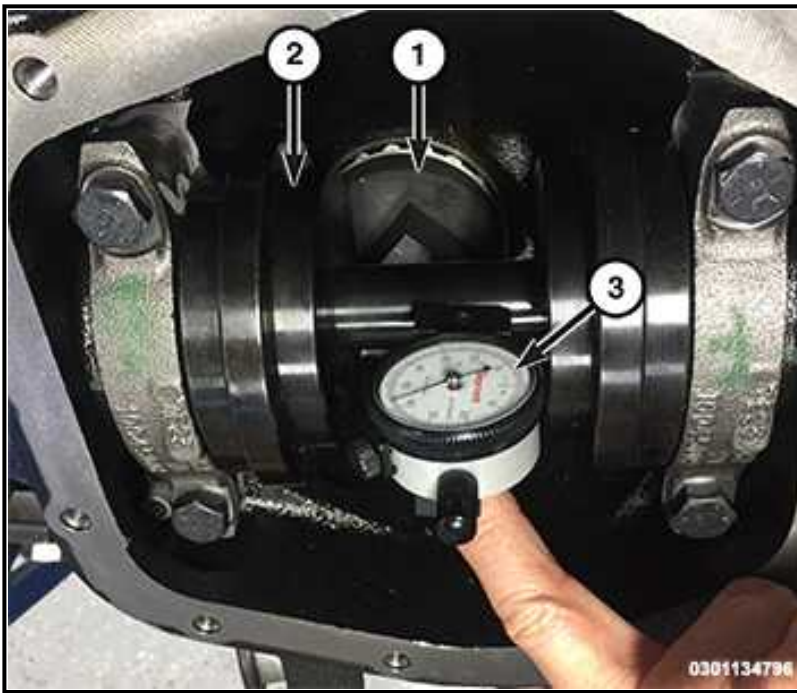


4. Place the Arbor Discs (special tool #2052800030, Set, Arbor Disc) (2) on the Arbor (special tool #D-115-3, Arbor) (1) and position the assembly in the axle housing differential bearing cradles (3).

NOTE: Arbor Discs (special tool #2052800030, Set, Arbor Disc) have different step diameters to fit other axles. Choose the proper step for the axle being serviced.



5. Install differential bearing caps (3) on arbor discs (2) and tighten cap bolts (4) to the proper. Refer to [TECHNICAL SPECIFICATIONS](#).

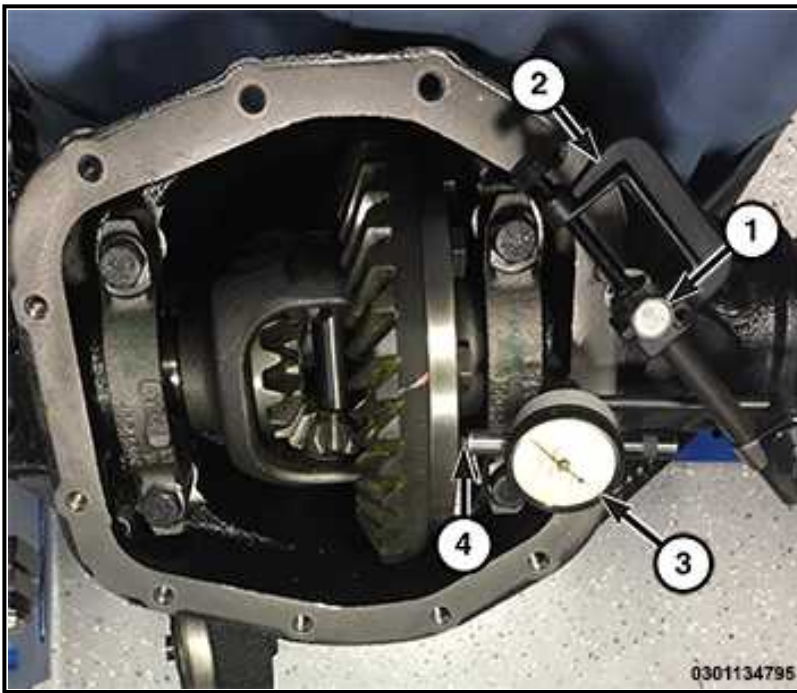


6. Install Dial Indicator (special tool #C-3339A, Set, Dial Indicator) (3) into Scooter Block (special tool #D-115-2A, Block, Scooter) (1) and secure set screw.
7. Position Scooter Block/Dial Indicator (3) flush on the pinion height block (1) and zero the dial indicator (3).
8. Slowly slide the scooter block (1) across the pinion height block over to the arbor. Move the scooter block (1) until the dial indicator (3) probe crests the arbor and record the highest reading.
9. Select a washer equal to the dial indicator reading plus or minus the pinion depth variance number etched in the face of the pinion. **Example:** If depth variance is -2 add 0.002 in. to the dial indicator reading. If depth variance is +2 subtract 0.002 in. from the dial indicator reading.

The total is the washer thickness needed for the pinion depth variance.

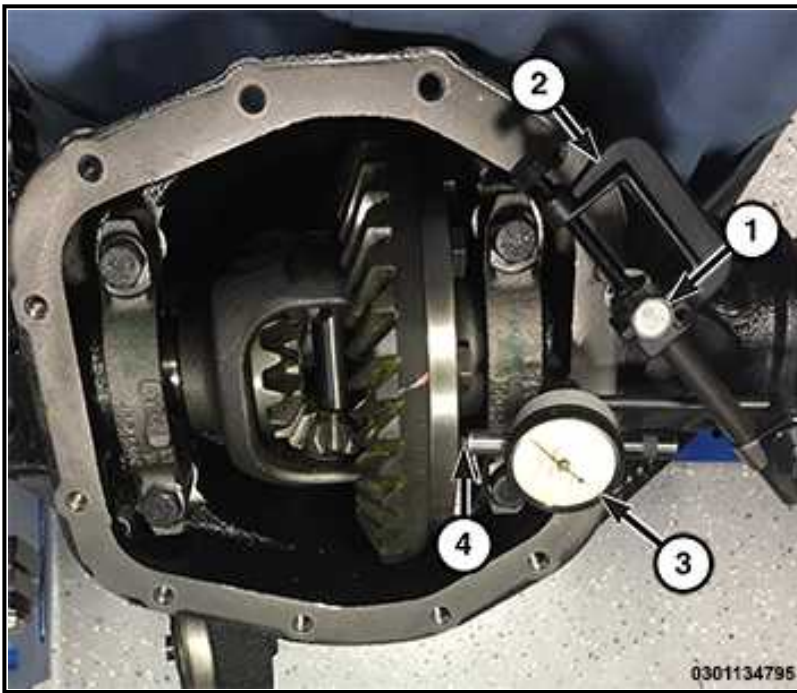
DIFFERENTIAL BEARING PRELOAD AND GEAR BACKLASH

1. Remove the differential assembly from the axle housing. Refer to [**REMOVAL AND INSTALLATION**](#).
2. Remove the differential spreader tool.
3. Install the Dummy Bearings (special tool #2052900030, Bearing, Dummy 80.000 mm) and (special tool #2053100030, Bearing, Dummy 96.838 mm) on the differential case and install the differential case in the axle housing.
4. Install the differential bearing caps in the original location and snug the bearing cap bolts.
5. Seat the differential dummy bearings to the pinion gear side of the housing with a dead-blow hammer.
6. Seat the differential dummy bearings to the ring gear side of the housing with a dead-blow hammer.



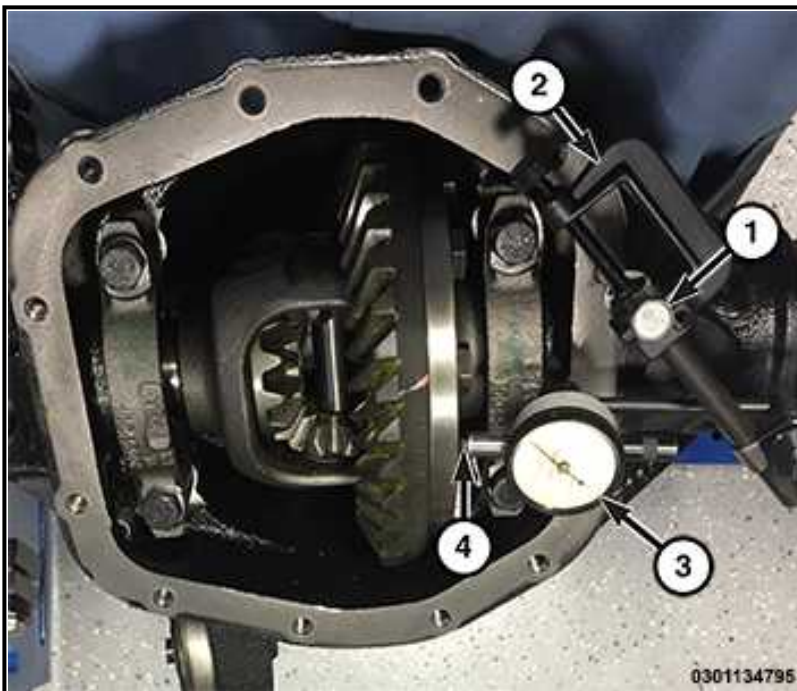
1 - Alignment Pins
2 - Dial Indicator Set
3 - Dial Indicator
4 - Differential Case

7. Install the (special tool #C-3288-B, Set, Alignment Pins) in the cover bolt hole.
8. Attach the (special tool #C-3339A, Set, Dial Indicator) to the pin and position indicator dial indicator plunger on a flat surface between the ring gear bolts.
9. Push and hold the differential case to pinion gear side of the housing and zero the dial indicator.
10. Push and hold the differential case to the ring gear side of the differential housing. Record the dial indicator reading. Add the preload specification 0.05 mm (0.002 in.) to the differential dial indicator reading. This is the total differential shim thickness needed to preload the differential bearings.
EXAMPLE: Differential Dial Indication Reading + Preload Specification 0.05 mm (0.002 in.) = Total Differential Shim.
11. Rotate the dial indicator out of the way on the pilot stud.
12. Remove the differential case and dummy bearings from the differential housing.
13. Install the pinion gear in the axle housing and establish the pinion torque to rotating (PTTR).



1 - Alignment Pins
2 - Dial Indicator Set
3 - Dial Indicator
4 - Differential Case

14. Install the differential case with the Dummy Bearings (special tool #2052900030, Bearing, Dummy 80.000 mm) and (special tool #2053100030, Bearing, Dummy 96.838 mm) in the axle housing, install the bearing caps and snug the bolts.
15. Seat the ring gear side dummy bearing.
16. Position the dial indicator plunger on a flat surface between the ring gear bolts.
17. Push and hold the differential case against the pinion gear and zero the dial indicator.



1 - Alignment Pins
2 - Dial Indicator Set
3 - Dial Indicator
4 - Differential Case

18. Push and hold the differential case to the ring gear side of the axle housing and record the dial indicator ring gear side reading.
19. Subtract the backlash specification 0.16 mm (0.006 in.) from the ring gear side reading for the ring gear backlash. The remainder is the washer needed on the ring gear side of the differential.

EXAMPLE: Ring Gear Side Reading - Backlash Specification 0.16 mm (0.006 in.) = Ring Gear Side Shim.

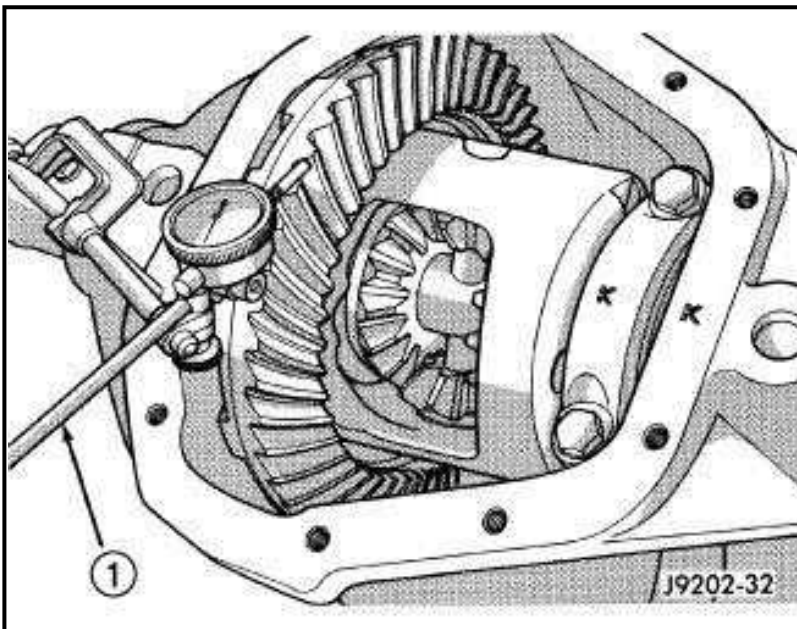
20. Subtract the ring gear side shim from the differential total preload shim. The remainder is the shim needed on the pinion gear side of the differential.

EXAMPLE: Total Differential Shim - Ring Gear Side Shim = Pinion Gear Side Shim.

21. Rotate the dial indicator out of the way on the pilot stud.
22. Remove the differential case with dummy bearings from the differential housing.
23. Install the differential side bearings on the differential case. Refer to **REMOVAL AND INSTALLATION**.

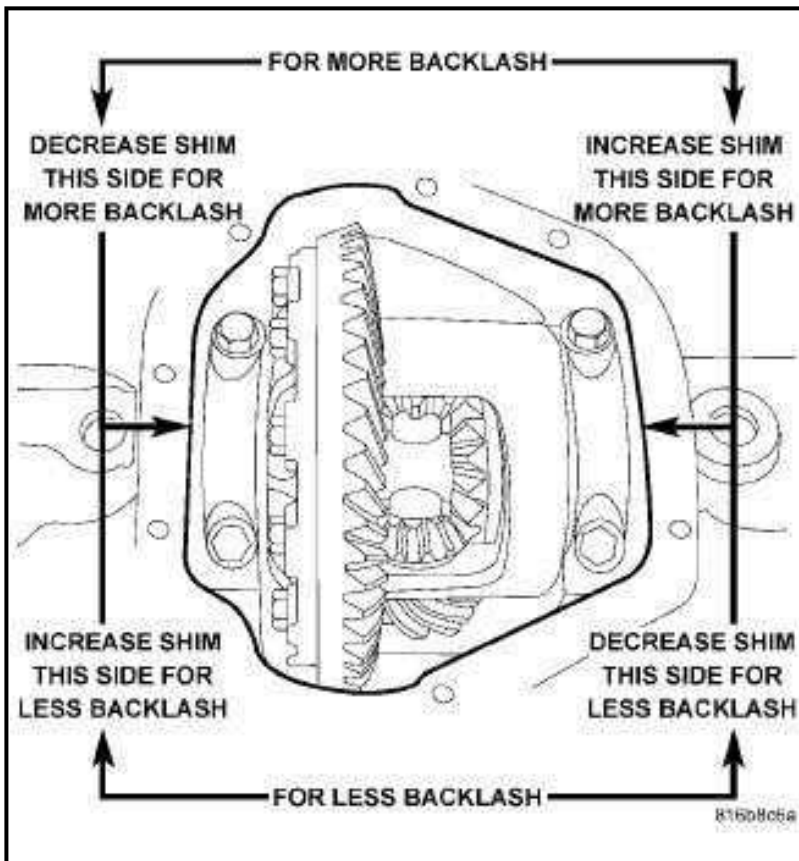
CAUTION: Never spread housing over 0.50 mm (0.020 in.). Failure to follow these instruction could result in distorting the housing.

24. Install the differential assembly into the differential housing. Refer to **REMOVAL AND INSTALLATION**.
25. Install the differential bearing caps and tighten the differential bearing cap bolts to the proper torque specification.
26. Remove the spreader from the differential housing.
27. Rotate the differential case several times to seat the differential side bearings.



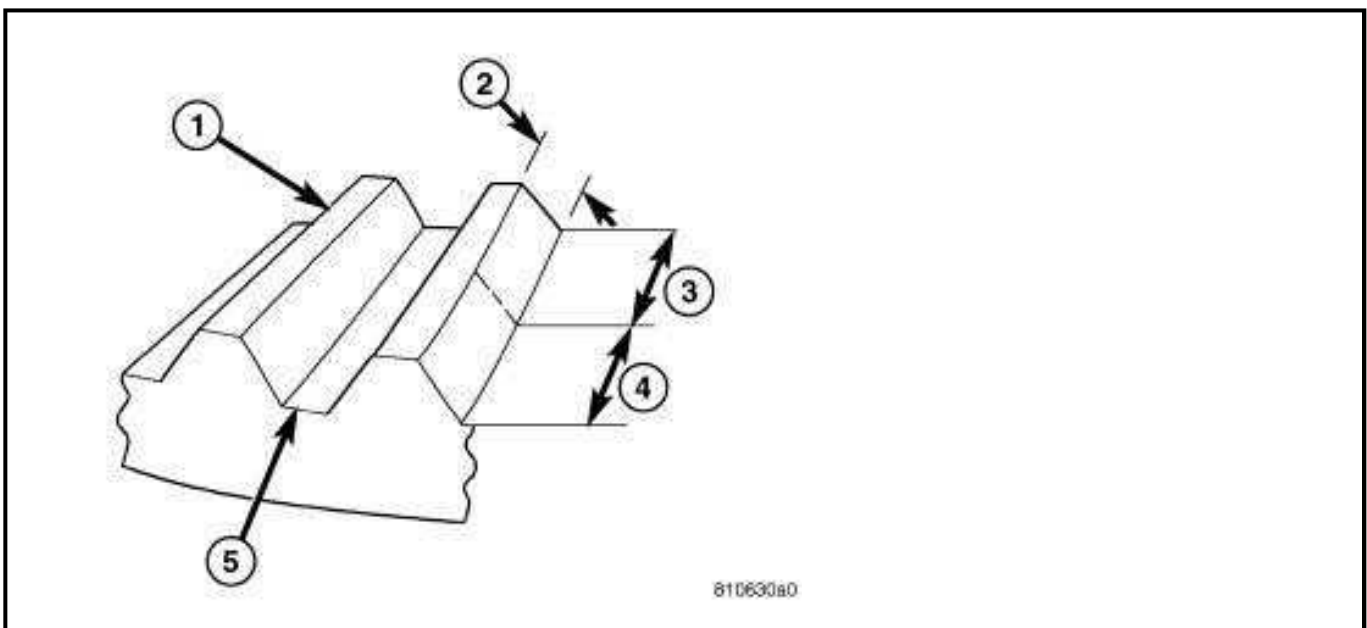
1 - Dial Indicator Plunger

28. Position the dial indicator plunger against a ring gear tooth.
29. Push and hold the ring gear upward while holding the pinion gear.
30. Zero the dial indicator face to pointer.



31. Push and hold the ring gear downward while holding the pinion gear. The dial indicator reading should be between 0.12 mm - 0.20 mm (0.005 in - 0.008 in). If the backlash is not within specifications transfer the necessary amount of shim thickness from one side of the axle housing to the other.
32. Verify the differential case and ring gear run-out by measuring ring to pinion gear backlash at eight locations around the ring gear. Readings should not vary more than 0.05 mm (0.002 in.). If the readings vary more than specified, the ring gear or the differential case is defective.
33. After the proper backlash is achieved, perform Gear Contact Pattern procedure.

GEAR CONTACT PATTERN



The ring gear and pinion teeth contact patterns will show if the pinion depth is correct in the housing. It will also show if the ring gear backlash has been adjusted correctly. The backlash can be adjusted within specifications to achieve desired tooth contact patterns.

The top land (1) of the gear tooth is the top surface of the tooth. The profile (2) of the gear tooth is the depth of the tooth. The toe (3) of the gear is the portion of the tooth surface at the end towards the center. The heel (4) of the gear is the portion of the tooth at the outer-end. The root (5) of the gear tooth is the lowest portion of the tooth.

NOTE: If the profile across the tooth is the same it is a three axis cut gear. If the profile across the tooth is tapered it is a two axis cut gear.

1. Apply a thin coat of hydrated ferric oxide or equivalent to the drive and coast side of the ring gear teeth.
2. Wrap, twist and hold a shop towel around the pinion yoke to increase the turning resistance of the pinion. This will provide a more distinct contact pattern.
3. With a boxed end wrench on the ring gear bolt, rotate the differential case one complete revolution in both directions while a load is being applied from shop towel.

The areas on the ring gear teeth with the greatest degree of contact against the pinion teeth will squeegee the compound to the areas with the least amount of contact. Note and compare patterns on the ring gear teeth to Gear Tooth Contact Patterns chart adjust pinion depth and gear backlash as necessary.

DRIVE SIDE HEEL TOE	CONDITION	COAST SIDE TOE HEEL	CONDITION	ACTION REQUIRED
	Desirable pattern. The drive pattern should be centered on the tooth. There should be some clearance between the pattern and the top of the tooth.		Desirable pattern. The coast pattern should be centered on the tooth, but may be slightly toward the toe. There should be some clearance between the pattern and the top of the tooth.	None
	Top toe contact		Top heel contact	Backlash correct. Thicker pinion position shim required.
	Root heel contact		Root toe contact	Backlash correct. Thinner pinion position shim required.
	Top heel contact		Top toe contact	Pinion position shim correct. Decrease backlash.
	Root toe contact		Root heel contact	Pinion position shim correct. Increase backlash.

TOTAL TORQUE TO ROTATE CHECK

The final check on the differential assembly before installing the axle shafts is, torque to rotate pinion and differential combined. This will verify the correct differential bearing preload.

Total Torque To Rotate (TTTR) is 1.8 - 5.8 N.m (16 - 51 in. lbs.).

NOTE: If TTTR is high, decrease the washer thickness equally on both sides of the differential and check TTTR again. If TTTR is low, increase the washer thickness equally on both sides of the differential and check TTTR again.

REAR AXLE - M220

DESCRIPTION	SPECIFICATIONS	COMMENT
Axle Retainer Nuts	80 N.m (59 Ft. Lbs.)	-
Bearing Cap Bolts	95 N.m (70 Ft. Lbs.)	-
Differential Cover Bolts	41 N.m (30 Ft. Lbs.)	Do not reuse these fasteners. If removed, a NEW fastener must be installed and tightened to specifications.
Drain Plug	34 N.m (25 Ft. Lbs.)	-
Fill Plug	34 N.m (25 Ft. Lbs.)	-
Pinion Nut	488 N.m (360 Ft. Lbs.)	Do not reuse these fasteners. If removed, a NEW fastener must be

DESCRIPTION	SPECIFICATIONS	COMMENT
		installed and tightened to specifications.
Ring Gear Bolts	Torque Procedure: 1. Tighten to 100 N.m (74 Ft. Lbs.) 2. Rotate additional 57.5B°	Do not reuse these fasteners. If removed, a NEW fastener must be installed and tightened to specifications.
Rear Axle Vent Fitting	22 N.m (17 Ft. Lbs.)	-

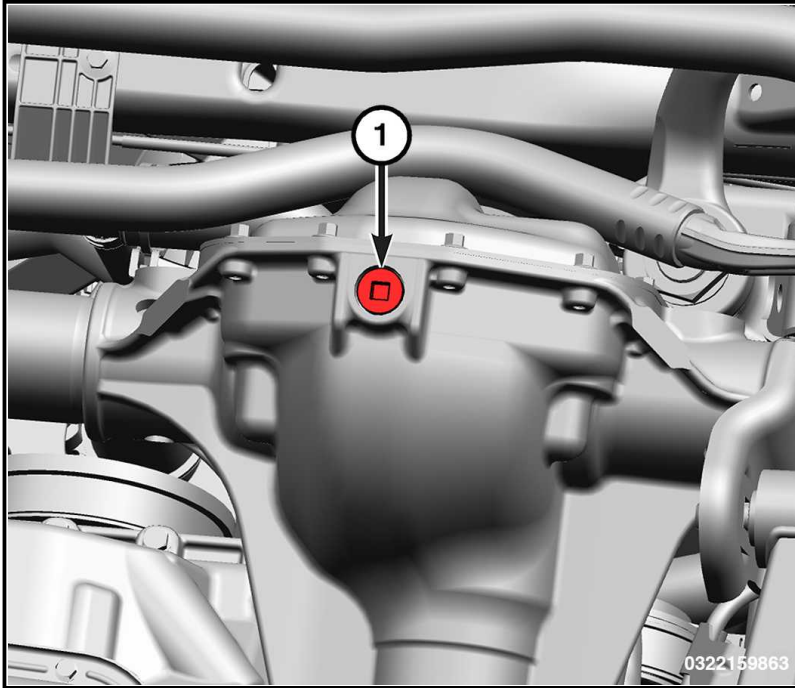
2021 GENERAL INFORMATION

Axle Assembly Standard Procedure - Gladiator

STANDARD PROCEDURE

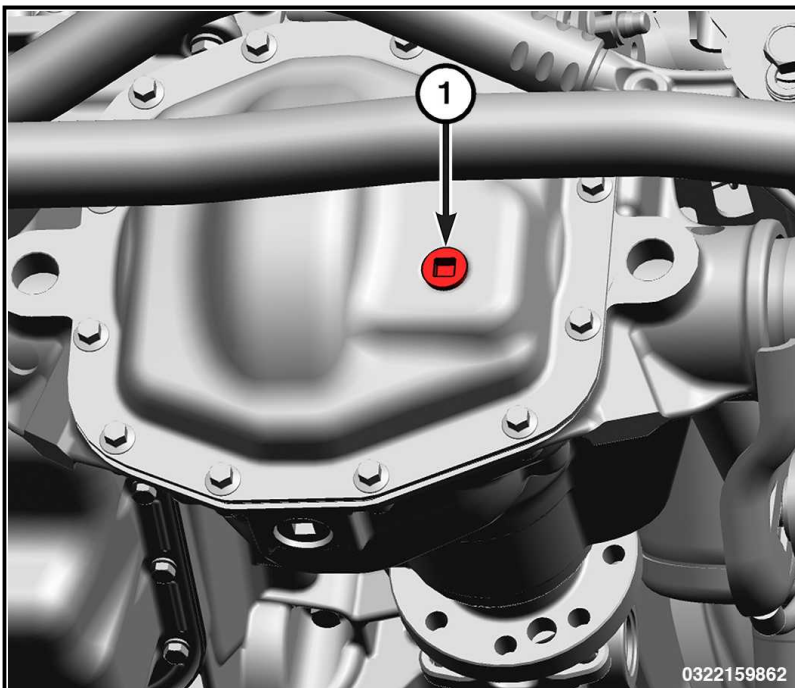
DRAIN AND FILL - M210 FRONT AXLE

DRAIN



1. Remove differential drain plug (1).
2. Drain fluid into a suitable container and dispose of properly.
3. After all fluid is drained, clean sealing surface and install drain plug to. Refer to [TORQUE SPECIFICATIONS](#) .

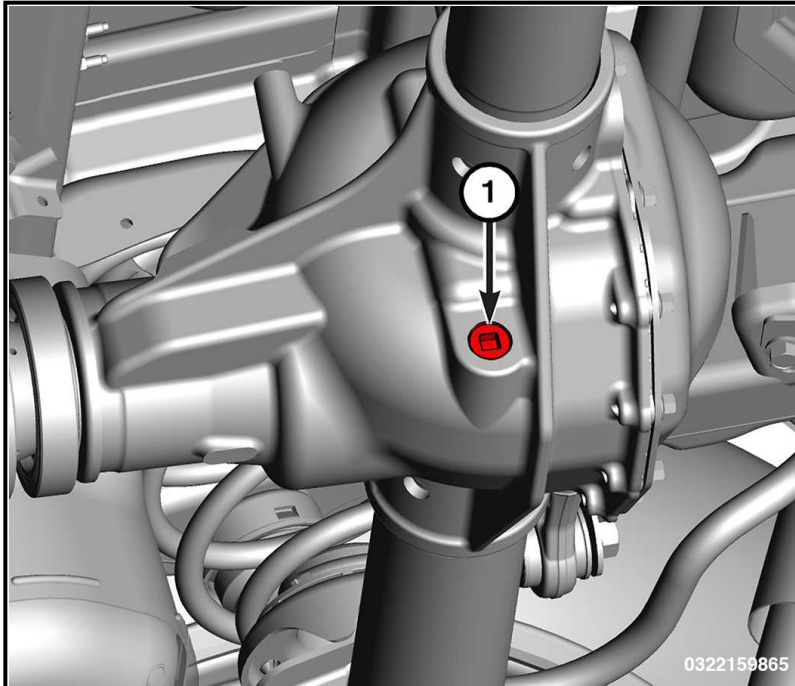
FILL



1. Remove fill plug (1).
2. With the axle level, fill carrier with lubricant. Refer to [CAPACITIES AND RECOMMENDED FLUIDS, SPECIFICATIONS](#) .
3. Install fill plug, and torque to. Refer to [TORQUE SPECIFICATIONS](#) .

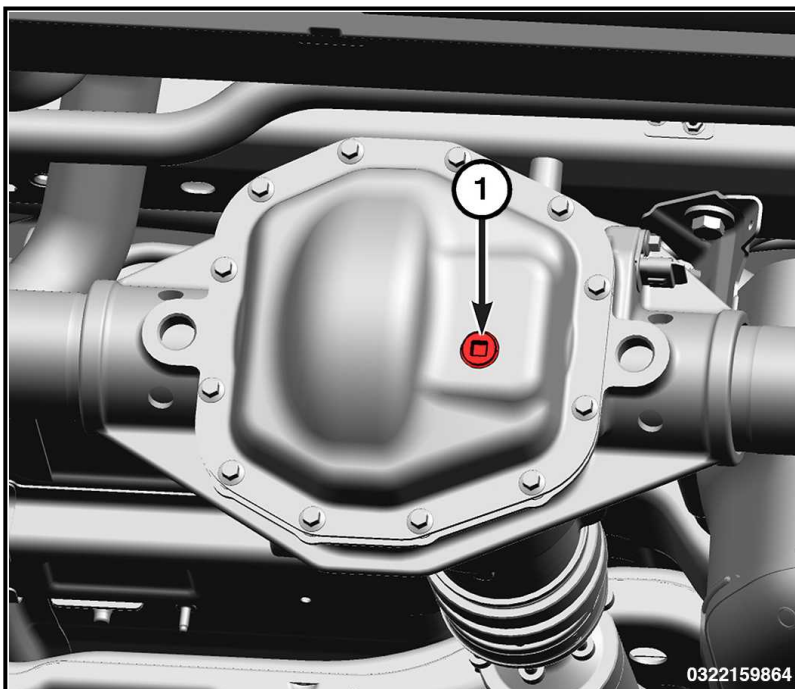
DRAIN AND FILL - M220 REAR AXLE

DRAIN



1. Remove differential drain plug (1).
2. Drain fluid into a suitable container and dispose of properly.
3. After all fluid is drained, clean sealing surface and install drain plug to. Refer to [TORQUE SPECIFICATIONS](#) .

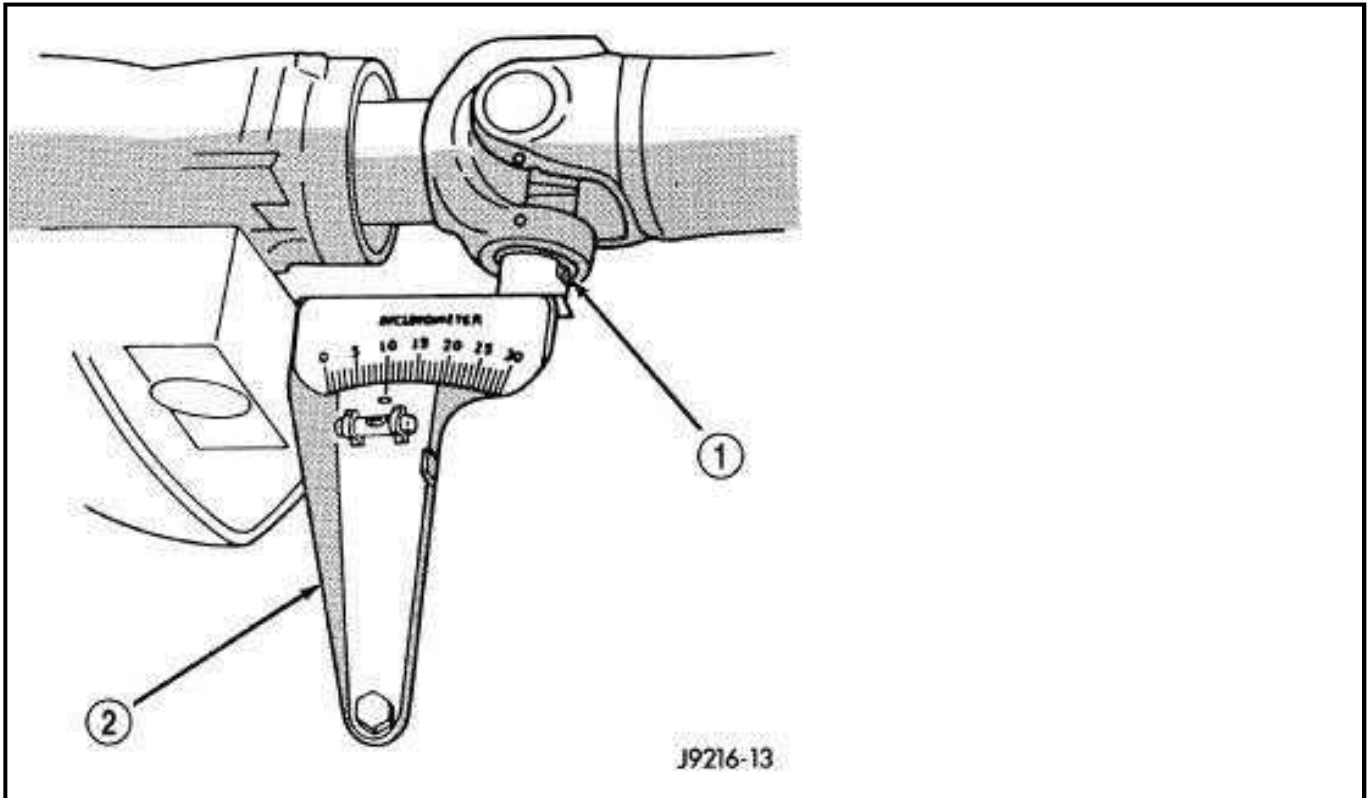
FILL



1. Remove fill plug (1).

2. With the axle level, fill carrier with lubricant. Refer to **CAPACITIES AND RECOMMENDED FLUIDS, SPECIFICATIONS** .
3. Install fill plug, and torque to. Refer to **TORQUE SPECIFICATIONS** .

STANDARD PROCEDURE - PROPELLER SHAFT ANGLE

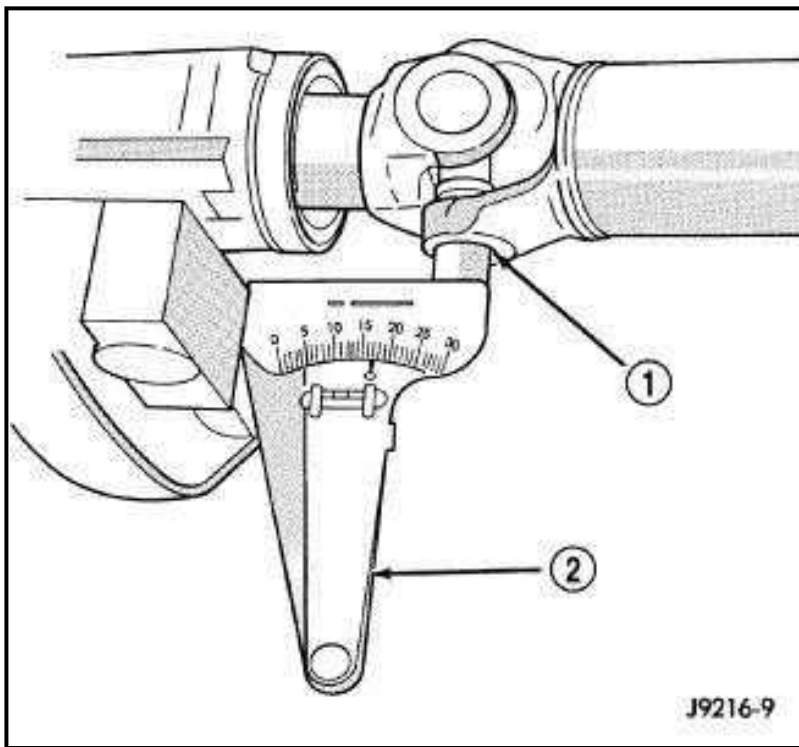


To obtain front (output) angle on a C/V propeller shaft, place Inclinator (special tool #7663, Inclinator) on the machined ring of the pinion flange. To obtain propeller shaft angle measurement on the C/V front propeller shaft, place inclinometer on the propeller shaft tube. To obtain rear (output) angle on rear propeller shaft use transfer case/transmission flange.

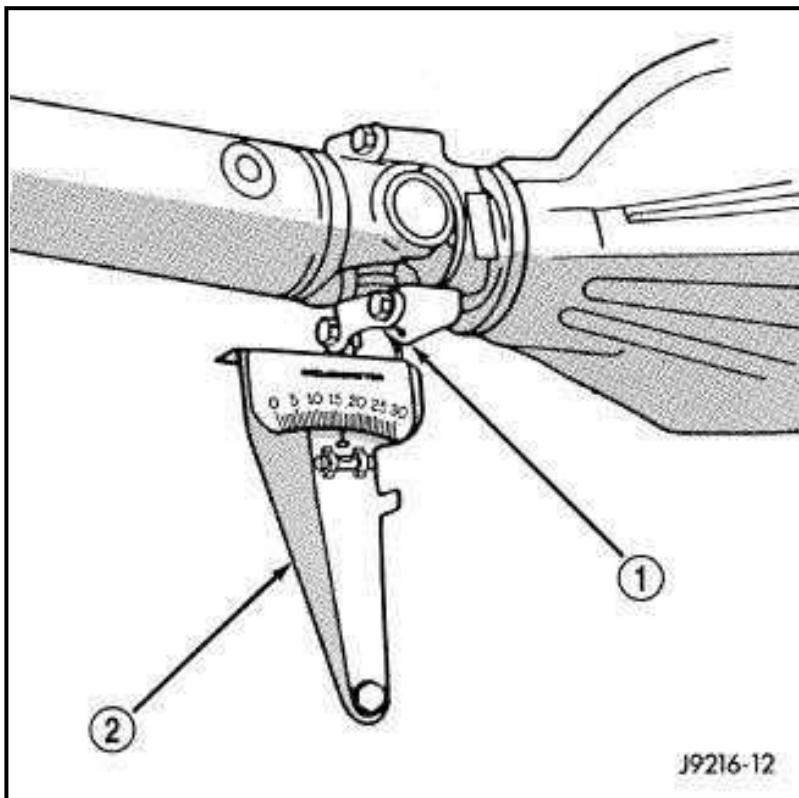
1. Raise and support the vehicle at the axles as level as possible. Allow the wheels and propeller shaft to turn.
2. Remove universal joint snap rings if equipped, so inclinometer base sits flat.
3. Rotate shaft until transmission/transfer case output yoke bearing cap is facing downward.

NOTE: Always make measurements from front to rear and from the same side of the vehicle.

4. Place inclinometer (2) on yoke bearing cap (1) or pinion flange ring parallel to the shaft. Center bubble in sight glass and record measurement. This measurement will give you the transmission or Output Yoke Angle (A).



5. Rotate propeller shaft 90 degrees and place inclinometer (2) on yoke bearing cap (1) or propeller shaft tube on C/V propeller shaft, parallel to the shaft. Center bubble in sight glass and record measurement. This measurement can also be taken at the rear end of the shaft. This measurement will give you the propeller shaft angle (C)
6. Subtract smaller figure from larger (C minus A) to obtain transmission output operating angle.



7. Rotate propeller shaft 90 degrees and place inclinometer (2) on pinion yoke bearing cap (1) parallel to the shaft. Center bubble in sight glass and record measurement. This measurement will give you the pinion shaft or input yoke angle (B).
8. Subtract smaller figure from larger (C minus B) to obtain axle Input Operating Angle.

RULES

Good cancellation of U-joint operating angles is within 1 degree.

Operating angles less than 3 degrees (U-joint system).

Operating angles less than 10 degrees for constant velocity joint.

At least 1/2 of one degree continuous operating (propeller shaft) angle. On one U-joint system less than 1 1/2 degree operating angle.

2021 GENERAL INFORMATION

Axle Assembly Technical Specifications - Gladiator

TECHNICAL SPECIFICATIONS

GENERAL SPECIFICATIONS - M210 AXLE

AXLE

DESCRIPTION	SPECIFICATION
Available Axle Ratios	3.73, 4.10
Ring Gear Diameter	210 mm (8.27 in.)
Ring Gear Runout	0.07 mm (0.003 in.)
Ring Gear Backlash	0.08 - 0.15 mm (0.003 - 0.006 in.)
Pinion Torque To Rotate - New Bearing	1.57 - 2.92 N.m (14 - 26 in. lbs.)
Total Torque To Rotate: Pinion Torque To Rotate plus	0.45 - 0.95 N.m (4 - 8 in. lbs.)
Axle Lubricant	SAE 75W85 - 1.03 Liter Capacity

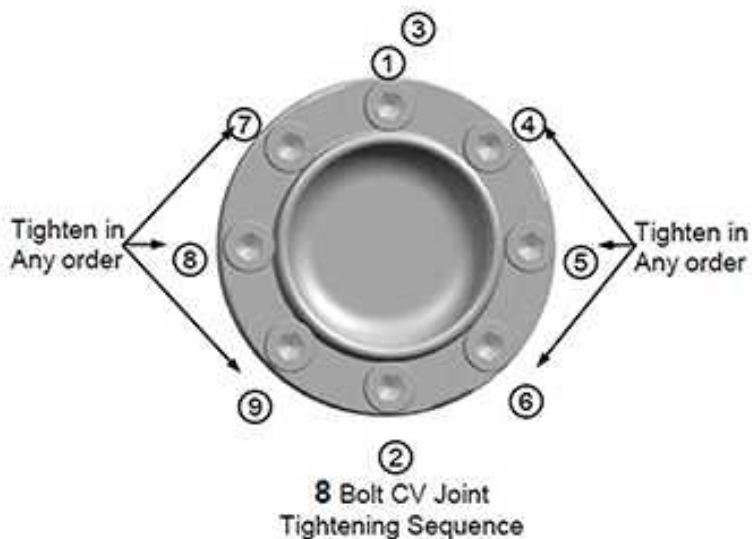
GENERAL SPECIFICATIONS

DESCRIPTION	SPECIFICATION
Axle Ratio	3.45, 3.73, 4.10
Axle Shaft Flange Runout	0.13 mm (0.005 in.)
Ring Gear Diameter	220 mm (8.66 in.)
Ring Gear Runout	0.07 mm (0.003 in.)
Ring Gear Backlash	0.12 - 0.20 mm (0.005 - 0.008 in.)
Pinion Torque To Rotate - New Bearings	1.3 - 2.3 N.m (12 - 20 in. lbs.)
Total Torque To Rotate	1.8 - 5.8 N.m (16 - 51 in. lbs.)
Axle Lubricant	SAE 75W85 at 1.45L (1.36L with Trac-Lok™) capacity - Models with Trac-Lok™ require a Trac-Lok™ additive and 0.07L of friction modifier Refer to <u>CAPACITIES AND RECOMMENDED FLUIDS, SPECIFICATIONS</u> .

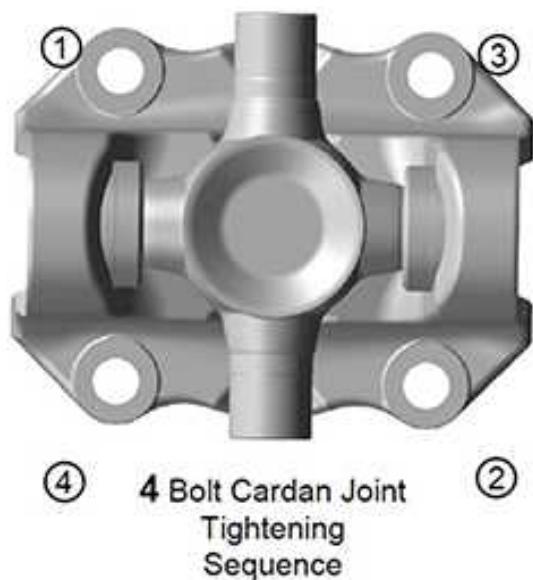
TORQUE SPECIFICATIONS

DRIVESHAFTS

Identify the proper CV joint bolt configuration, four or eight bolts, and begin with the first bolt referred to as "1", follow the torque sequence as indicated. In the case where there are two numbers shown for a given bolt it indicates the bolt is to be torqued again within the sequence.



0306131396



0306131397

DESCRIPTION	SPECIFICATION	COMMENT
Front Driveshaft to Front Axle Flange Bolts	121 N.m (89 Ft. Lbs.)	Do not reuse these fasteners. If removed, a NEW fastener must be installed and tightened to specifications. Torque and secure in a crisscross pattern.
Front Driveshaft to Transfer-Case Flange Bolts	39 N.m (29 Ft. Lbs.)	Do not reuse these fasteners. If removed, a NEW fastener must be installed and tightened to specifications. Torque and secure in a crisscross pattern.
Rear Driveshaft to Transfer-Case Flange Bolts	39 N.m (29 Ft. Lbs.)	Do not reuse these fasteners. If removed, a NEW fastener must be installed and tightened to specifications. Torque and secure in a crisscross pattern.
Rear Driveshaft to Rear Axle Flange Bolts	39 N.m (29 Ft. Lbs.)	Do not reuse these fasteners. If removed, a NEW fastener must be installed and tightened to specifications. Torque and secure in a crisscross pattern.

DESCRIPTION	SPECIFICATION	COMMENT
Rear Driveshaft Carrier Bearing to Frame	62 N.m (46 Ft. Lbs.)	-

FRONT AXLE - M210

DESCRIPTION	SPECIFICATIONS	COMMENT
Bearing Cap Bolts	108 N.m (80 Ft. Lbs.)	-
Differential Cover Bolts	Torque Procedure: 1. Tighten to 20 N.m (15 Ft. Lbs.) 2. Rotate additional 20B°	Tightening Sequence
Differential Drain Plug	34 N.m (25 Ft. Lbs.)	-
Differential Fill Plug	34 N.m (25 Ft. Lbs.)	-
Front Axle Disconnect Skid Plate Bolts	42 N.m (31 Ft. Lbs.)	-
Front Axle Disconnect Bolts	18 N.m (13 Ft. Lbs.)	Do not reuse these fasteners. If removed, a NEW fastener must be installed and tightened to specifications.
Pinion Flange Nut	217 N.m (160 Ft. Lbs.)	Do not reuse these fasteners. If removed, a NEW fastener must be installed and tightened to specifications.
Ring Gear Bolts	136 N.m (100 Ft. Lbs.)	Do not reuse these fasteners. If removed, a NEW fastener must be installed and tightened to specifications.

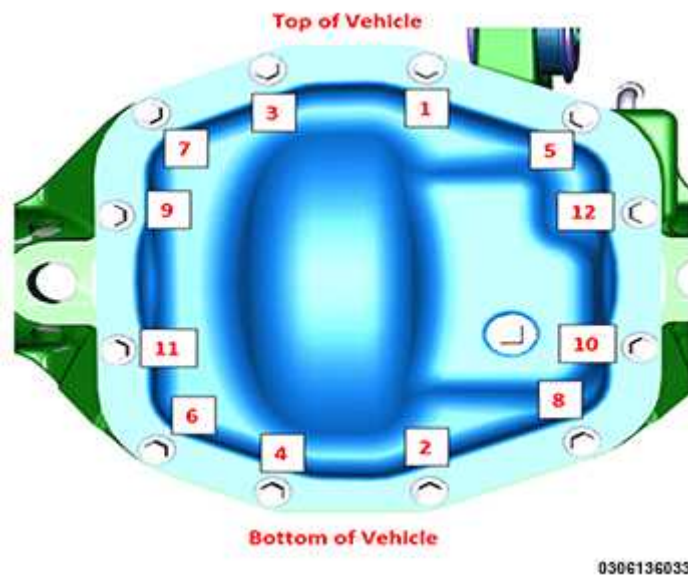


Fig. 1: Differential Cover Bolts Tightening Sequence

Courtesy of CHRYSLER GROUP, LLC

REAR AXLE - M220

DESCRIPTION	SPECIFICATIONS	COMMENT
Axle Retainer Nuts	80 N.m (59 Ft. Lbs.)	-

DESCRIPTION	SPECIFICATIONS	COMMENT
Bearing Cap Bolts	95 N.m (70 Ft. Lbs.)	-
Differential Cover Bolts	41 N.m (30 Ft. Lbs.)	Do not reuse these fasteners. If removed, a NEW fastener must be installed and tightened to specifications.
Drain Plug	34 N.m (25 Ft. Lbs.)	-
Fill Plug	34 N.m (25 Ft. Lbs.)	-
Pinion Nut	488 N.m (360 Ft. Lbs.)	Do not reuse these fasteners. If removed, a NEW fastener must be installed and tightened to specifications.
Ring Gear Bolts	Torque Procedure: 1. Tighten to 100 N.m (74 Ft. Lbs.) 2. Rotate additional 57.5B°	Do not reuse these fasteners. If removed, a NEW fastener must be installed and tightened to specifications.
Rear Axle Vent Fitting	22 N.m (17 Ft. Lbs.)	-

2021 GENERAL INFORMATION

Axle Assembly - Gladiator

REMOVAL AND INSTALLATION

FRONT AXLE ASSEMBLY - M210

REMOVAL

1. Raise and support the vehicle. Refer to [HOISTING, STANDARD PROCEDURE](#).
2. Position and secure a lift under the axle.



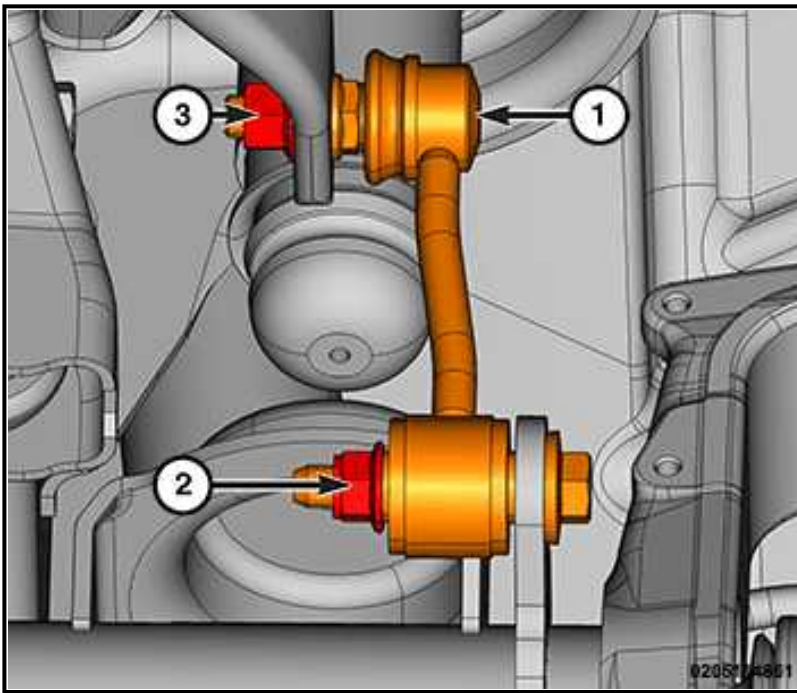
1 - Front Driveshaft Flange
2 - Front Axle Flange

3. Mark an installation reference line across the front driveshaft flange and the axle flange.

CAUTION:

Driveshaft removal is a two-person operation. Never allow the driveshaft to hang from the center bearing, or while only connected to the transmission or rear axle flanges. An assistant is required. If a driveshaft section is hung unsupported, damage may occur to the shaft, joint and center bearing from over-angulation. This may result in driveline vibrations or component failure.

4. Disconnect the TRU-LOK wire harness connectors and axle vent hose.
5. Remove the calipers and rotors from the axle. Refer to [ROTOR, BRAKE, REMOVAL AND INSTALLATION](#).
6. Remove the wheel speed sensors from the hub bearings. Refer to [SENSOR, WHEEL SPEED, FRONT, REMOVAL AND INSTALLATION](#).
7. Remove brake lines and sensor wiring from the axle.

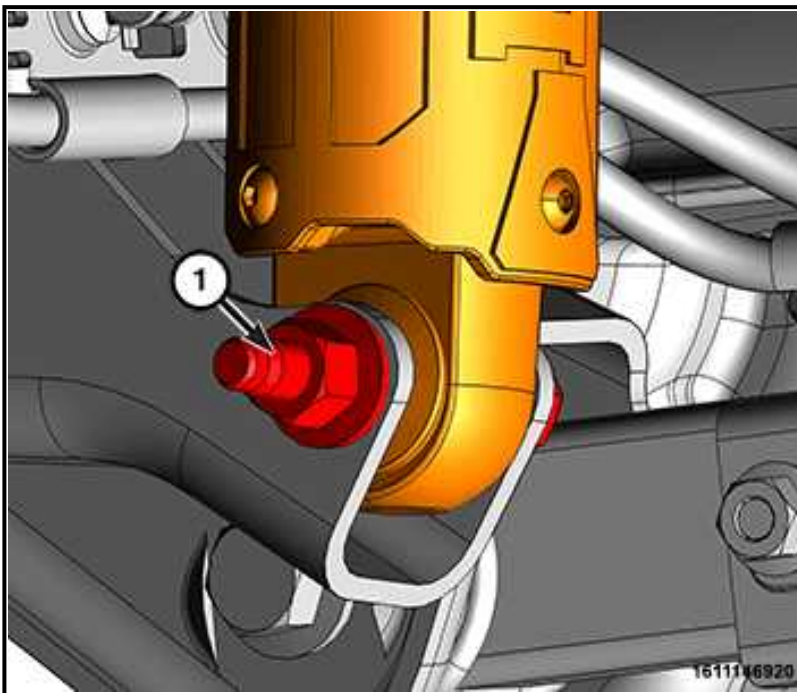


1 - Stabilizer Bar Link

2 - Lower Nut

3 - Upper Nut

8. Remove the stabilizer bar links from the axle brackets.



1 - Lower Shock Bolt and Nut

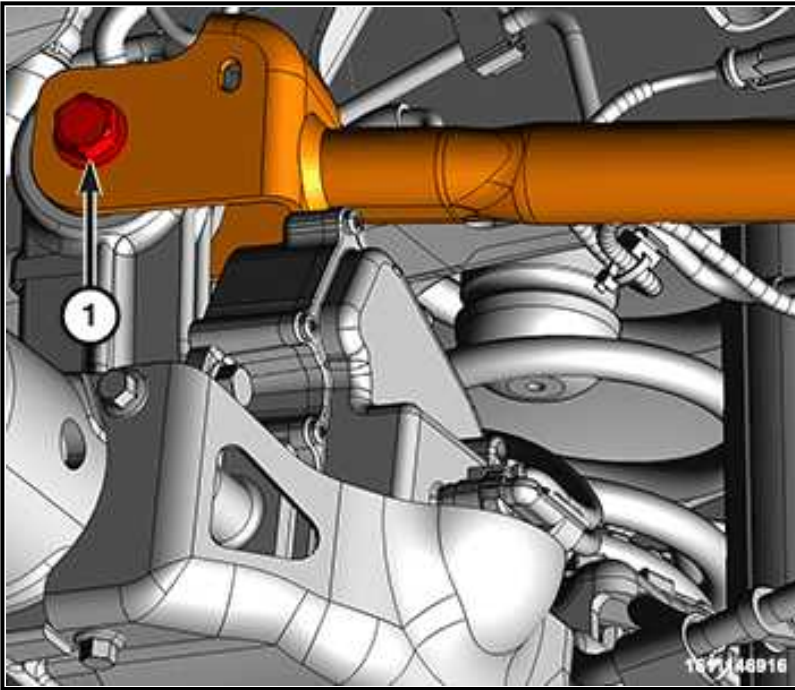
9. Remove the bolt and nut from the lower shock absorber mount.

10. Remove the drag link. Refer to [**DRAG LINK, STEERING, REMOVAL AND INSTALLATION**](#) .

11. Remove the steering damper from the axle. Refer to [**DAMPER, STEERING, REMOVAL AND INSTALLATION**](#) .

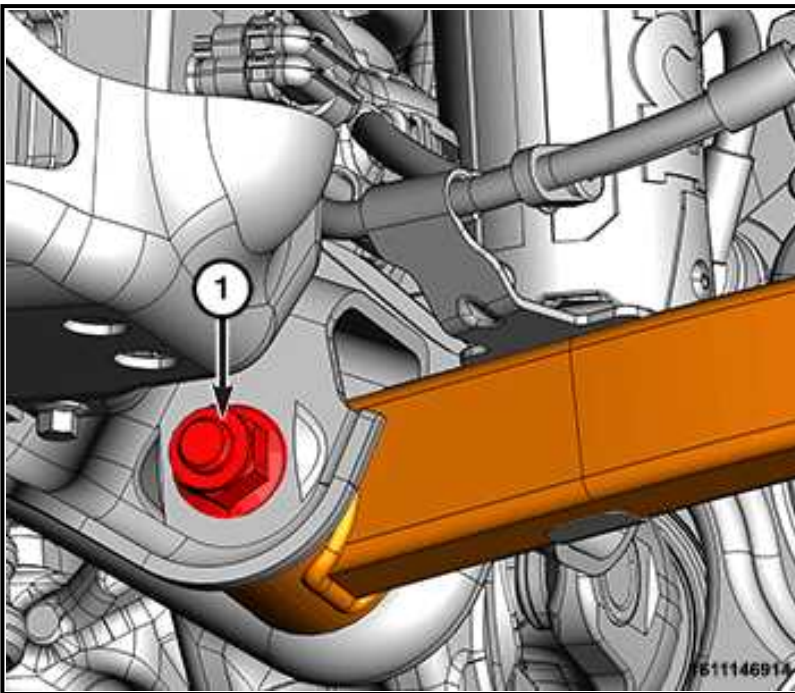
12. Remove the track bar from the axle. Refer to [**TRACK BAR, FRONT, REMOVAL AND INSTALLATION**](#) .

13. Remove the tie rod ends from the knuckles and place out of the way. Refer to [**END, TIE ROD, REMOVAL AND INSTALLATION**](#) .



1 - Upper Control Arm Bolts

14. Remove the upper control arm bolts from the axle brackets.



1 - Lower Control Arm Bolts

15. Mark the lower control arm cams and loosen the lower control arm bolts.

16. Lower the axle enough to remove the coil springs from the axle.

17. Remove the lower control arm bolts and remove the axle from vehicle.

INSTALLATION

During installation, torque the fasteners to the specifications in the torque table(s) below.

Follow the removal procedure in reverse for general reassembly of the components on the vehicle. The steps listed below are calling out specific procedures that should be followed during installation.

CAUTION:

The weight of the vehicle must be supported by the springs before suspension arms and track bar fasteners can be tightened. Failure to follow these instruction will result in damaging the bushings.

- Loosely tighten the upper and lower control arm bolts until after the axle is installed and all other bolts are torqued. Torque the upper and lower control arm bolts last.
- Verify that the lower control arm cams are aligned to the reference marks before tightening to specification.
- Install the driveshaft with the axle flange and driveshaft marks aligned and tighten the **NEW** bolts to the proper torque specification.

TORQUE SPECIFICATIONS**REAR AXLE ASSEMBLY - M220****REMOVAL**

1. Raise and support the vehicle

Refer to **HOISTING, STANDARD PROCEDURE** .

2. Position and secure a lift under the axle.

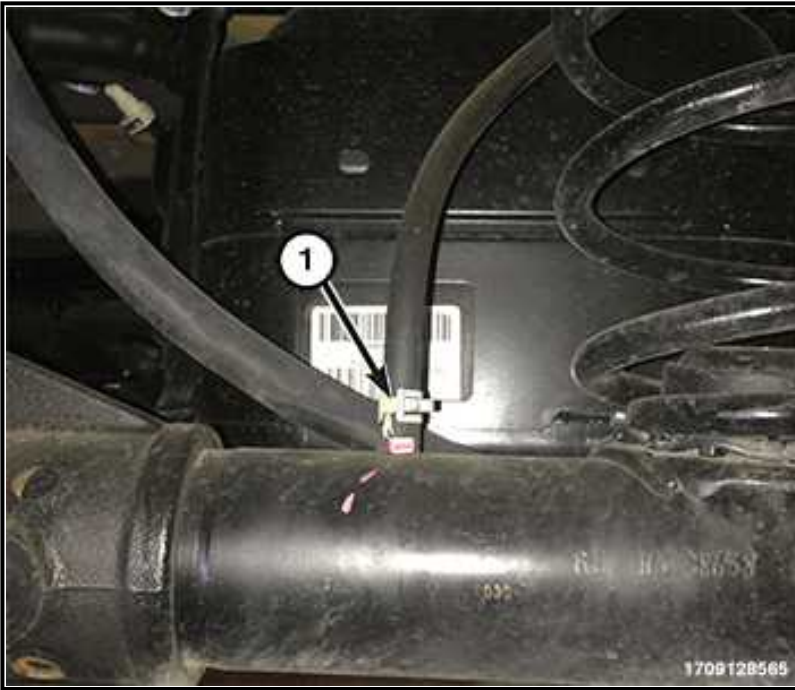


1 - Front Driveshaft Flange
2 - Front Axle Flange

3. Index mark the driveshaft flange and the axle pinion flange for installation reference.
4. Remove and **DISCARD** the driveshaft bolts. Remove and secure the driveshaft.

CAUTION:

Driveshaft removal is a two-person operation. Never allow the driveshaft to hang from the center bearing, or while only connected to the transmission or rear axle flanges. An assistant is required. If a driveshaft section is hung unsupported, damage may occur to the shaft, joint and center bearing from over-angulation. This may result in driveline vibrations or component failure.



1 - Vent Hose

5. Remove the vent hose from the axle tube.

NOTE: When servicing or replacing the rear axle you **MUST** replace the rear hose vent fitting.

6. If equipped, disconnect the power hop damper. Refer to [DAMPER, POWER HOP, REMOVAL AND INSTALLATION](#) .

7. If equipped, disconnect the axle locker wire harness connectors.

8. Remove the brake calipers and rotors from the axle. Refer to [ROTOR, BRAKE, REMOVAL AND INSTALLATION](#) .

9. As necessary, remove the park brake cables from the axle. Refer to [CABLE, PARKING BRAKE, REMOVAL AND INSTALLATION](#) .

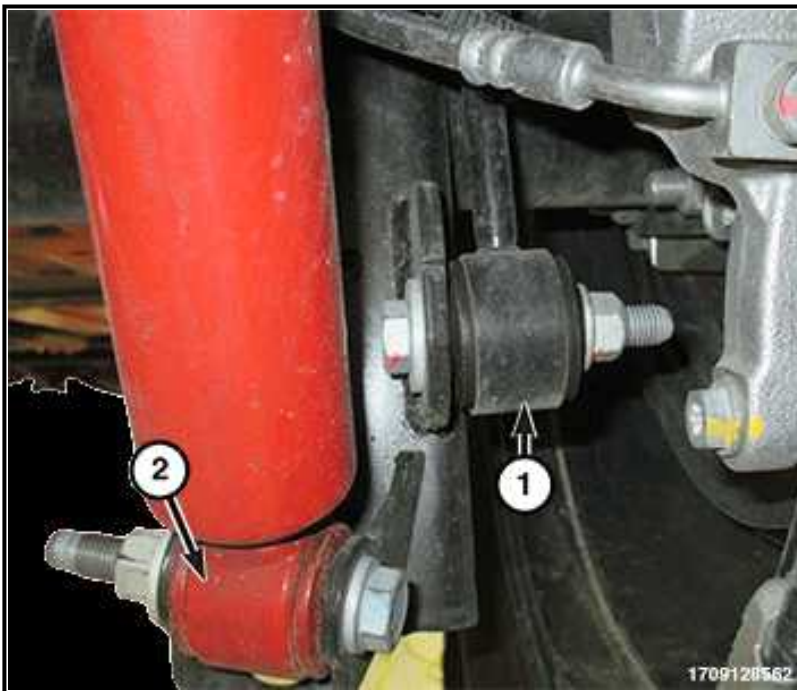
10. Disconnect the rear wheel speed sensor wire harness connectors.



1 - Track Bar

2 - Axle Bracket

11. Remove the track bar bolt and nut and remove the track bar from the axle bracket.

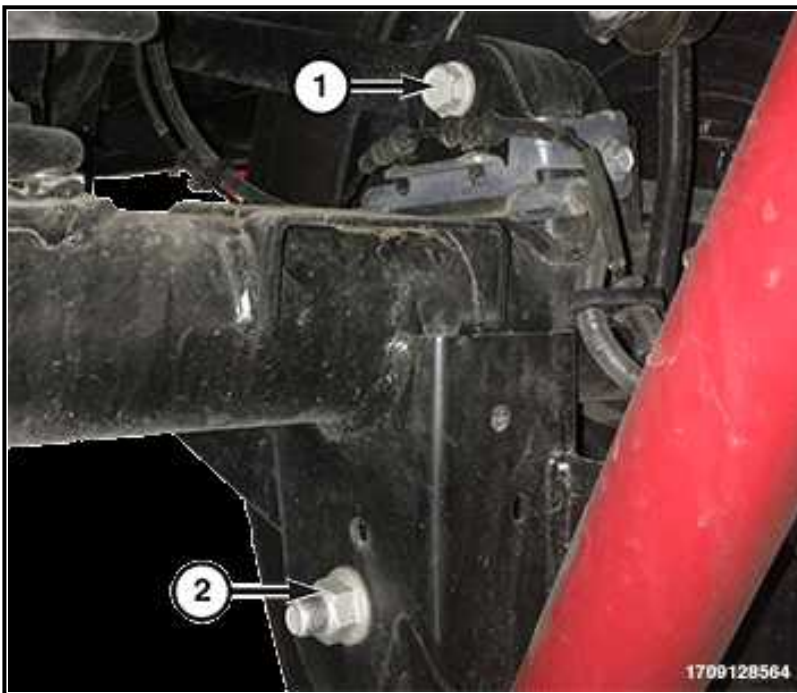


1 - Stabilizer Links

2 - Shock Absorbers

12. Remove the stabilizer bar link bolts and nuts and remove the stabilizer links from the axle brackets.

13. Remove the shock absorber bolts and nuts and remove the shock absorbers from the axle brackets.



1 - Upper Control Arm Bolts

2 - Lower Control Arm Bolts

14. Remove the upper control arm bolts and nuts and upper control arms from the axle brackets.

15. Loosen the lower control arm bolts and nuts and lower the axle enough to remove the coil springs and spring insulators.

16. Remove the lower control arm from the axle brackets.
17. Lower and remove the axle.

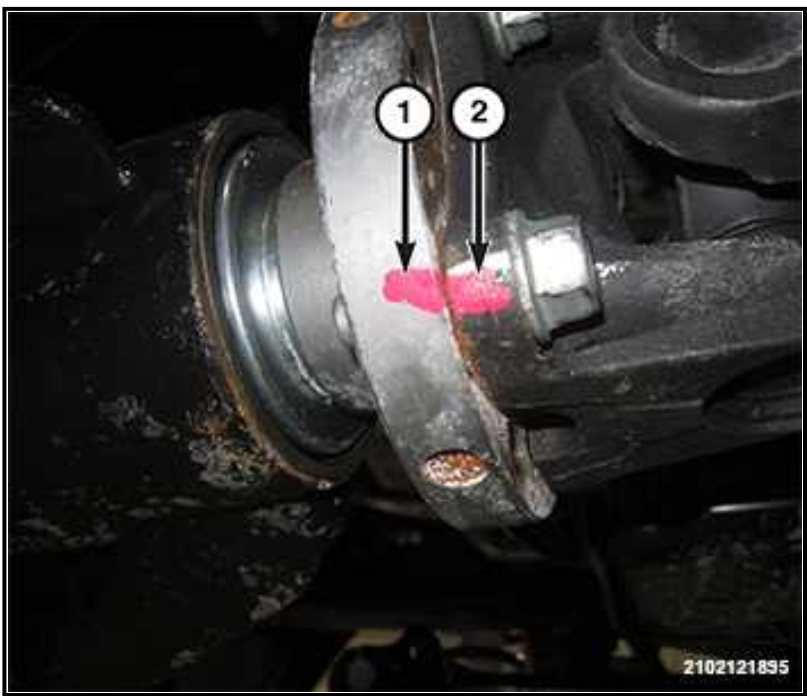
INSTALLATION

During installation, torque the fasteners to the specifications in the torque table(s) below.

Follow the removal procedure in reverse for general reassembly of the components on the vehicle. The steps listed below are calling out specific procedures that should be followed during installation.

CAUTION: The weight of the vehicle must be supported by the springs before the control arms and track bar are tightened. Failure to follow these instruction will cause premature bushing failure.

- The track bar, upper and lower control arm bolts should be loosely tightened until all other components are tightened.



1 - Front Driveshaft Flange
2 - Front Axle Flange

- Install the driveshaft with the driveshaft flange and pinion flange reference marks aligned. Driveshaft bolts must be replaced with **NEW** bolts. If **NEW** bolts are not available clean the old bolts and apply MoparB® Lock and Seal Adhesive or equivalent.
- Torque the track bar, upper and lower control arm bolts last with the weight of the vehicle on the axle.

TORQUE SPECIFICATIONS

2021 GENERAL INFORMATION

Axle Locker Actuator/Motor - Gladiator

REMOVAL AND INSTALLATION

AXLE LOCK ACTUATOR - M210

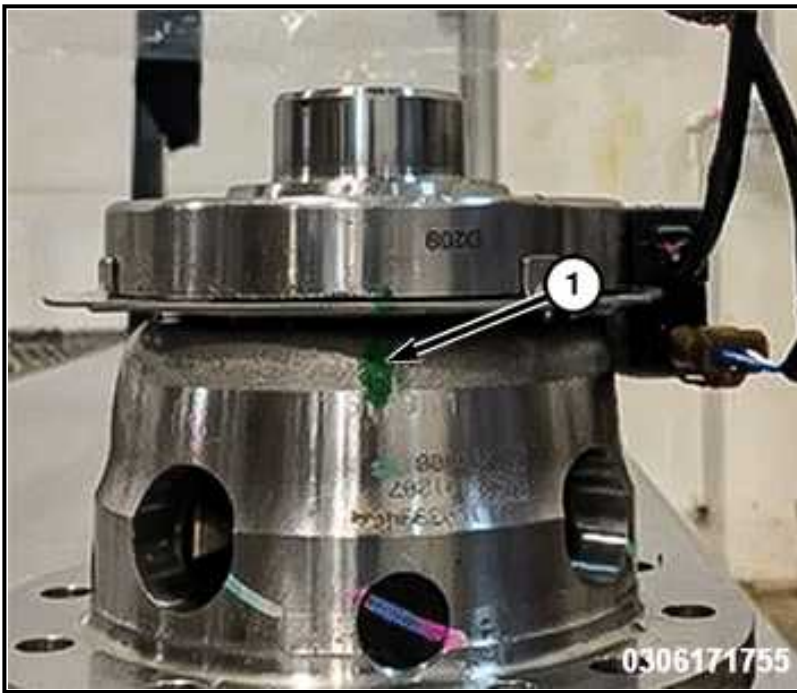
REMOVAL

1. Remove the differential assembly from the axle housing. Refer to [REMOVAL AND INSTALLATION](#).



1 - Puller Press
2 - Bearing Adaptor
3 - Differential Case

2. Remove the bearing from the actuator side of the differential case using the (special tool #C-293-PA, Puller, Press), Plug (special tool #C-293-3, Adapter, Bearing/Gear), and six blocks (special tool #C-293-47, Block Set, Puller).



1 - Differential Case

3. Mark the orientation of the actuator and pressure plate to the differential case.



1 - Actuator

2 - Pressure Plate

3 - Differential Case

4. Remove the actuator from the pressure plate and from the differential case.

INSTALLATION

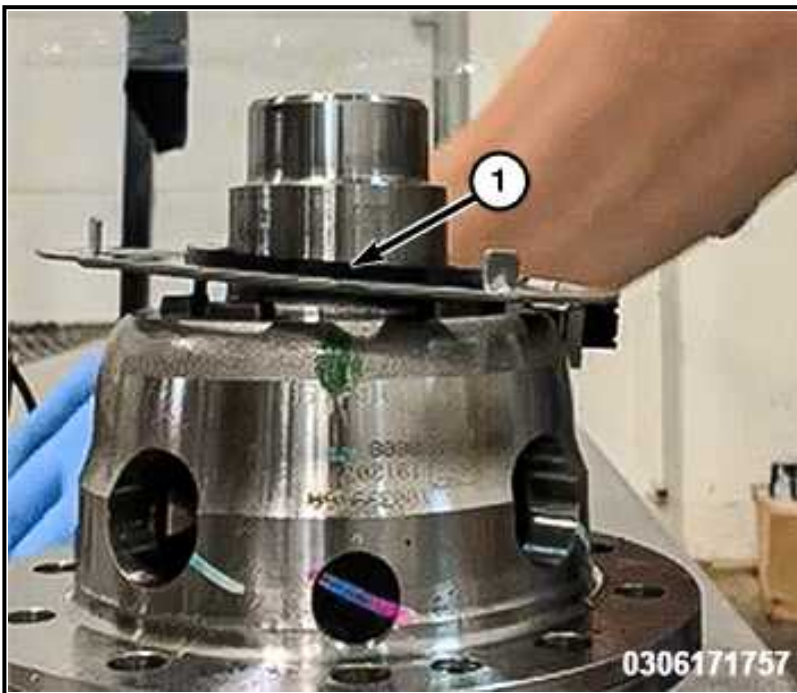
During installation, torque the fasteners to the specifications in the torque table(s) below.



1 - Pressure Plate

1. Place the pressure plate onto the differential case. Align the tabs of the pressure plate to the differential case.

NOTE: Shown without ring gear installed.



1 - Spacer

2. Place the spacer inside the pressure plate.



1 - Actuator

3. With the actuator upside-down, use the actuator to press and seat the pressure plate onto the differential case using hand pressure.



1 - Spacer

4. Remove the actuator and spacer from the pressure plate.
5. Install the spacer onto the actuator.



1 - Actuator

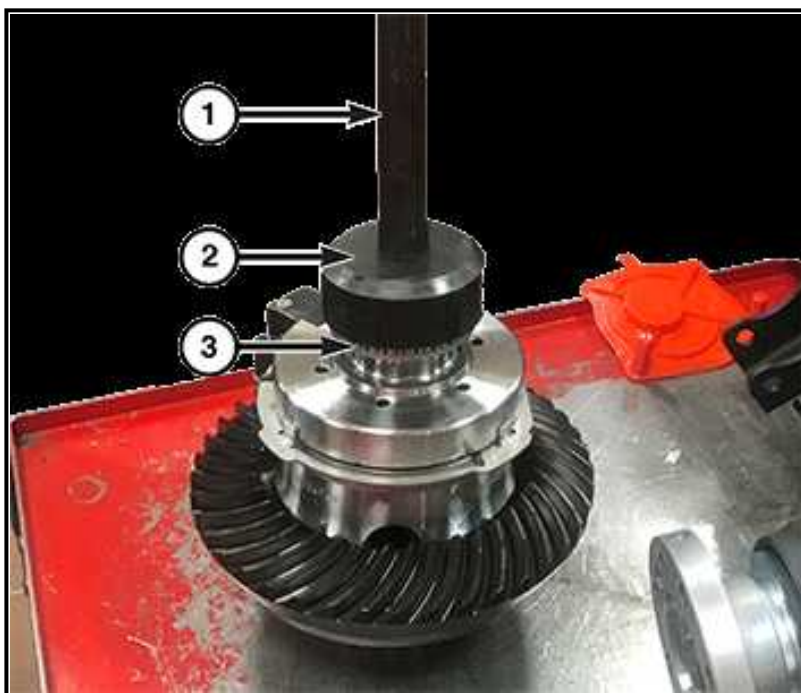
2 - Pressure Plate

6. Align the actuator with the tab on the pressure plate.



1 - Actuator

7. Seat the actuator onto the pressure plate.



1 - Drive Handle
2 - Bearing Installer
3 - Bearing

8. Install the differential side bearing using the (special tool #C-4213, Installer, Bearing) and handle (special tool #C-4171, Driver Handle, Universal).
9. Install the differential assembly into the axle housing. Refer to [REMOVAL AND INSTALLATION](#).

TORQUE SPECIFICATIONS

FRONT AXLE - M210

DESCRIPTION	SPECIFICATIONS	COMMENT
Bearing Cap Bolts	108 N.m (80 Ft. Lbs.)	-
Differential Cover Bolts	Torque Procedure: 1. Tighten to 20 N.m (15 Ft. Lbs.) 2. Rotate additional 20B°	Tightening Sequence
Differential Drain Plug	34 N.m (25 Ft. Lbs.)	-
Differential Fill Plug	34 N.m (25 Ft. Lbs.)	-
Front Axle Disconnect Skid Plate Bolts	42 N.m (31 Ft. Lbs.)	-
Front Axle Disconnect Bolts	18 N.m (13 Ft. Lbs.)	Do not reuse these fasteners. If removed, a NEW fastener must be installed and tightened to specifications.
Pinion Flange Nut	217 N.m (160 Ft. Lbs.)	Do not reuse these fasteners. If removed, a NEW fastener must be installed and tightened to specifications.
Ring Gear Bolts	136 N.m (100 Ft. Lbs.)	Do not reuse these fasteners. If removed, a NEW fastener must be installed and tightened to specifications.

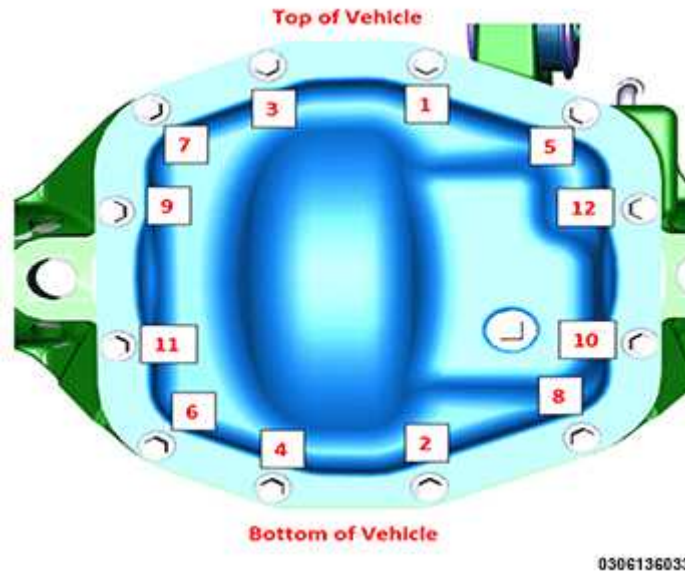
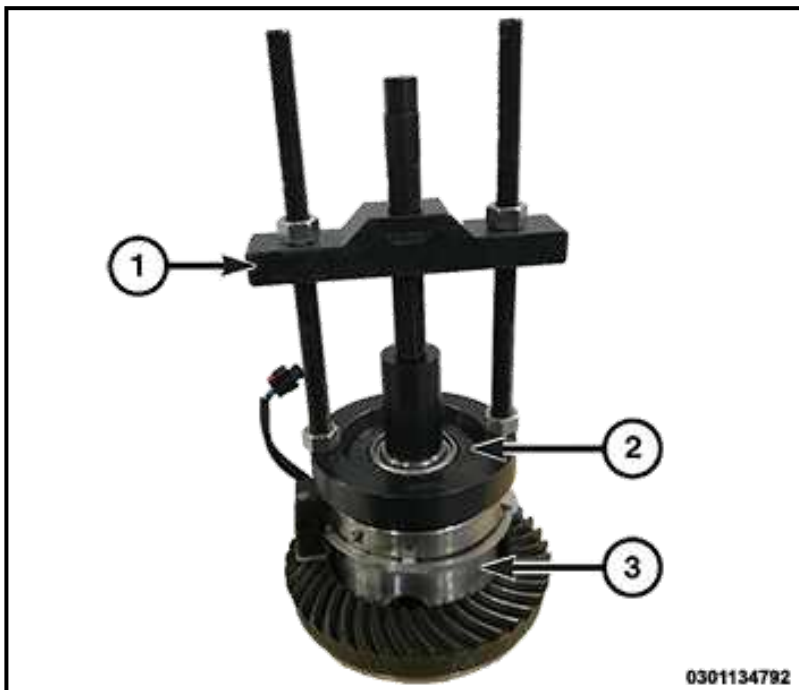


Fig. 1: Differential Cover Bolts Tightening Sequence
 Courtesy of CHRYSLER GROUP, LLC

AXLE LOCK ACTUATOR - M220

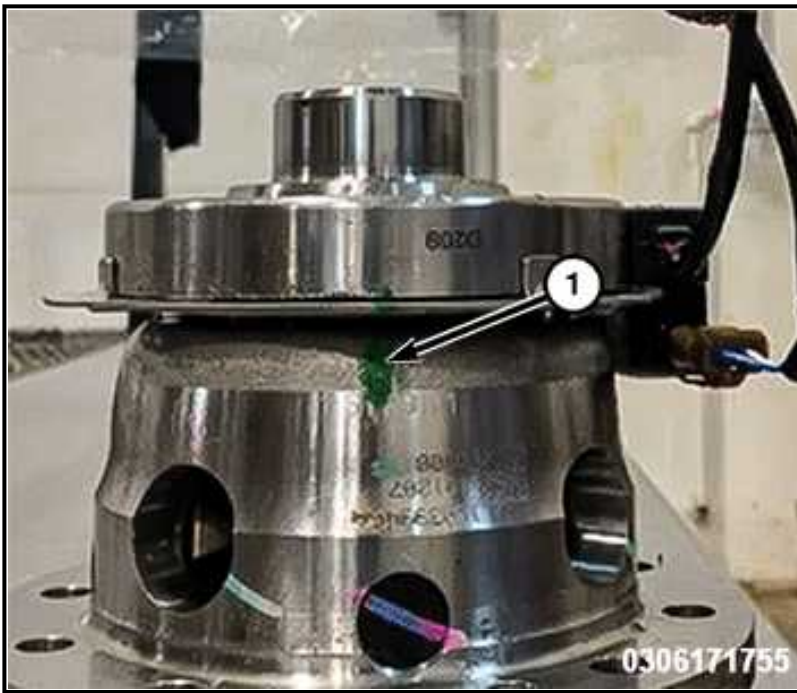
REMOVAL

1. Remove the differential case from the differential housing.



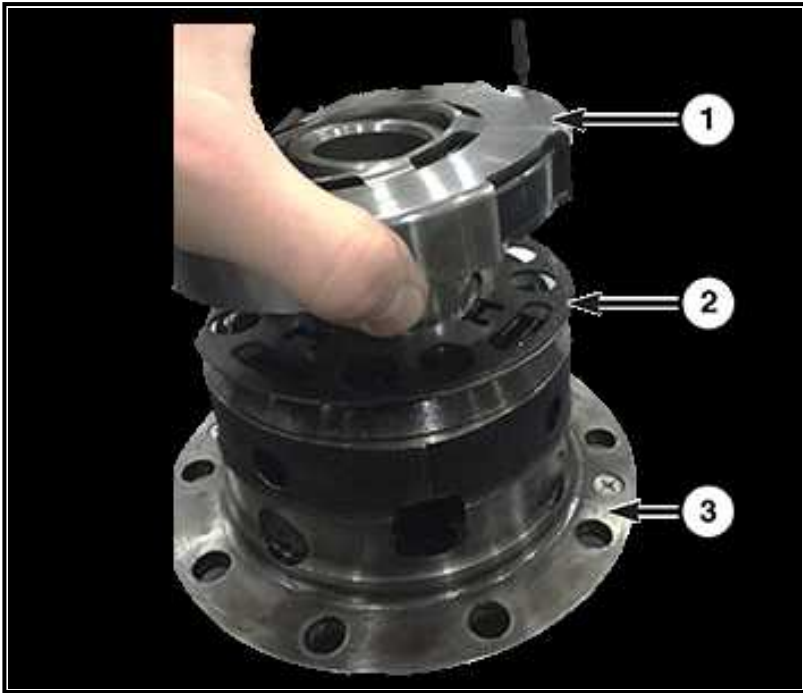
1 - Puller Press
2 - Bearing Adaptor
3 - Differential Case

2. Remove the bearing from the actuator side of the differential case using the (special tool #C-293-PA, Puller, Press), Plug (special tool #9676, Adapter Plug), and 6 blocks (special tool #C-293-62, Block Set, Puller).



1 - Differential Case

3. Mark the orientation of the actuator and pressure plate to the differential case.



1 - Actuator
2 - Pressure Plate
3 - Differential Case

4. Remove the actuator from the pressure plate and from the differential case.

INSTALLATION

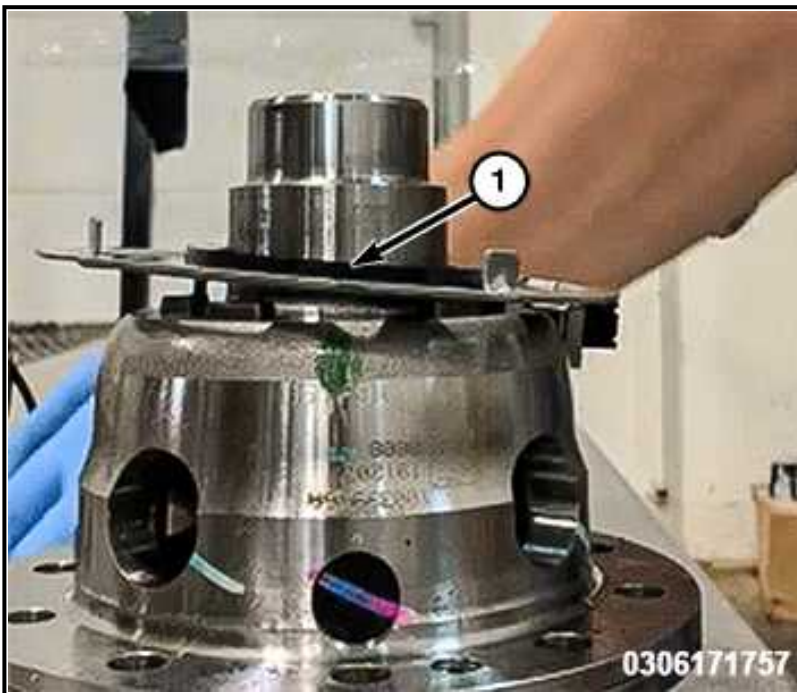
During installation, torque the fasteners to the specifications in the torque table(s) below.



1 - Pressure Plate

1. Place the pressure plate onto the differential case. Align the tabs of the pressure plate to the differential case.

NOTE: Shown without ring gear installed.



1 - Spacer

2. Place the spacer inside the pressure plate.



1 - Actuator

3. With the actuator upside-down, use the actuator to press and seat the pressure plate onto the differential case using hand pressure.



1 - Spacer

4. Remove the actuator and spacer from the pressure plate.
5. Install the spacer onto the actuator.



1 - Actuator

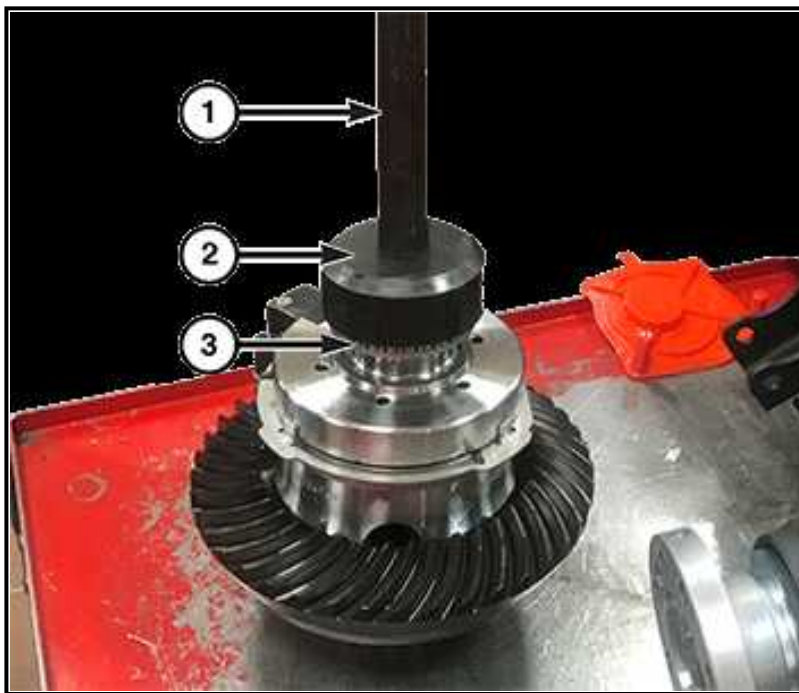
2 - Pressure Plate

6. Align the actuator with the alignment tab on the pressure plate.



1 - Actuator

7. Seat the actuator onto the pressure plate.



1 - Drive Handle
2 - Bearing Installer
3 - Bearing

8. Install the differential side bearing using the (special tool #6761, Installer, Ball Joint) and Handle (special tool #C-4171, Driver Handle, Universal).
9. Install the differential case into the differential housing.

TORQUE SPECIFICATIONS

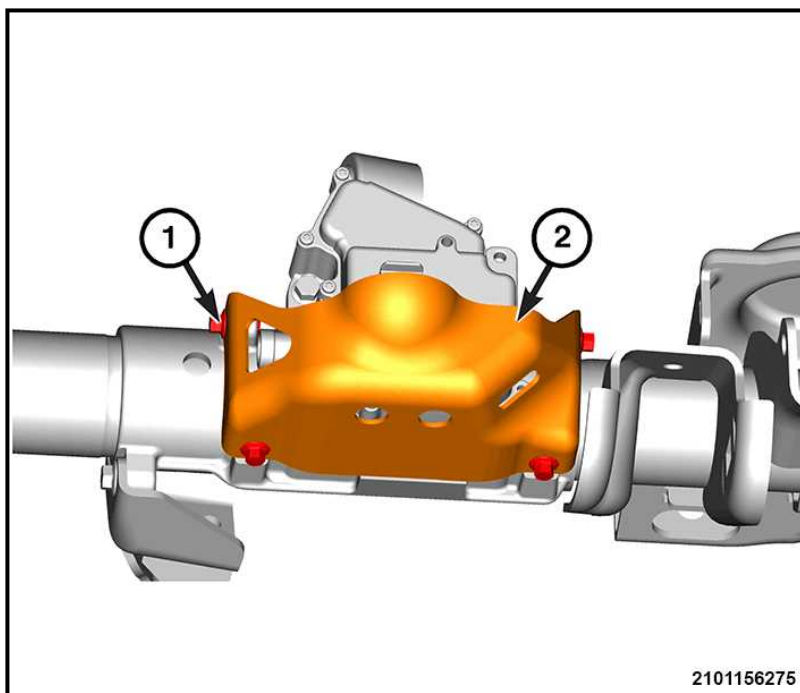
REAR AXLE - M220

DESCRIPTION	SPECIFICATIONS	COMMENT
Axle Retainer Nuts	80 N.m (59 Ft. Lbs.)	-
Bearing Cap Bolts	95 N.m (70 Ft. Lbs.)	-
Differential Cover Bolts	41 N.m (30 Ft. Lbs.)	Do not reuse these fasteners. If removed, a NEW fastener must be installed and tightened to specifications.
Drain Plug	34 N.m (25 Ft. Lbs.)	-
Fill Plug	34 N.m (25 Ft. Lbs.)	-
Pinion Nut	488 N.m (360 Ft. Lbs.)	Do not reuse these fasteners. If removed, a NEW fastener must be installed and tightened to specifications.
Ring Gear Bolts	Torque Procedure: 1. Tighten to 100 N.m (74 Ft. Lbs.) 2. Rotate additional 57.5B°	Do not reuse these fasteners. If removed, a NEW fastener must be installed and tightened to specifications.
Rear Axle Vent Fitting	22 N.m (17 Ft. Lbs.)	-

FRONT AXLE DISCONNECT (FAD)

REMOVAL

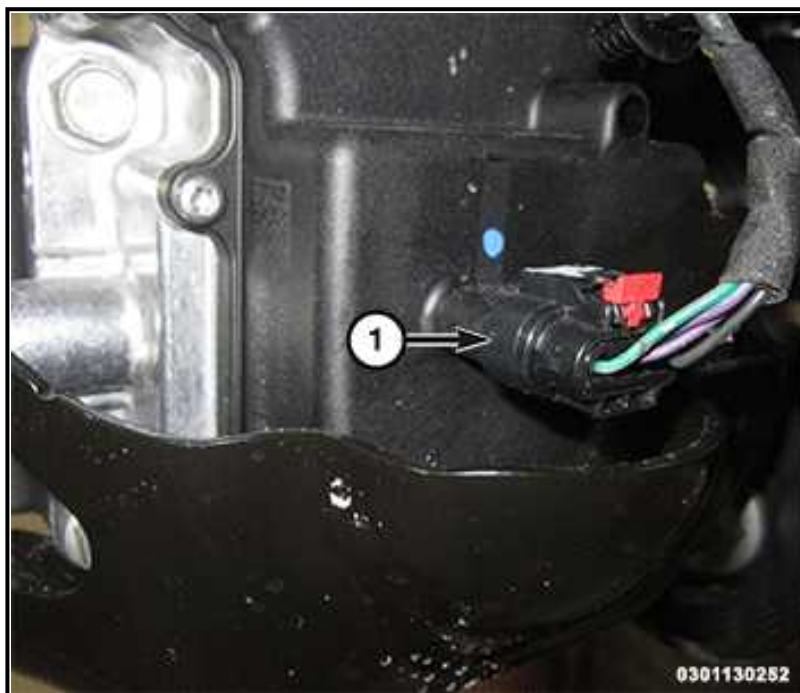
1. Raise and support the vehicle. Refer to [HOISTING, STANDARD PROCEDURE](#) .



1 - FAD Skid Plate Bolts

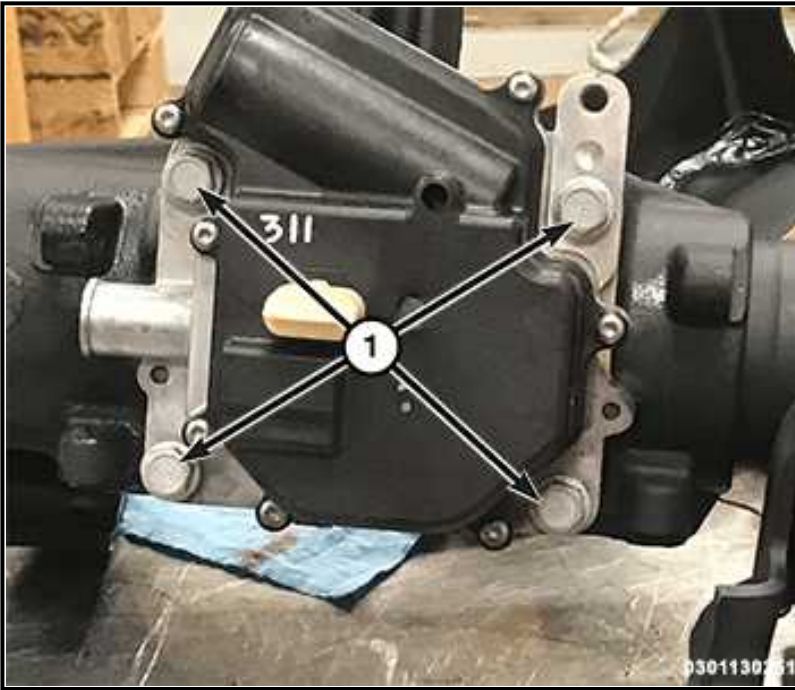
2 - Skid Plate

2. Remove the four Front Axle Disconnect (FAD) skid plate fasteners, and remove the skid plate.



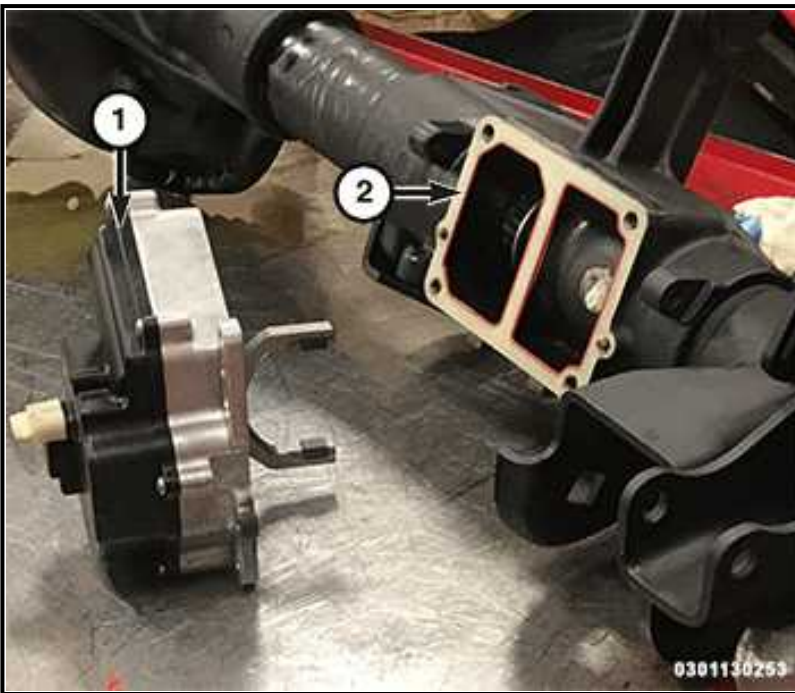
1 - FAD Actuator Harness Connector

3. Disconnect the FAD actuator wire harness connector.



1 - FAD Actuator Bolts

4. Remove and **DISCARD** the FAD actuator bolts.



1 - FAD Actuator

2 - FAD Gasket

5. Remove the FAD actuator (and the gasket).

6. If debris is present or there is axle damage or coupler damage. Refer to [DIAGNOSIS AND TESTING](#) .

CLEANING:

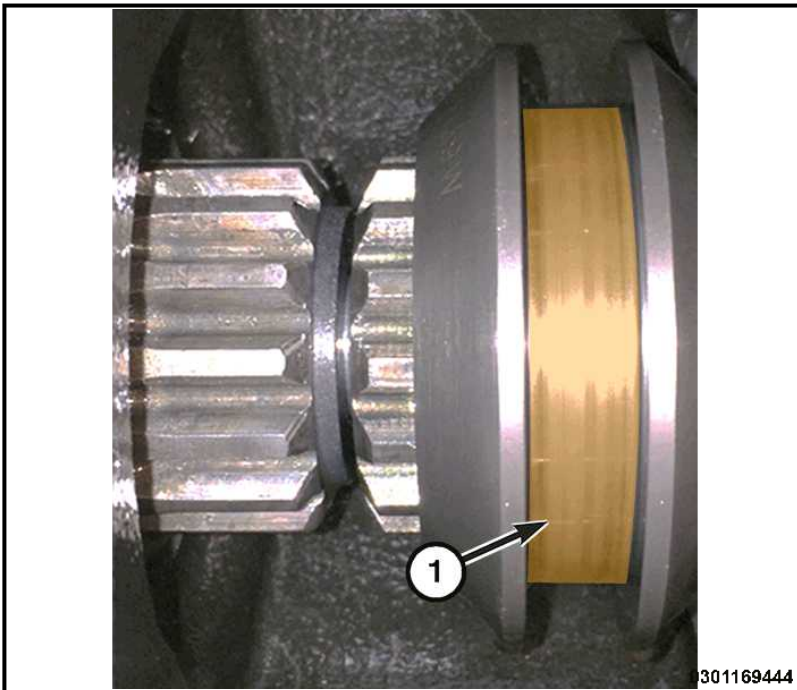
- **DO NOT** use any petroleum based cleaner on threads, doing so will cause thread patch failure.

INSTALLATION

During installation, torque the fasteners to the specifications in the torque table(s) below.

Follow the removal procedure in reverse for general reassembly of the components on the vehicle. The steps listed below are calling out specific procedures that should be followed during installation.

- DO NOT re-use the FAD actuator bolts. If the FAD bolts are removed they must be replaced with **NEW** bolts.



1 - Disconnect Collar

- Align the FAD shift fork within the highlighted area of the disconnect collar when installing the FAD actuator.



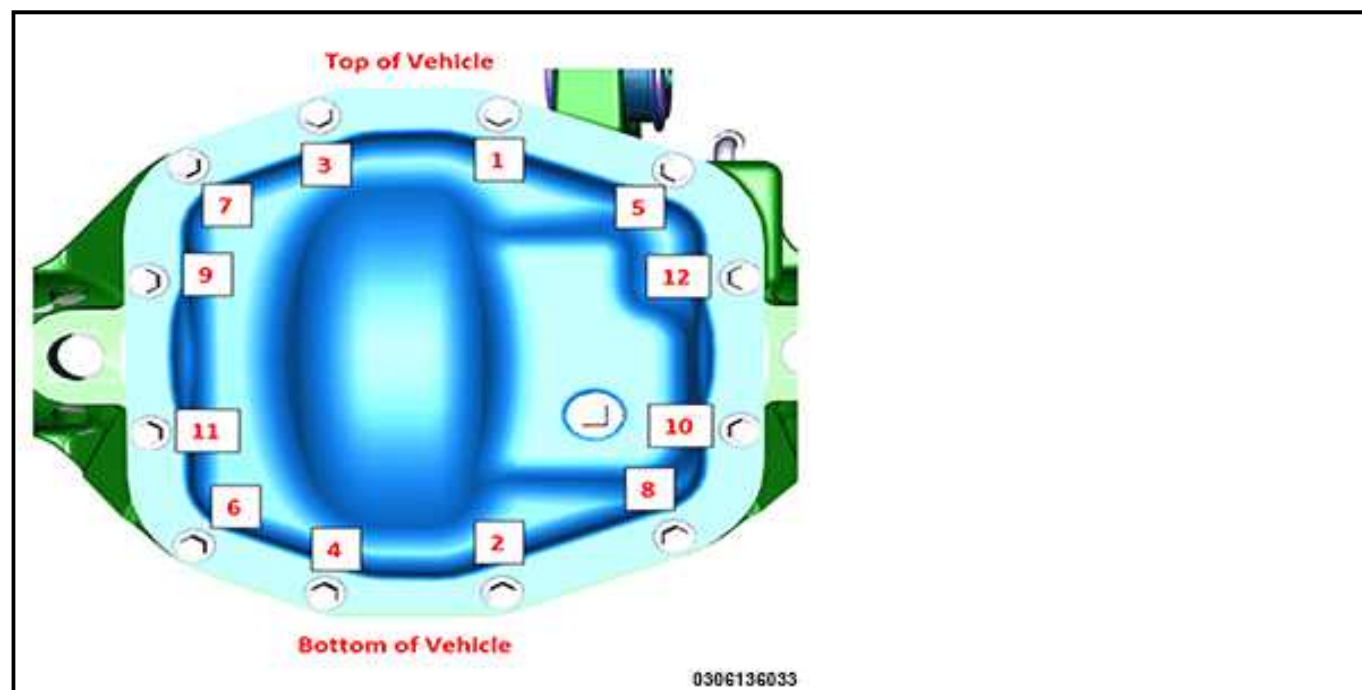
1 - FAD Shift Forks

- Verify that the FAD shift forks are aligned properly in the correct location of the disconnect collar.
- Tighten the FAD actuator bolts in a criss-cross pattern.
- Check with a scan tool to determine if there are any procedures that must be performed after replacement.

TORQUE SPECIFICATIONS

FRONT AXLE - M210

DESCRIPTION	SPECIFICATIONS	COMMENT
Bearing Cap Bolts	108 N.m (80 Ft. Lbs.)	-
Differential Cover Bolts	Torque Procedure: 1. Tighten to 20 N.m (15 Ft. Lbs.) 2. Rotate additional 20B°	Tightening Sequence
Differential Drain Plug	34 N.m (25 Ft. Lbs.)	-
Differential Fill Plug	34 N.m (25 Ft. Lbs.)	-
Front Axle Disconnect Skid Plate Bolts	42 N.m (31 Ft. Lbs.)	-
Front Axle Disconnect Bolts	18 N.m (13 Ft. Lbs.)	Do not reuse these fasteners. If removed, a NEW fastener must be installed and tightened to specifications.
Pinion Flange Nut	217 N.m (160 Ft. Lbs.)	Do not reuse these fasteners. If removed, a NEW fastener must be installed and tightened to specifications.
Ring Gear Bolts	136 N.m (100 Ft. Lbs.)	Do not reuse these fasteners. If removed, a NEW fastener must be installed and tightened to specifications.



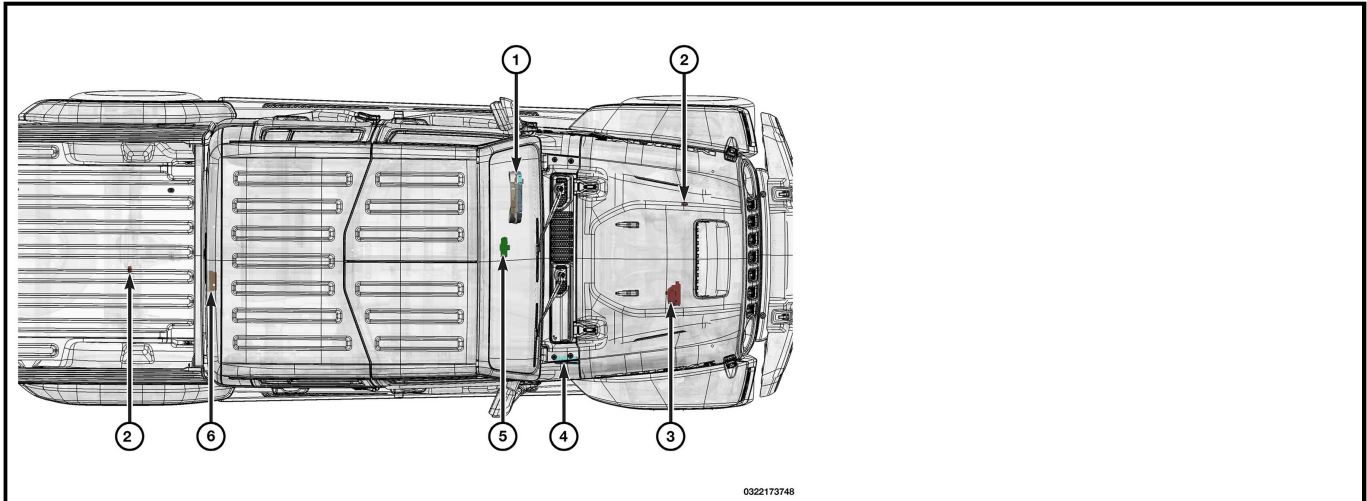
2021 GENERAL INFORMATION

Axle Locker Description And Operation - Gladiator

DESCRIPTION AND OPERATION

DESCRIPTION AND OPERATION - AXLE LOCKER SYSTEM

DESCRIPTION



The axle locker system is for off road use only and is comprised of the following components:

COMPONENT INDEX

1.	Refer to <u>INSTRUMENT PANEL CLUSTER (IPC)</u> .
2.	Refer to <u>AXLE LOCKER ACTUATOR</u> .
3.	Refer to <u>FRONT AXLE DISCONNECT</u> .
4.	Refer to <u>BODY CONTROL MODULE (BCM)</u> .
5.	Refer to <u>AXLE LOCKER SWITCH</u> .
6.	Refer to <u>DRIVE TRAIN CONTROL MODULE (DTCM)</u> .
-	Off Road Switch Refer to <u>OFF ROAD SWITCH</u> .

The TRU-LOK axle locker system is an Off Road use system that can lock the front and rear axles for a true 4WD operation. When the Off Road button is selected the DTCM will activate a change in calibration of the vehicle. When the front and rear axles are locked the vehicle in 4LO a calibration will not allow the vehicle to exceed a calibrated speed of approximately 16 KPH (10 MPH), in 4HI with the rear axle locked there is no limit to the vehicle speed. The Front axle can not be locked in 4HI.

OPERATION

AXLE LOCKER ACTUATOR

AXLE LOCKER ACTUATOR

B

The Axle Locker Actuator is a serviceable component attached to the gear case, a solenoid, when powered creates a magnetic field that pushes a plunger to engage the locker to the gear case. When the locker is disengaged spring tension releases it from the gear case.

AXLE LOCKER SWITCH

AXLE LOCKER SWITCH

B

The axle locker switch is located at the bottom of the center stack and provides the following operations:

- **OFF** Disables the axle locker system
- **UP: AXLE LOCKER** Locks the front and rear axles simultaneously
- **MIDDLE:** Default position of the switch
- **DOWN: REAR ONLY** Locks the rear axle.

BODY CONTROL MODULE (BCM)

BODY CONTROL MODULE (BCM)

B

The BCM gates signals for the ASBM between the Local Interior Network (LIN) bus and the CAN-C bus. The DTCM receives the request from the BCM over the CAN-C network bus to engage the axle lockers. The DTCM evaluates the interlocks to determine if conditions are met to lock the axles. If conditions are met to lock the axles, the DTCM attempts to lock the front or rear axle. If conditions are not met to lock axles, the DTCM will do one of the following depending on the type of request and the current vehicle conditions:

- Reject the locker engagement and request the IPC to describe which conditions are not met to achieve engagement
- Request the IPC to describe which conditions are not met and allow the driver time to correct the conditions preventing the locker engagement before rejecting the shift

The BCM receives DTCM output CAN-C messages containing ASBM switch LED illumination requests. The BCM gates these DTCM CAN-C messages to LIN message request and then sends these message requests to the ASBM to illuminate the appropriate switch based on the message received, front or rear.

DRIVE TRAIN CONTROL MODULE (DTCM)

DRIVE TRAIN CONTROL MODULE (DTCM)

B

The DTCM receives the gated ASBM ON or OFF signals to request front and rear axle locker engagement as well as the disengagement requests from the customer. If the DTCM determines that a valid request to engage axle lockers has been made, the DTCM evaluates the engagement interlocks. If all axle locker engagement interlocks are satisfied, the DTCM will attempt to lock the desired axle(s). If all axle locker engagement interlocks are not satisfied, the DTCM will send data bus messages to the IPC to display to the driver which conditions must be satisfied prior to an attempt to locking the desired axle(s) can be made. The DTCM also sends a CAN-C message to the IPC to request a "Service Axle Locker System" message be displayed to the driver. Any time there is a DTC set in the axle locker system, this message will display to the customer. Conditions such as loss of communication or other mechanical or electrical functional axle locker component issues can set a DTC.

The DTCM will only initiate a rear axle locker engagement if the ignition is in "Run" state. When the DTCM receives a request to lock the rear axle, each of the following interlocks must be satisfied before attempting a locking event:

- The DTCM will only initiate a rear axle locker engagement if transfer case is operating in low range (4LO) (4HI on Mojave)
- The DTCM will only initiate a rear axle locker engagement if vehicle speed is 16 kph (10 mph) or lower in 4LO. (Mojave 4HI the maximum speed is 110 mph.)
- The DTCM will only initiate a rear axle locker engagement if the difference in rear wheel speeds (Side to Side) is less than or equal to 32 kph (20 mph)

The DTCM will only initiate a front and rear axle locker engagement if the ignition is in "Run" state. When the DTCM receives a request to lock both front and rear axles, each of the following interlocks must be satisfied before attempting a locking event:

- The DTCM will only initiate a front axle locker engagement if transfer case is operating in low range (4LO)
- The DTCM will only initiate a front axle locker engagement if the rear axle locker is already engaged
- The DTCM will only initiate a front and rear axle locker engagement if vehicle speed is 16 kph (10 mph)
- The DTCM will only initiate a front and rear axle locker engagement if the difference in rear wheel speeds (Side to Side) is less than or equal to 32 kph (20 mph)

If the DTCM determines that a valid request to engage axle lockers has been made, the DTCM evaluates the engagement interlocks. If all axle locker engagement interlocks are satisfied, the DTCM will attempt to lock the desired axle(s). If all axle locker engagement interlocks are not satisfied, the DTCM will send data bus messages to the IPC to display to the driver which conditions must be satisfied prior to an attempt to locking the desired axle(s) can be made.

The DTCM also sends a CAN-C message to the IPC to request a "Service Axle Locker System" message be displayed to the driver. Any time there is a DTC set in the axle locker system, this message will display to the customer. Conditions such as loss of communication or other mechanical or electrical functional axle locker component issues can set a DTC.

INSTRUMENT PANEL CLUSTER (IPC)

INSTRUMENT PANEL CLUSTER (IPC)

B

The IPC displays the messaged from the DTCM on the process of the axle statuses Those messages are:

- Axle Locker Process Cancelled Axle Failure
- Axles Not Available Reduce Speed
- Front and Rear Axle Lock In Progress
- Front and Rear Axles Locked
- Front and Rear Axle Unlock In Progress
- Front and Rear Axles Unlocked
- Rear Axle Lock In Progress
- Rear Axle Locked
- Rear Axle Unlock In Progress
- Rear Axle Unlocked
- Front Axle Unlock In Progress
- Axles Not Available 4WD Low Required

FRONT AXLE DISCONNECT

FRONT AXLE DISCONNECT

B

The Front Axle Disconnect (FAD) moves a cog that connects and disconnects the right front axle outer shaft to the inner axle shaft that locks the two axles for 4WD/2WD operation.

OFF ROAD SWITCH

OFF ROAD SWITCH

B

The Off Road switch activates a change in calibration such as:

- Throttle
- Transmission shift points
- Anti-lock brake calibration
- Locker engagement in 4HI

FRONT AXLE - M210

DESCRIPTION

Tru-Lock is an electronically locking differential. The differential has four pinion gears, three pinion shafts and two side gears. On the back side of one side gear is half of the dog clutch.

NOTE: **The actuator is a serviceable component.**

OPERATION

Pressing a two-way momentary rocker switch on the switch bank request axle lock. The first press DOWN requests rear axle to be locked, every other press DOWN toggles between "front and rear axle lock" and "rear axle lock" request states. Press rocker switch UP requests both axles to be unlocked. The switch is on the IP in the switch bank. The switch bank sends a message to the Instrument Panel Cluster (IPC). The IPC handles the switch debounce and switch diagnostics. Any one message sent by the IPC on the network is a valid switch change. The IPC passes the information via a Controller Area Network-Internal High Speed (CAN-IHS) message. There are three telltales on the cluster, "Rear", "Front", and "Lock". The telltales will be off if the axles are unlocked, flashing if there is a pending request to lock but the axles are not yet locked (transition to lock, torque-locked, or conditions not correct), and flashing rapidly if there is a fault. The "Front" and "Rear" telltales will match the front and rear differential states. The "Lock" telltale will be on solid if either the "Front" or "Rear" telltale is on or blinking. For more information on locker operation. Refer to [**MODULE, DRIVETRAIN CONTROL \(DTCM\), DESCRIPTION AND OPERATION**](#) .

AXLE LOCK ELECTRICAL REQUIREMENTS

Software Latch Feature: The axle will have a software latch of the axle switch during an ignition switch OFF when the vehicle is in 4 LO transfer case position. Upon ignition key RUN or START the software latch shall check to verify conditions are correct for an axle lock and automatically lock the axles that were locked before the ignition was turned OFF.

NOTE: **The electric locking differential is serviced as an assembly.**

M220 TRAC-LOKB® AXLE

This differential clutches are engaged by two concurrent forces. The first being the preload force exerted through Belleville spring washers within the clutch packs. The second is the separating forces generated by the side gears as torque is applied through the ring gear.

This design provides the differential action needed for turning corners and for driving straight ahead during periods of unequal traction. When one wheel loses traction, the clutch packs transfer additional torque to the wheel having the most traction. This differential resist wheel spin on bumpy roads and provide more pulling power when one wheel loses traction. Pulling power is provided continuously until both wheels lose traction. If both wheels slip due to unequal traction, Trac-lokB® operation is normal. In extreme cases of differences of traction, the wheel with the least traction may spin.

M220 TRU-LOCK AXLE

DESCRIPTION

Tru-Lock is an electronically locking differential. The differential has four pinion gears, three pinion shafts and two side gears. On the back side of one side gear is half of the dog clutch.

NOTE: **The actuator is a serviceable component.**

OPERATION

Pressing a two-way momentary rocker switch on the switch bank request axle lock. The first press DOWN requests rear axle to be locked, every other press DOWN toggles between "front and rear axle lock" and "rear axle lock" request states. Press rocker switch UP requests both axles to be unlocked. The switch is on the IP in the switch bank. The switch bank sends a message to the Instrument Panel Cluster (IPC). The IPC handles the switch debounce and switch diagnostics. Any one message sent by the IPC on the network is a valid switch change. The IPC passes the information via a Controller Area Network-Internal High Speed (CAN-IHS) message. There are three telltales on the cluster, "Rear", "Front", and "Lock". The telltales will be off if the axles are unlocked, flashing if there is a pending request to lock but the axles are not yet locked (transition to lock, torque-locked, or conditions not correct), and flashing rapidly if there is a fault. The "Front" and "Rear" telltales will match the front and rear differential states. The "Lock" telltale will be on solid if either the "Front" or "Rear" telltale is on or blinking. For more information on locker operation. Refer to **MODULE, DRIVETRAIN CONTROL (DTCM), DESCRIPTION AND OPERATION** .

2021 GENERAL INFORMATION
Axle Locker Sensors - Gladiator

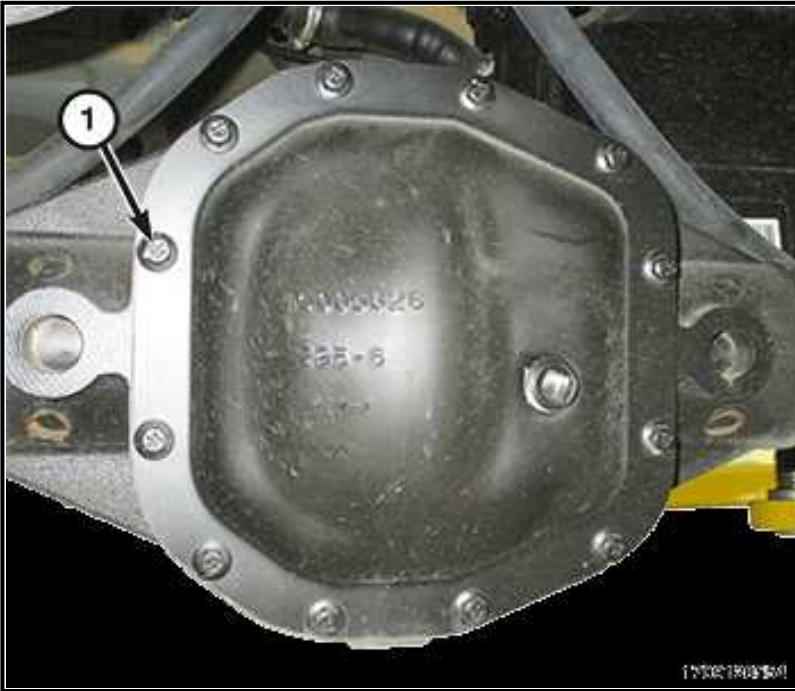
REMOVAL AND INSTALLATION

AXLE LOCKER SENSOR

REMOVAL

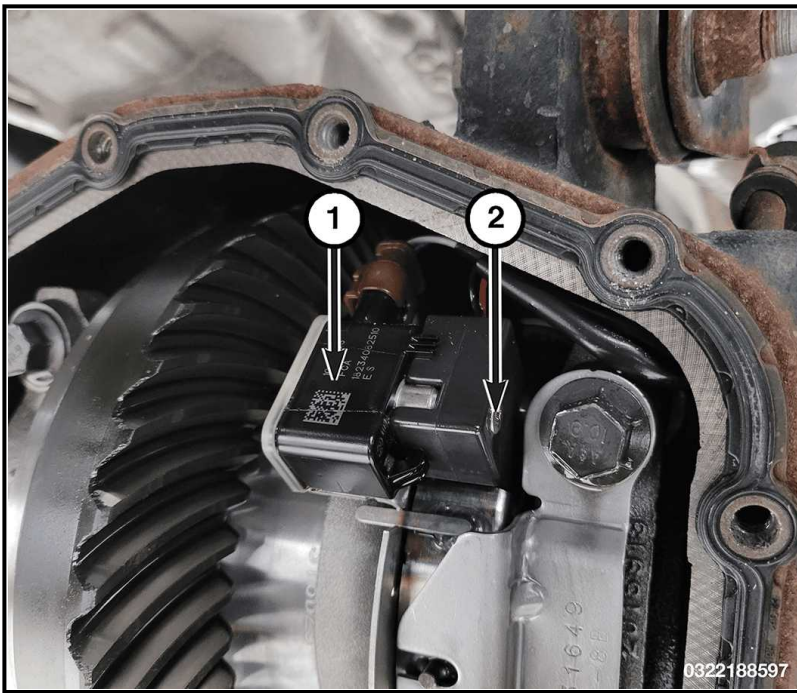
1. Raise and support the vehicle

Refer to **HOISTING, STANDARD PROCEDURE** .



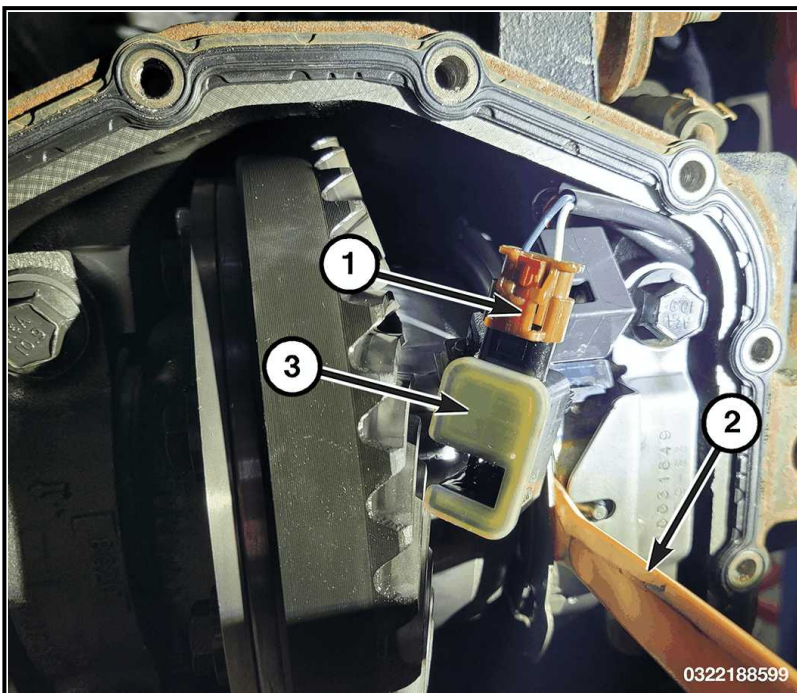
1 - Differential Cover Bolts

2. Loosen the differential cover bolts and allow the fluid to drain.
3. Remove the differential cover.



- | |
|------------------------------|
| 1 - Axle Locker Sensor |
| 2 - Axle Locker Sensor Screw |

4. Remove the axle locker sensor screw.



- | |
|--|
| 1 - Axle Locker Sensor Harness Connector |
| 2 - Axle Locker Sensor |

NOTE: Do not bend or damage the magnet plate.

- Using a trim stick, carefully move magnet plate towards the ring gear while removing the axle locker sensor away from the differential carrier.
- Disconnect the axle locker sensor wire harness connector and remove the sensor.

AXLE LOCKER SENSOR SELECTION

NOTE: When replacing the sensor, there 5 possible sensors to select from. The new axle locker sensors are marked #1 through #5. Use the axle locker sensor selection process to determine the correct sensor to install. Begin the process with the sensor marked #1.

1. Connect the axle locker sensor marked #1 to the harness connector.

NOTE: Do not bend or damage the magnet plate.

2. Using a trim stick, carefully move magnet plate towards the ring gear while installing the axle locker sensor into position.
3. Install the axle locker sensor mounting screw and tighten securely.
4. Lower the vehicle.
5. Turn the ignition to the ON position and check for Service Axle Locker message:
 - The Service Axle Locker message is **NOT** present, turn the ignition OFF and continue with Installation.
 - The Service Axle Locker message is present, turn the ignition OFF and replace the axle locker sensor in consecutive order from #2 - #5 until the Service Axle Locker message is **NOT** present when the ignition is turned ON and then continue with Installation.

INSTALLATION

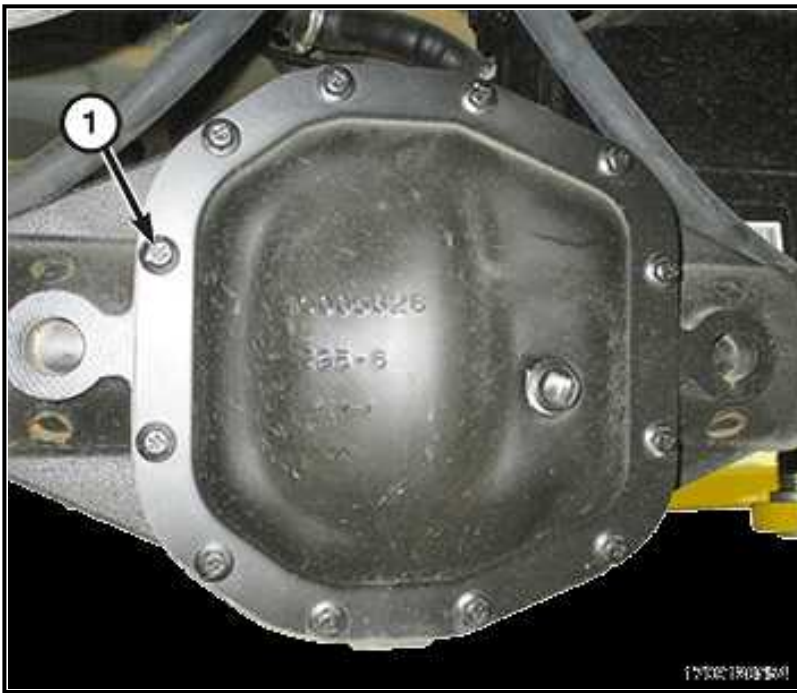


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1 - Copper Brush

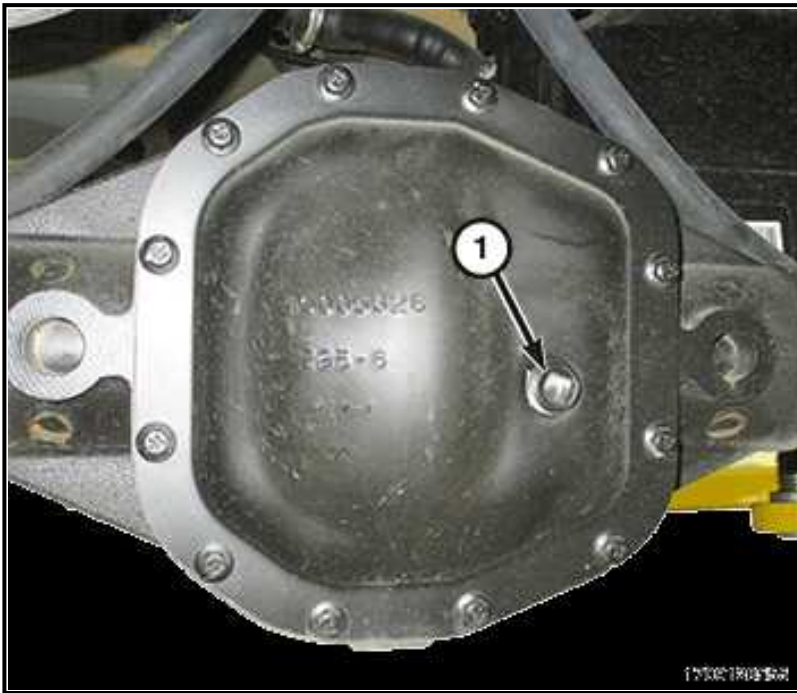
NOTE: Do not use Scotch-Brite™ or other abrasive surface preparation methods. Clean the differential cover sealing surfaces with brake clean or equivalent alcohol based cleaners.

1. Use a copper brush to remove any Loctite™ out of the carrier bolt holes, then use brake cleaner to clean the bores. Use compressed air to ensure each bolt hole is dry and no brake clean remains.



1 - Differential Cover Bolts

2. Install the differential cover with the gasket and hand start all of the bolts.
3. The differential cover bolts must be tightened in the sequence shown in the torque table below.



1 - Differential Fill Plug

4. Remove the differential fill plug.
5. Fill the differential with the specified fluid. Refer to [CAPACITIES AND RECOMMENDED FLUIDS, SPECIFICATIONS](#).
6. Install the differential fill plug and torque to specification.

REAR AXLE - M220

DESCRIPTION	SPECIFICATIONS	COMMENT
Axle Retainer Nuts	80 N.m (59 Ft. Lbs.)	-
Bearing Cap Bolts	95 N.m (70 Ft. Lbs.)	-

DESCRIPTION	SPECIFICATIONS	COMMENT
Differential Cover Bolts	41 N.m (30 Ft. Lbs.)	Tightening Sequence Do not reuse these fasteners. If removed, a NEW fastener must be installed and tightened to specifications.
Drain Plug	34 N.m (25 Ft. Lbs.)	-
Fill Plug	34 N.m (25 Ft. Lbs.)	-
Pinion Nut	488 N.m (360 Ft. Lbs.)	Do not reuse these fasteners. If removed, a NEW fastener must be installed and tightened to specifications.
Ring Gear Bolts	Torque Procedure: 1. Tighten to 100 N.m (74 Ft. Lbs.) 2. Rotate additional 57.5B°	Do not reuse these fasteners. If removed, a NEW fastener must be installed and tightened to specifications.
Rear Axle Vent Fitting	22 N.m (17 Ft. Lbs.)	-

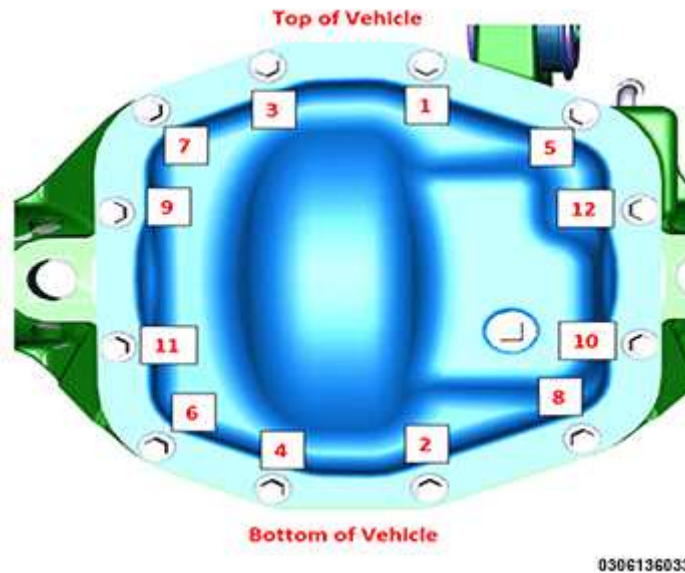


Fig. 1: Differential Cover Bolts Tightening Sequence
 Courtesy of CHRYSLER GROUP, LLC

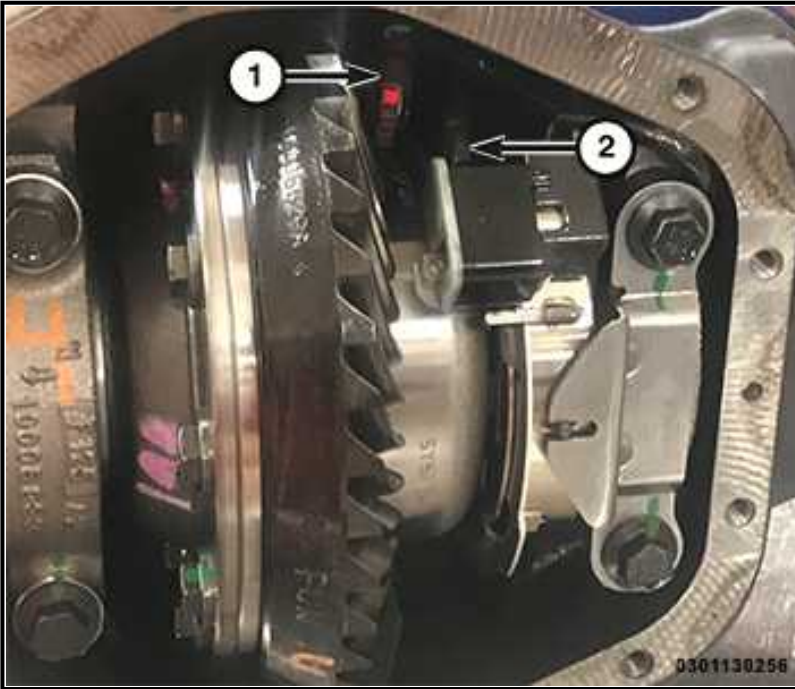
2021 GENERAL INFORMATION
Axle Locker Switches - Gladiator

REMOVAL AND INSTALLATION

AXLE LOCKER SWITCH

REMOVAL

1. Remove the differential cover. Refer to [REMOVAL AND INSTALLATION](#).



1 - Axle Locker Switch Harness Connector
--

2 - Axle Locker Switch

2. Disconnect the axle locker switch wire harness connector from the locker switch and remove the axle locker switch union.

INSTALLATION

During installation, torque the fasteners to the specifications in the torque table(s) below.

Follow the removal procedure in reverse for general reassembly of the components on the vehicle. The steps listed below are calling out specific procedures that should be followed during installation.

- Verify the axle locker is operating correctly.

TORQUE SPECIFICATIONS

FRONT AXLE - M210

DESCRIPTION	SPECIFICATIONS	COMMENT
Bearing Cap Bolts	108 N.m (80 Ft. Lbs.)	-
Differential Cover Bolts	Torque Procedure: 1. Tighten to 20 N.m (15 Ft. Lbs.)	Tightening Sequence

DESCRIPTION	SPECIFICATIONS	COMMENT
	2. Rotate additional 20B°	
Differential Drain Plug	34 N.m (25 Ft. Lbs.)	-
Differential Fill Plug	34 N.m (25 Ft. Lbs.)	-
Front Axle Disconnect Skid Plate Bolts	42 N.m (31 Ft. Lbs.)	-
Front Axle Disconnect Bolts	18 N.m (13 Ft. Lbs.)	Do not reuse these fasteners. If removed, a NEW fastener must be installed and tightened to specifications.
Pinion Flange Nut	217 N.m (160 Ft. Lbs.)	Do not reuse these fasteners. If removed, a NEW fastener must be installed and tightened to specifications.
Ring Gear Bolts	136 N.m (100 Ft. Lbs.)	Do not reuse these fasteners. If removed, a NEW fastener must be installed and tightened to specifications.

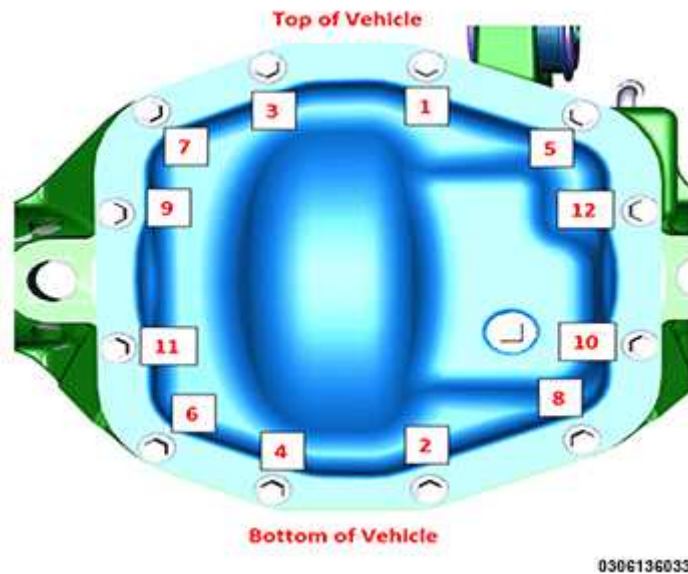


Fig. 1: Differential Cover Bolts Tightening Sequence
 Courtesy of CHRYSLER GROUP, LLC

REAR AXLE - M220

DESCRIPTION	SPECIFICATIONS	COMMENT
Axle Retainer Nuts	80 N.m (59 Ft. Lbs.)	-
Bearing Cap Bolts	95 N.m (70 Ft. Lbs.)	-
Differential Cover Bolts	41 N.m (30 Ft. Lbs.)	Do not reuse these fasteners. If removed, a NEW fastener must be installed and tightened to specifications.
Drain Plug	34 N.m (25 Ft. Lbs.)	-
Fill Plug	34 N.m (25 Ft. Lbs.)	-
Pinion Nut	488 N.m (360 Ft. Lbs.)	Do not reuse these fasteners. If removed, a NEW fastener must be installed and tightened to specifications.

DESCRIPTION	SPECIFICATIONS	COMMENT
Ring Gear Bolts	Torque Procedure: 1. Tighten to 100 N.m (74 Ft. Lbs.) 2. Rotate additional 57.5B°	Do not reuse these fasteners. If removed, a NEW fastener must be installed and tightened to specifications.
Rear Axle Vent Fitting	22 N.m (17 Ft. Lbs.)	-

AXLE LOCKER SWITCH CONNECTOR

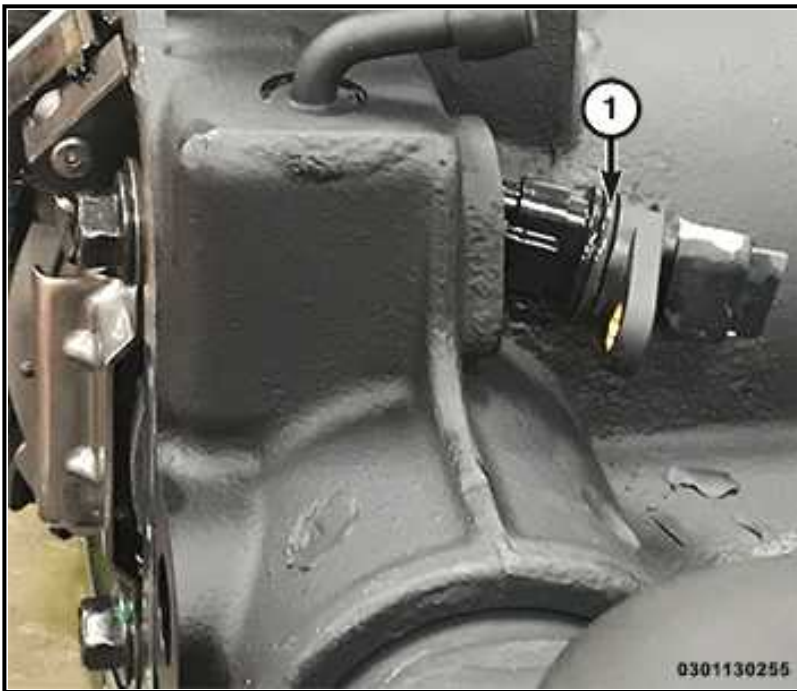
REMOVAL

1. Raise and support the vehicle. Refer to [HOISTING, STANDARD PROCEDURE](#) .



1 - Axle Locker Switch Bolt

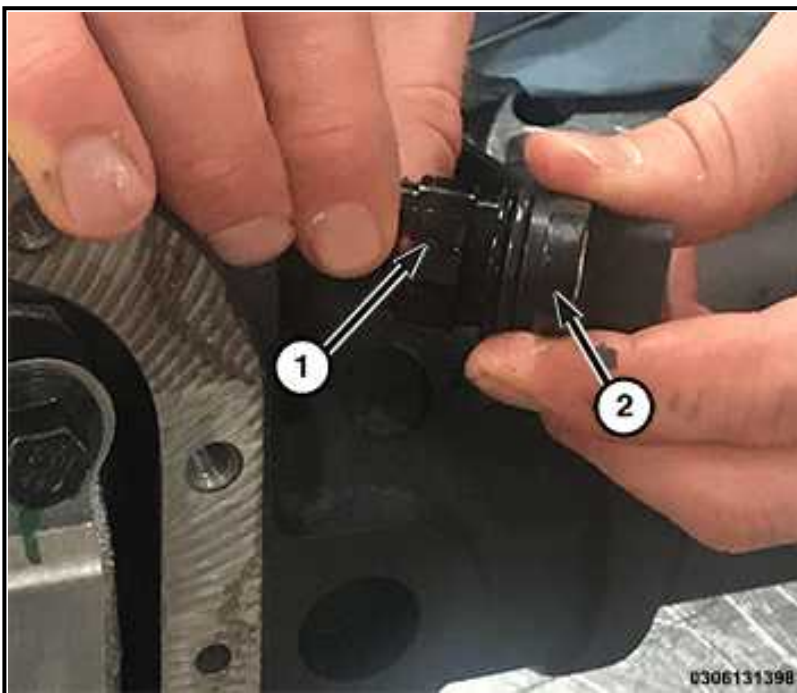
2. Disconnect the axle locker switch wire harness connector from the axle locker switch and remove the axle locker switch bolt.



1 - Axle Locker Switch

3. Remove the axle locker switch from the axle housing.

NOTE: The wire harness from the switch to the locker is a union with connectors at each end. The differential cover does not need to be removed to remove/replace the switch.



1 - Axle Locker Switch Harness Connector

2 - Axle Locker Switch

4. Disconnect the axle locker wire harness connector from the axle locker switch.
5. Remove the axle locker switch.

INSTALLATION

During installation, torque the fasteners to the specifications in the torque table(s) below.

Follow the removal procedure in reverse for general reassembly of the components on the vehicle. The steps listed below are calling out specific procedures that should be followed during installation.

- Apply a light coating of grease to the O-ring seal to prevent tearing or cutting the seal.
 - Tighten the axle locker switch bolt securely.
 - Verify the axle locker is operating correctly.
-

2021 GENERAL INFORMATION

Axle Seals - Gladiator

REMOVAL AND INSTALLATION

FRONT AXLE SEALS - M210

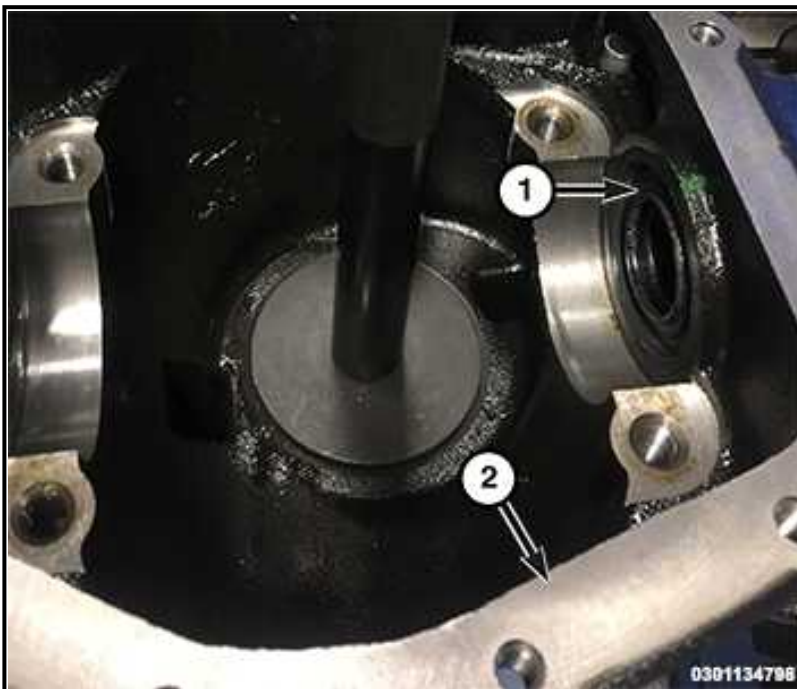
The following procedures will cover the removal and installation of the inner and outer axle seals, and the related torque specifications.

REPAIR PROCEDURES

LEFT AXLE SHAFT SEAL

REMOVAL

1. Raise and support the vehicle. Refer to [HOISTING, STANDARD PROCEDURE](#) .
2. Remove the hub and axle as an assembly. Refer to [HUB AND BEARING, REMOVAL AND INSTALLATION](#) .
3. Remove the front axle disconnect. Refer to [REMOVAL AND INSTALLATION](#) .
4. Remove the intermediate shaft. Refer to [REMOVAL AND INSTALLATION](#) .
5. Remove the differential cover. Refer to [REMOVAL AND INSTALLATION](#) .
6. Remove the differential case from the differential housing. Refer to [REMOVAL AND INSTALLATION](#) .



1 - Left Inner Axle Shaft Seal
2 - Differential Case

7. Remove the inner axle shaft seals using a seal puller or suitable tool.

INSTALLATION

During installation, torque the fasteners to the specifications in the torque table(s) below.

1. Remove any sealer remaining from original seals.



1 - Torquing Nut	4 - Pressing Tool
2 - Bearing	5 - Axle Seal Installer
3 - Bearing Cup Installer	6 - Retaining Nut

2. Align the (special tool #2026900170, Kit, Pressing Tool) through the axle tube with (special tool #2053500030, Installer, Seal Axle) held into the axle seal and (special tool #8961, Installer, Bearing Cup) inserted into the axle opposite the seal end.
3. Carefully press the seal into the axle housing by tightening the torquing nut and holding the retaining nut until the seal and installer bottom out in the bore.
4. Wipe any oil from the axle tube using a clean rag.
5. Install the differential case into the axle housing. Refer to [REMOVAL AND INSTALLATION](#) .
6. Install the differential cover. Refer to [REMOVAL AND INSTALLATION](#) .
7. Install the intermediate shaft. Refer to [REMOVAL AND INSTALLATION](#) .
8. Install the front axle disconnect. Refer to [REMOVAL AND INSTALLATION](#) .
9. Install the hub and axle as an assembly. Refer to [HUB AND BEARING, REMOVAL AND INSTALLATION](#) .
10. Fill the differential with the specified fluid. Refer to [CAPACITIES AND RECOMMENDED FLUIDS, SPECIFICATIONS](#) .
11. Remove the support and lower the vehicle.

TORQUE SPECIFICATIONS

RIGHT AXLE SHAFT SEAL

REMOVAL

1. Raise and support the vehicle. Refer to [HOISTING, STANDARD PROCEDURE](#) .
2. Remove the intermediate shaft. Refer to [REMOVAL AND INSTALLATION](#) .
3. Remove the right axle shaft seal from the center rib of the FAD opening using a seal puller or suitable tool.

INSTALLATION

During installation, torque the fasteners to the specifications in the torque table(s) below.

1. Remove any sealer remaining from original seals.



1 - Torquing Nut	4 - Pressing Tool
2 - Bearing	5 - Axle Seal Installer
3 - Bearing Cup Installer	6 - Retaining Nut

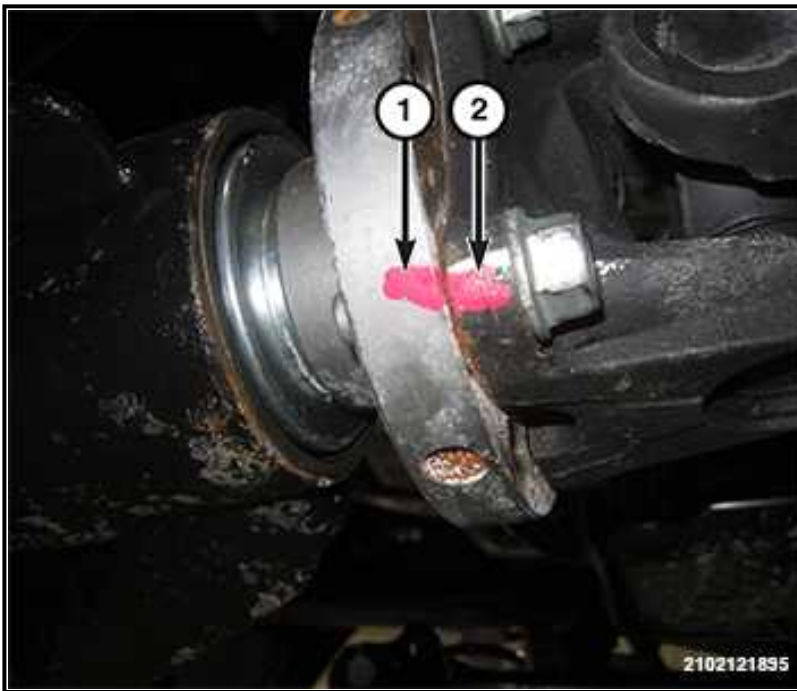
2. Align the (special tool #2026900170, Kit, Pressing Tool) through the axle tube with (special tool #2053500030, Installer, Seal Axle) held into the axle seal and (special tool #8961, Installer, Bearing Cup) inserted into the axle opposite the seal end.
3. Carefully press the seal into the axle housing by tightening the torquing nut and holding the retaining nut until the seal and installer bottom out in the bore.
4. Wipe any oil from the axle tube using a clean rag.
5. Install the intermediate shaft. Refer to [REMOVAL AND INSTALLATION](#).
6. Fill the differential with the specified fluid. Refer to [CAPACITIES AND RECOMMENDED FLUIDS, SPECIFICATIONS](#).
7. Remove the support and lower the vehicle.

TORQUE SPECIFICATIONS

PINION SEAL

REMOVAL

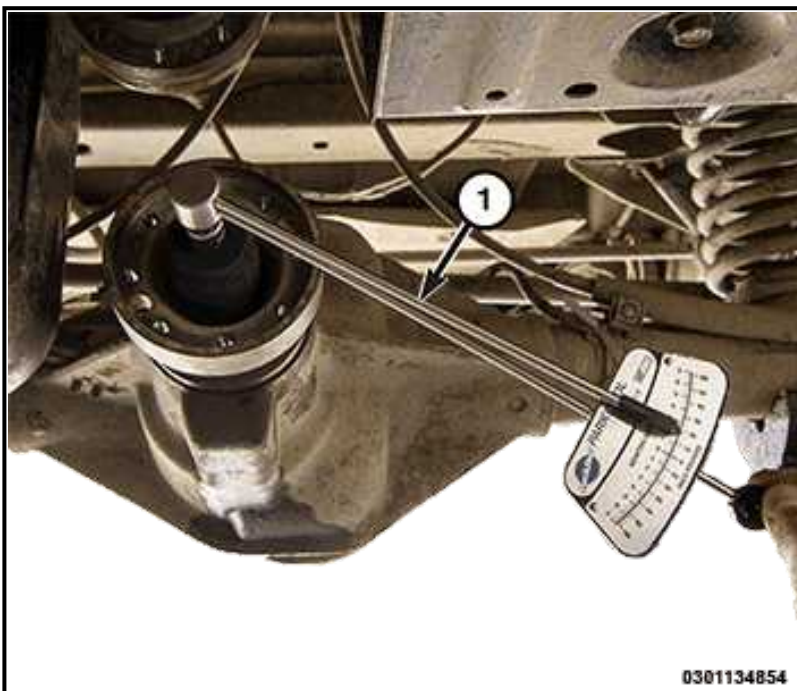
1. Raise and support the vehicle. Refer to [HOISTING, STANDARD PROCEDURE](#).
2. Remove the brake calipers to prevent drag. Refer to [CALIPER, DISC BRAKE, FRONT, REMOVAL AND INSTALLATION](#), or [CALIPER, DISC BRAKE, REAR, REMOVAL AND INSTALLATION](#).



1 - Front Driveshaft Flange

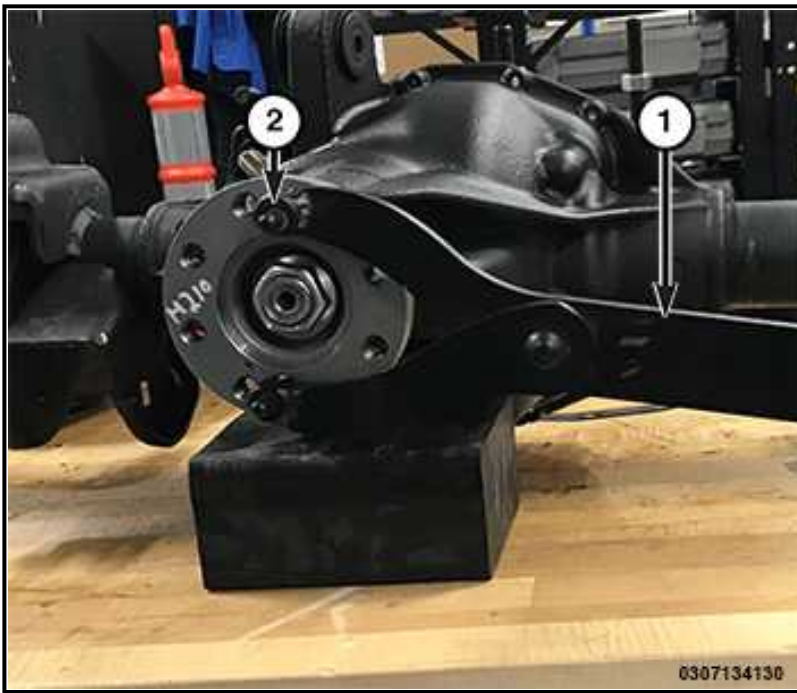
2 - Front Axle Flange

3. Mark the front driveshaft flange and pinion flange for installation reference.
4. Remove the front driveshaft. Refer to [REMOVAL AND INSTALLATION](#).
5. Rotate the pinion gear three or four times and verify it rotates smoothly.



1 - Inch Pound Torque Wrench

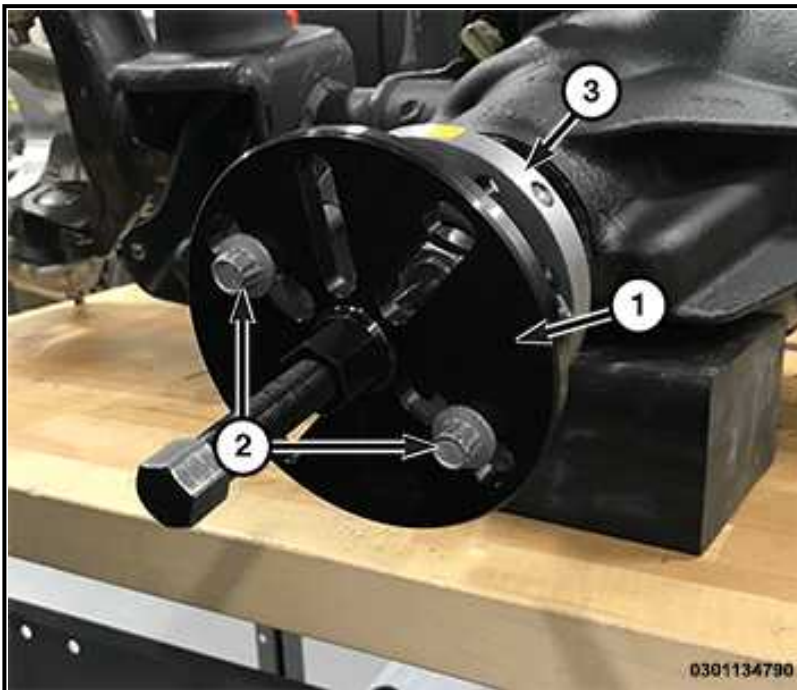
6. Record Pinion Torque To Rotate (PTTR) with an inch pound torque wrench and record the value for installation reference.



1 - Flange Holder Tool

2 - Pinion Flange

7. Hold the pinion flange using the (special tool #C-3281, Holder, Flange) and remove the pinion nut.
8. Mark a reference line across the pinion shaft and flange for installation reference.

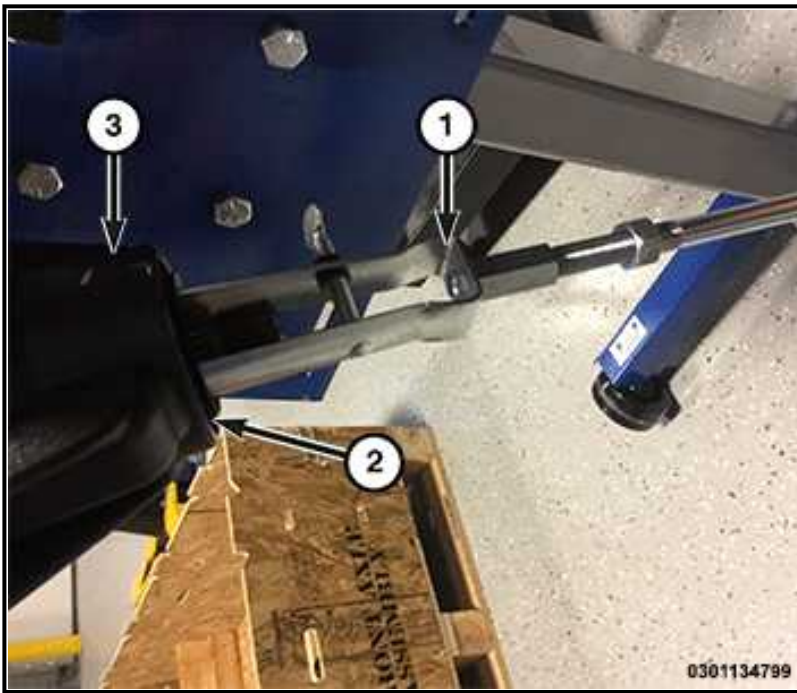


1 - Companion Flange Puller

2 - Driveshaft Bolts

3 - Pinion Flange

9. Remove the pinion flange using the (special tool #C-452, Puller, Companion Flange).



1 - Seal Remover
2 - Pinion Seal
3 - Differential Case

10. Remove the pinion seal using (special tool #7794-A, Remover, Seal) and a slide hammer.

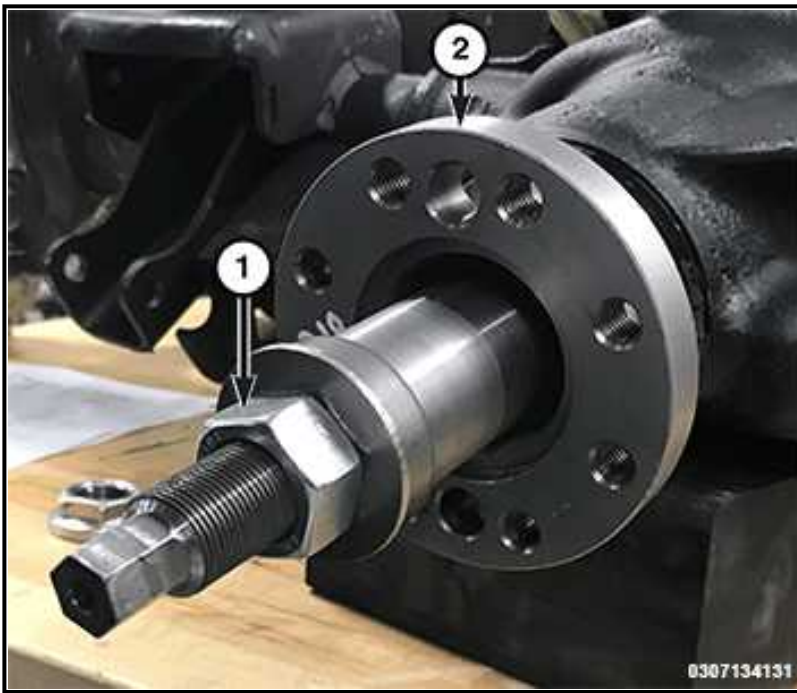
INSTALLATION

During installation, torque the fasteners to the specifications in the torque table(s) below.



1 - Seal Installer
2 - Driver Handle

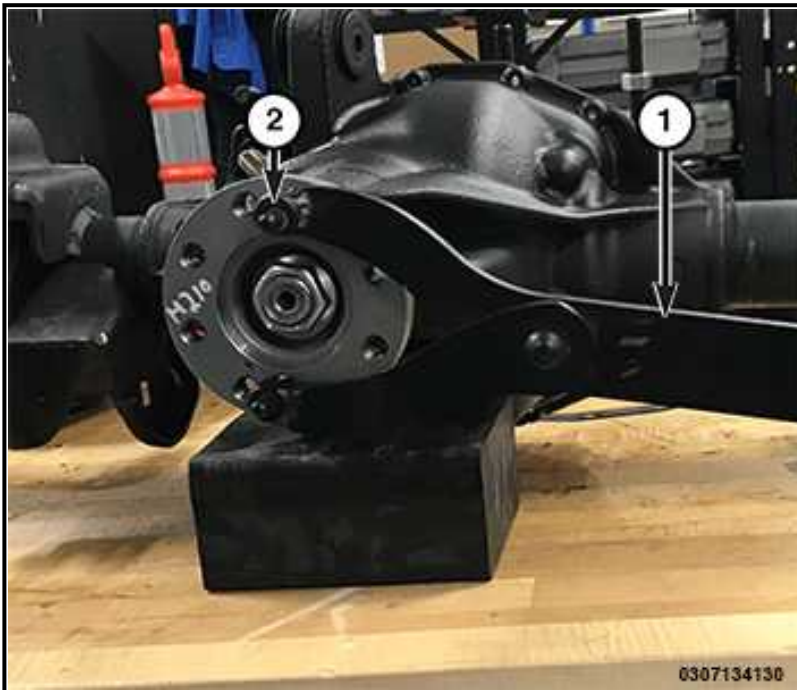
1. Apply a light coating of gear lubricant on the lip of pinion seal. Install the **NEW** pinion seal using the (special tool #C-4171, Driver Handle, Universal) and the (special tool #9684, Installer, Seal).



1 - Pinion Flange

2 - Pinion Flange Installer

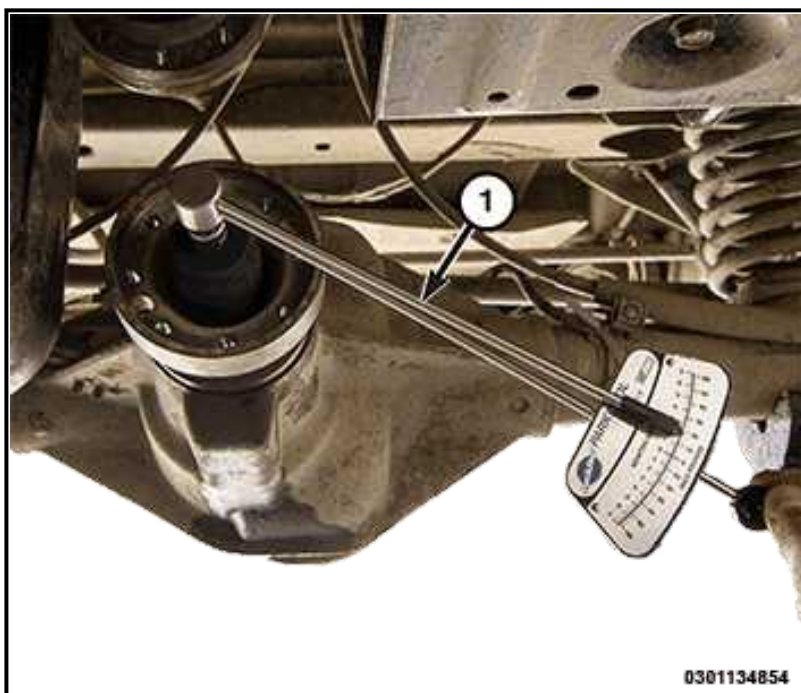
2. Place the pinion flange on the pinion shaft with the reference marks made during removal aligned.
3. Install the pinion flange using the (special tool #2054200030, Installer, Pinion Flange).
4. Install a **NEW** pinion nut.



1 - Flange Holder Tool

2 - Pinion Flange

5. Hold the pinion flange using the (special tool #C-3281, Holder, Flange) and tighten the pinion nut to the proper torque specification.



1 - Inch Pound Torque Wrench

6. Measure the Pinion Torque To Rotate (PTTR) with an inch pound torque wrench. PTTR is recorded reading plus 0.56 N.m (5 In. Lbs.). If torque to rotate is low, tighten the pinion nut in 6.8 N.m (5 Ft. Lbs.) increments until torque to rotate is achieved.

CAUTION: If maximum tightening torque of 542 N.m (400 ft. lbs.) is reached before torque to rotate is achieved, the collapsible spacer may have been damaged. Never loosen pinion gear nut to decrease pinion gear bearing rotating torque and never exceed specified preload torque. Failure to follow these instruction may result in damage.

7. Install the front driveshaft. Refer to [REMOVAL AND INSTALLATION](#) .
8. Install the brake components. Refer to [CALIPER, DISC BRAKE, FRONT, REMOVAL AND INSTALLATION](#) , or [CALIPER, DISC BRAKE, REAR, REMOVAL AND INSTALLATION](#) .
9. Install the brake rotors and calipers. Refer to [ROTOR, BRAKE, REMOVAL AND INSTALLATION](#) .
10. Check and add differential fluid if necessary. Refer to [CAPACITIES AND RECOMMENDED FLUIDS, SPECIFICATIONS](#) .
11. Remove the support and lower the vehicle.

TORQUE SPECIFICATIONS

FRONT AXLE - M210

DESCRIPTION	SPECIFICATIONS	COMMENT
Bearing Cap Bolts	108 N.m (80 Ft. Lbs.)	-
Differential Cover Bolts	Torque Procedure: 1. Tighten to 20 N.m (15 Ft. Lbs.) 2. Rotate additional 20B°	Tightening Sequence Do not reuse these fasteners. If removed, a NEW fastener must be installed and tightened to specifications.
Differential Drain Plug	34 N.m (25 Ft. Lbs.)	-
Differential Fill Plug	34 N.m (25 Ft. Lbs.)	-
Front Axle Disconnect Skid Plate Bolts	42 N.m (31 Ft. Lbs.)	-

DESCRIPTION	SPECIFICATIONS	COMMENT
Front Axle Disconnect Bolts	18 N.m (13 Ft. Lbs.)	Do not reuse these fasteners. If removed, a NEW fastener must be installed and tightened to specifications.
Pinion Flange Nut	217 N.m (160 Ft. Lbs.)	Do not reuse these fasteners. If removed, a NEW fastener must be installed and tightened to specifications.
Ring Gear Bolts	136 N.m (100 Ft. Lbs.)	Do not reuse these fasteners. If removed, a NEW fastener must be installed and tightened to specifications.

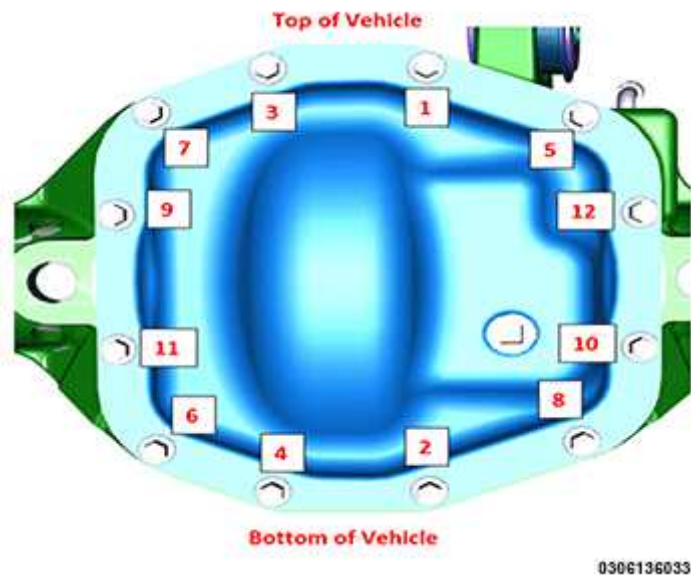
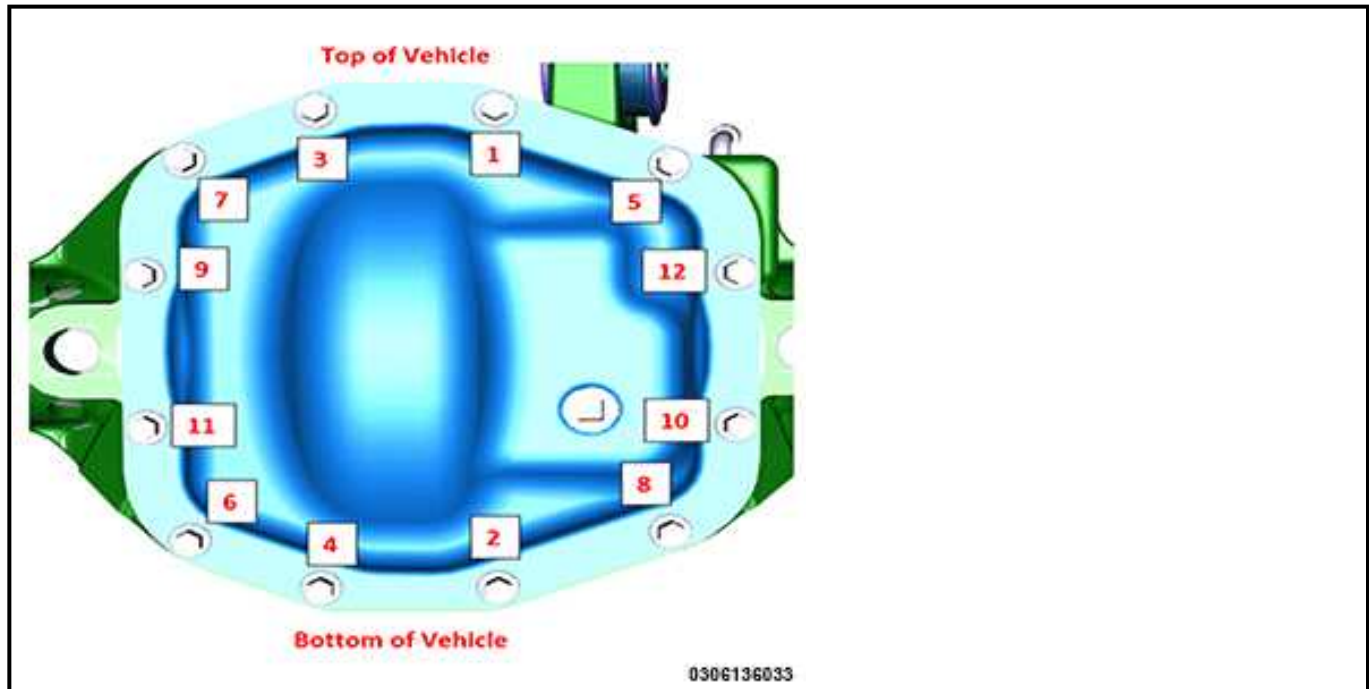


Fig. 1: Differential Cover Bolts Tightening Sequence
 Courtesy of CHRYSLER GROUP, LLC

FRONT AXLE - M210

DESCRIPTION	SPECIFICATIONS	COMMENT
Bearing Cap Bolts	108 N.m (80 Ft. Lbs.)	-
Differential Cover Bolts	Torque Procedure: 1. Tighten to 20 N.m (15 Ft. Lbs.) 2. Rotate additional 20B°	Tightening Sequence
Differential Drain Plug	34 N.m (25 Ft. Lbs.)	-
Differential Fill Plug	34 N.m (25 Ft. Lbs.)	-
Front Axle Disconnect Skid Plate Bolts	42 N.m (31 Ft. Lbs.)	-
Front Axle Disconnect Bolts	18 N.m (13 Ft. Lbs.)	Do not reuse these fasteners. If removed, a NEW fastener must be installed and tightened to specifications.
Pinion Flange Nut	217 N.m (160 Ft. Lbs.)	Do not reuse these fasteners. If removed, a NEW fastener must be

DESCRIPTION	SPECIFICATIONS	COMMENT
		installed and tightened to specifications.
Ring Gear Bolts	136 N.m (100 Ft. Lbs.)	Do not reuse these fasteners. If removed, a NEW fastener must be installed and tightened to specifications.



DRIVESHAFTS

Identify the proper CV joint bolt configuration, four or eight bolts, and begin with the first bolt referred to as "1", follow the torque sequence as indicated. In the case where there are two numbers shown for a given bolt it indicates the bolt is to be torqued again within the sequence.

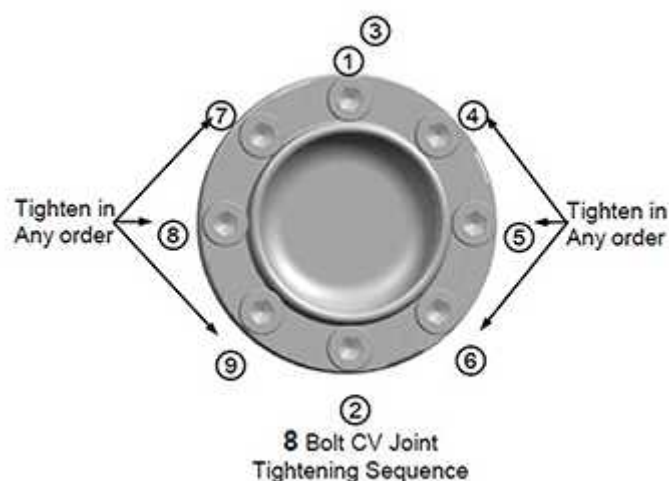
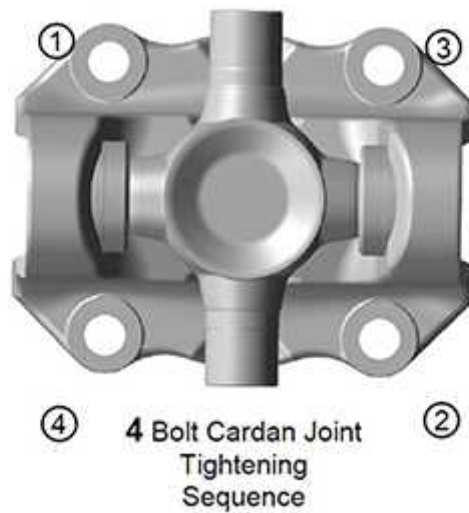


Fig. 2: CV Joint Tightening Sequence (8 Bolt)
Courtesy of CHRYSLER GROUP, LLC



0306131397

Fig. 3: Cardan Joint Tightening Sequence (4 Bolt)
Courtesy of CHRYSLER GROUP, LLC

DESCRIPTION	SPECIFICATION	COMMENT
Front Driveshaft to Front Axle Flange Bolts	121 N.m (89 Ft. Lbs.)	Do not reuse these fasteners. If removed, a NEW fastener must be installed and tightened to specifications. Torque and secure in a crisscross pattern.
Front Driveshaft to Transfer-Case Flange Bolts	39 N.m (29 Ft. Lbs.)	Do not reuse these fasteners. If removed, a NEW fastener must be installed and tightened to specifications. Torque and secure in a crisscross pattern.
Rear Driveshaft to Transfer-Case Flange Bolts	39 N.m (29 Ft. Lbs.)	Do not reuse these fasteners. If removed, a NEW fastener must be installed and tightened to specifications. Torque and secure in a crisscross pattern.
Rear Driveshaft to Rear Axle Flange Bolts	39 N.m (29 Ft. Lbs.)	Do not reuse these fasteners. If removed, a NEW fastener must be installed and tightened to specifications. Torque and secure in a crisscross pattern.
Rear Driveshaft Carrier Bearing to Frame	62 N.m (46 Ft. Lbs.)	-

REAR AXLE SEALS - M220

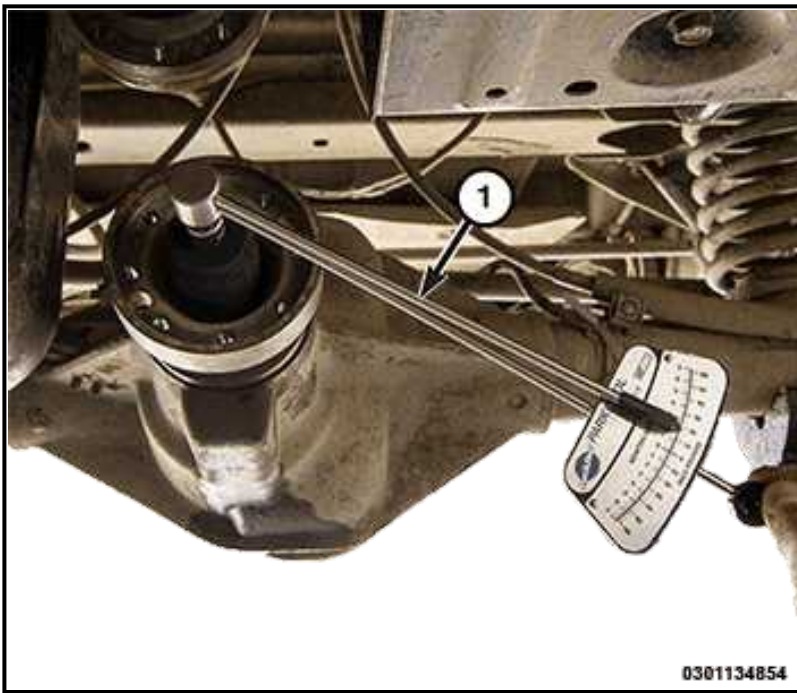
The following procedures will cover the removal and installation of the inner and outer axle seals, and the related torque specifications.

REPAIR PROCEDURES

REAR PINION SEAL

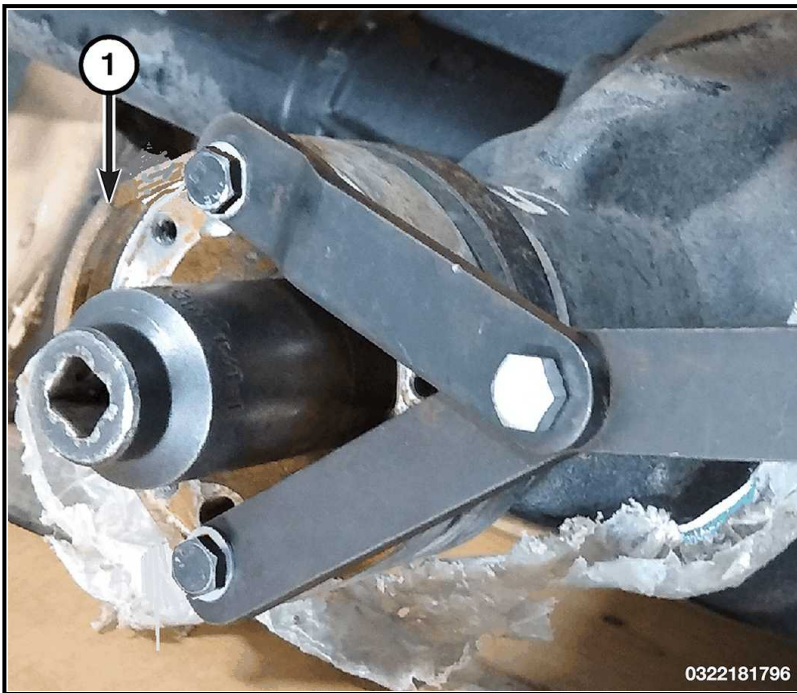
REMOVAL

1. Raise and support the vehicle. Refer to [HOISTING, STANDARD PROCEDURE](#) .
2. Remove the rear brake calipers and rotors. Refer to [ROTOR, BRAKE, REMOVAL AND INSTALLATION](#) .
3. Remove the rear driveshaft at the pinion flange. Refer to [REMOVAL AND INSTALLATION](#) .
4. Rotate the pinion gear three or four times.



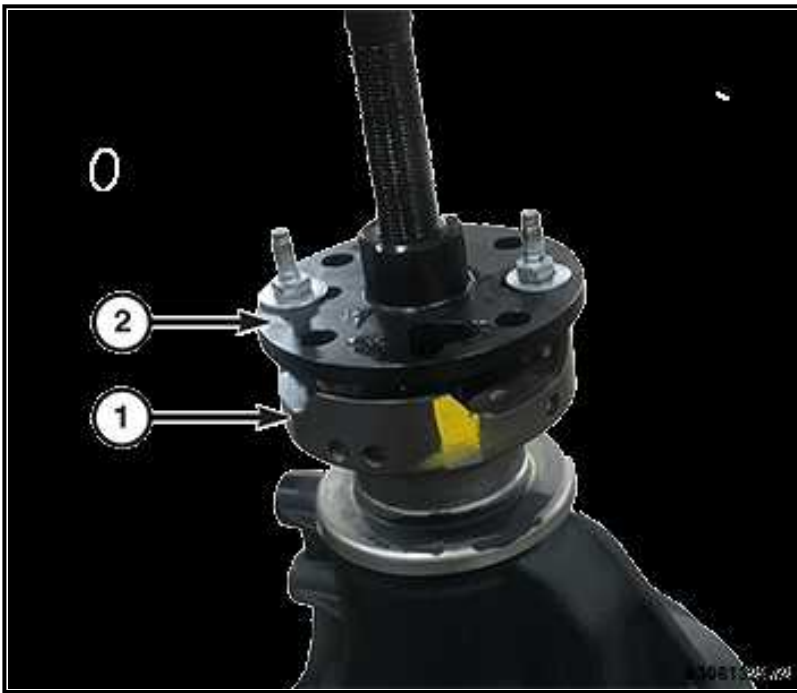
1 - Inch Pound Torque Wrench

5. Record Total Torque To Rotate (TTTR) with an inch pound torque wrench.



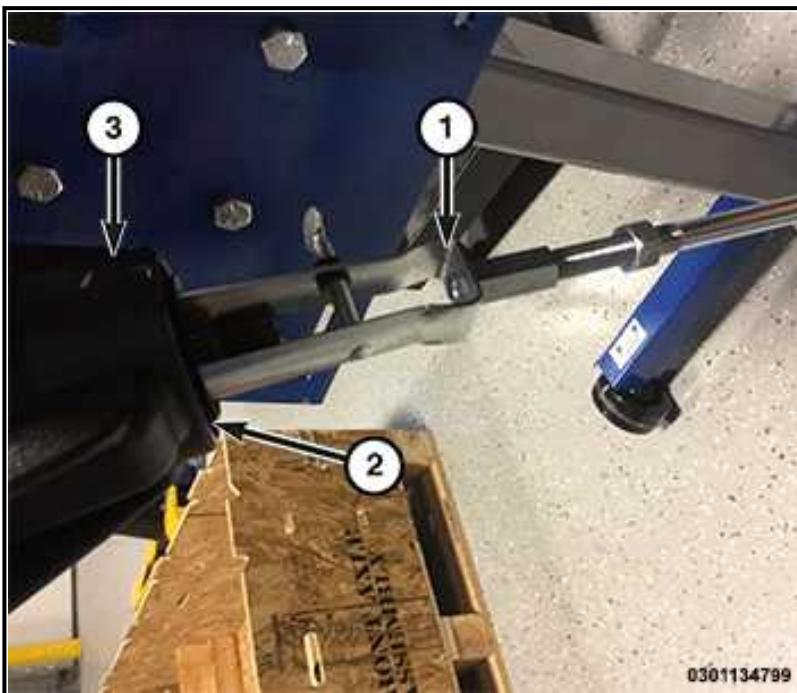
1 - Pinion Flange

6. Hold the pinion flange with (special tool #6958, Wrench, Spanner) and remove the pinion nut and washer.
7. Mark a line across the pinion shaft and flange for installation reference.



1 - Pinion Flange
2 - Pinion Flange Remover Tool

8. Remove the pinion flange using the (special tool #8992, Remover, Pinion Flange).



1 - Seal Remover
2 - Pinion Seal
3 - Differential Case

9. Remove and **DISCARD** the pinion seal from the differential case using (special tool #7794-A, Remover, Seal) and a slide hammer.

INSTALLATION

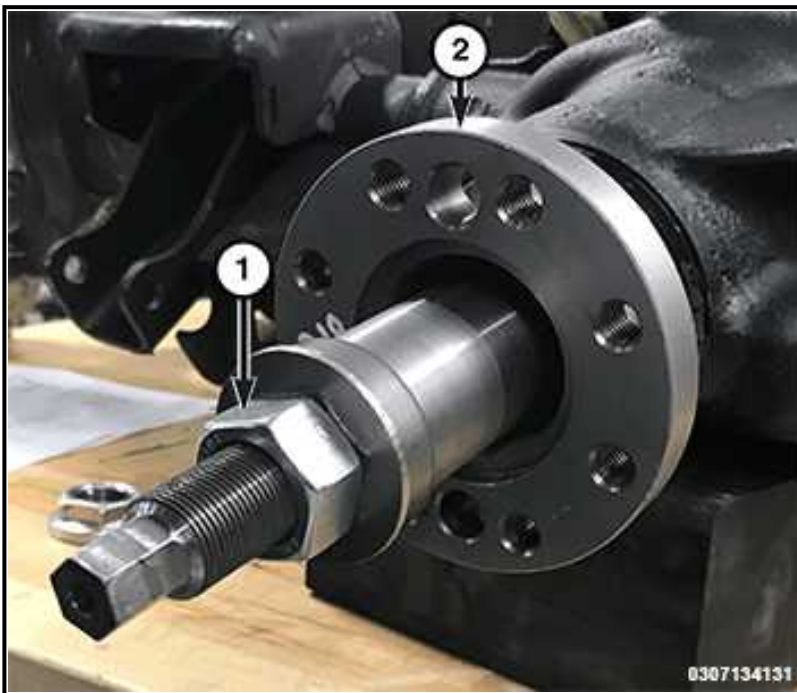
During installation, torque the fasteners to the specifications in the torque table(s) below.



1 - Seal Installer

2 - Driver Handle

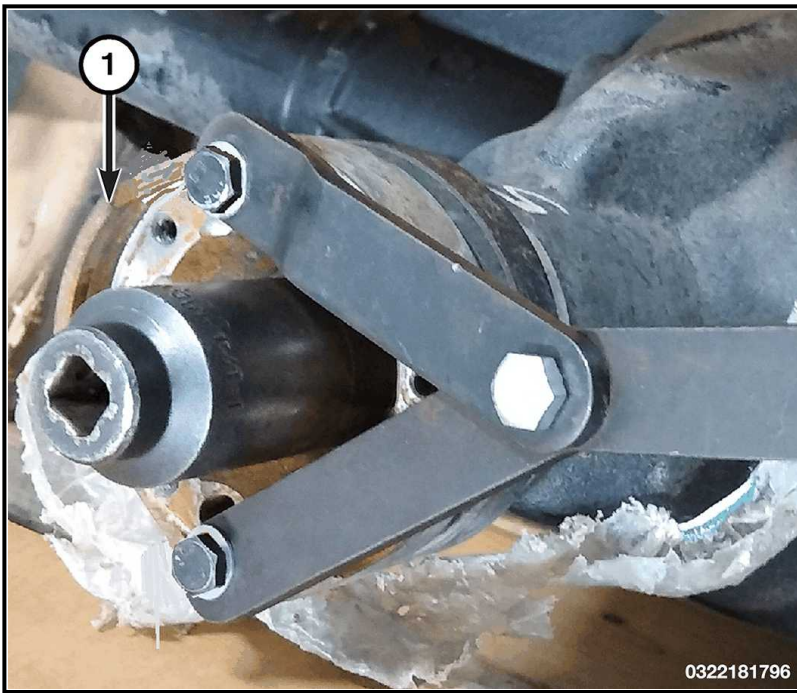
1. Apply a light coating of gear lubricant on the lip of the pinion seal. Install the pinion seal using the (special tool #9684, Installer, Seal) and (special tool #C-4171, Driver Handle, Universal).



1 - Pinion Flange

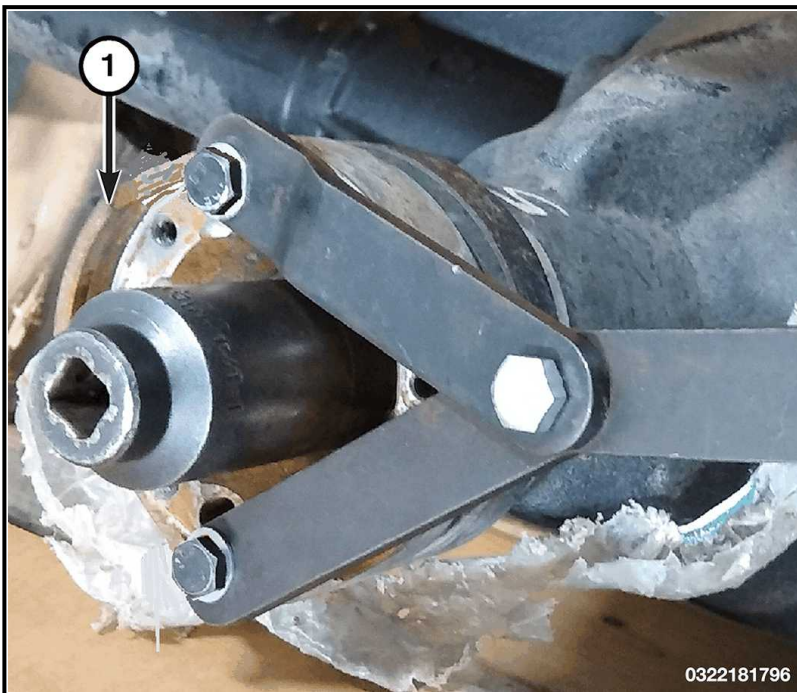
2 - Pinion Flange Installer

2. Install the pinion flange on the pinion shaft with the reference marks aligned.
3. Install the pinion flange using the (special tool #2054200030, Installer, Pinion Flange) (1) on the pinion shaft.



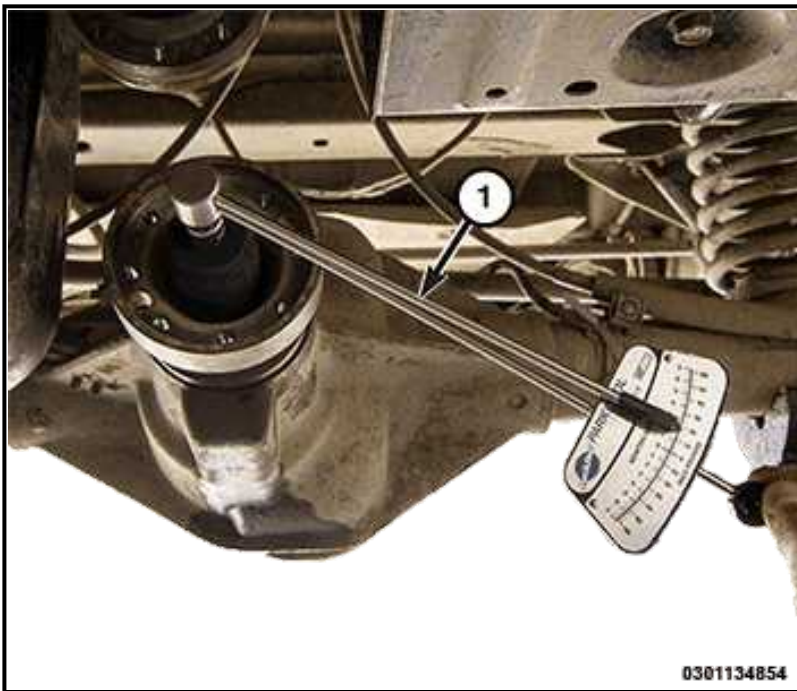
1 - Pinion Flange

4. Hold the pinion flange with (special tool #6958, Wrench, Spanner) and tighten the (special tool #2054200030, Installer, Pinion Flange) nut. Tighten the nut to remove all end play.
5. Install the pinion washer and a **NEW** nut on the pinion gear.



1 - Pinion Flange

6. Hold the pinion flange with (special tool #6958, Wrench, Spanner) and tighten the pinion nut to the proper torque specification.



1 - Inch Pound Torque Wrench

7. Measure the Total Torque To Rotate (TTTR) inch pound torque wrench. Total torque to rotate is recorded reading plus 0.56 N.m (5 In. Lbs.).
8. If TTTR is low, Hold the pinion flange with a suitable tool and tighten the pinion nut in 6.8 N.m (5 Ft. Lbs.) increments until TTTR is achieved.

NOTE: If maximum tightening torque of 678 N.m (500 Ft. Lbs.) is reached before torque to rotate is achieved, the collapsible spacer may have been damaged. Never loosen pinion gear nut to decrease rotating torque and never exceed specified preload torque. Failure to follow these instruction may result in damage.

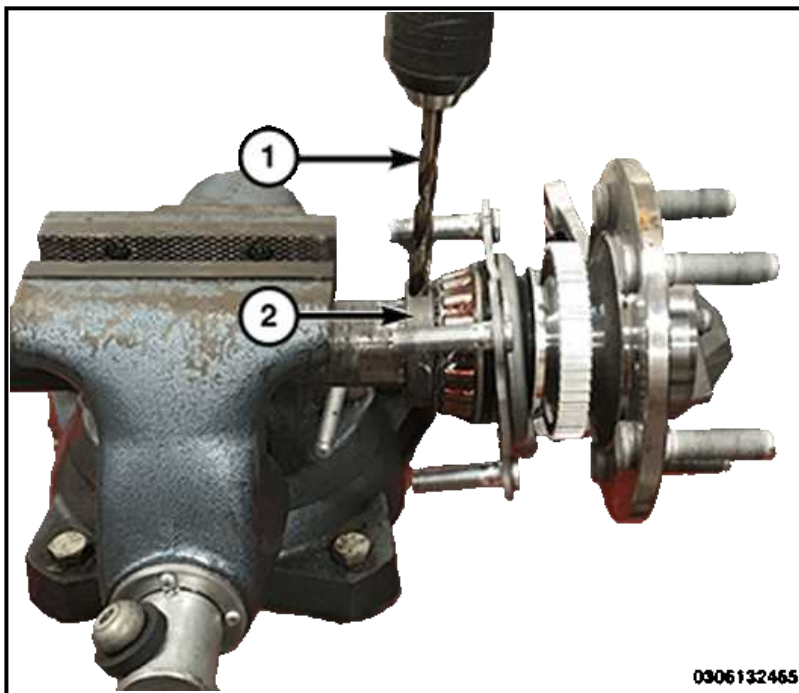
9. Install the driveshaft. Refer to [REMOVAL AND INSTALLATION](#) .
10. Install brake components. Refer to [ROTOR, BRAKE, REMOVAL AND INSTALLATION](#) .

TORQUE SPECIFICATIONS

AXLE SHAFT SEAL

REMOVAL

1. Raise and support the vehicle. Refer to [HOISTING, STANDARD PROCEDURE](#) .
2. Remove the tire and wheel assembly.
3. Remove the brake caliper and rotor. Refer to [ROTOR, BRAKE, REMOVAL AND INSTALLATION](#) .
4. Remove the parking brake shoes. Refer to [SHOES, PARKING BRAKE, REMOVAL AND INSTALLATION](#) .
5. Remove the axle shaft(s) with the backing plate from the vehicle. Refer to [REMOVAL AND INSTALLATION](#) .

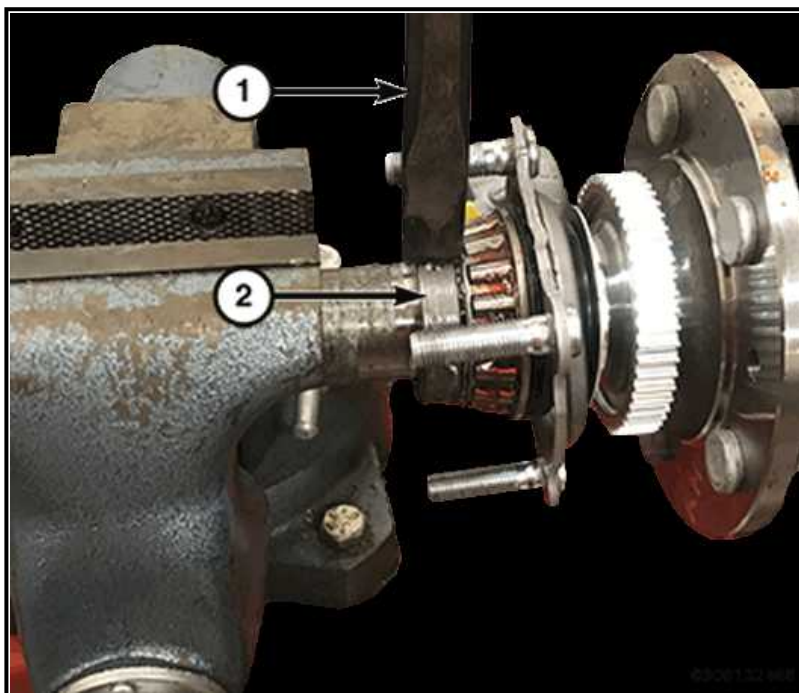


1 - Drill

2 - Axle Shaft Ring

6. Remove the axle shaft ring by staking it with a center punch and drilling the axle shaft ring.

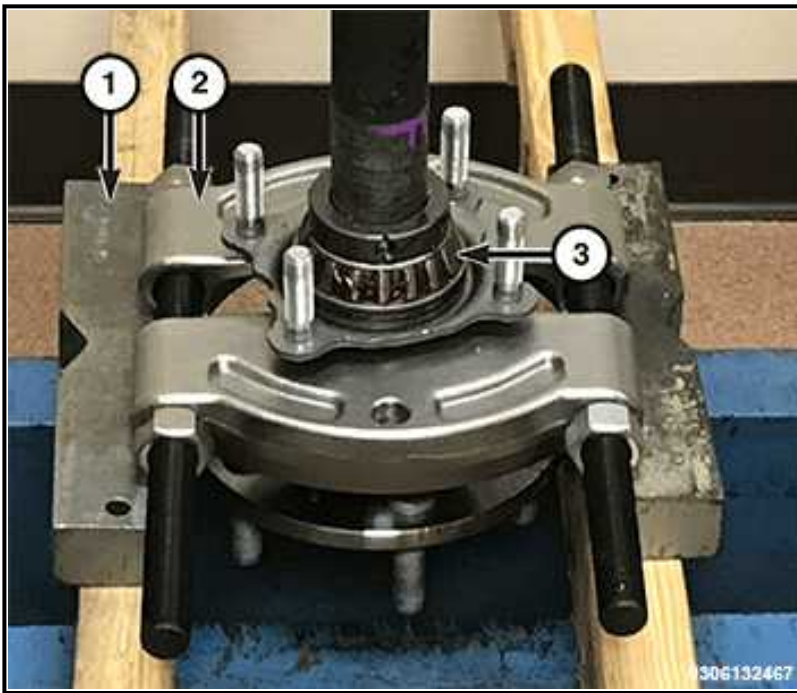
NOTE: Be careful not to drill into the axle shaft. Mark the drill bit with tape or paint to set a depth limit.



1 - Chisel

2 - Axle Shaft Ring

7. Split the axle shaft ring with a chisel and remove the ring from the axle shaft.



1 - Press Plates
2 - Bearing Splitter
3 - Axle Shaft Bearing

8. Remove the bearing using the bearing splitter (special tool #1130, Splitter, Bearing/Gear) and a press. Position the splitter between the axle shaft retainer plate and tone ring and press the assembly off shaft.
9. Remove and **DISCARD** the axle shaft ring, bearing, and seal from the axle.

INSPECTION:

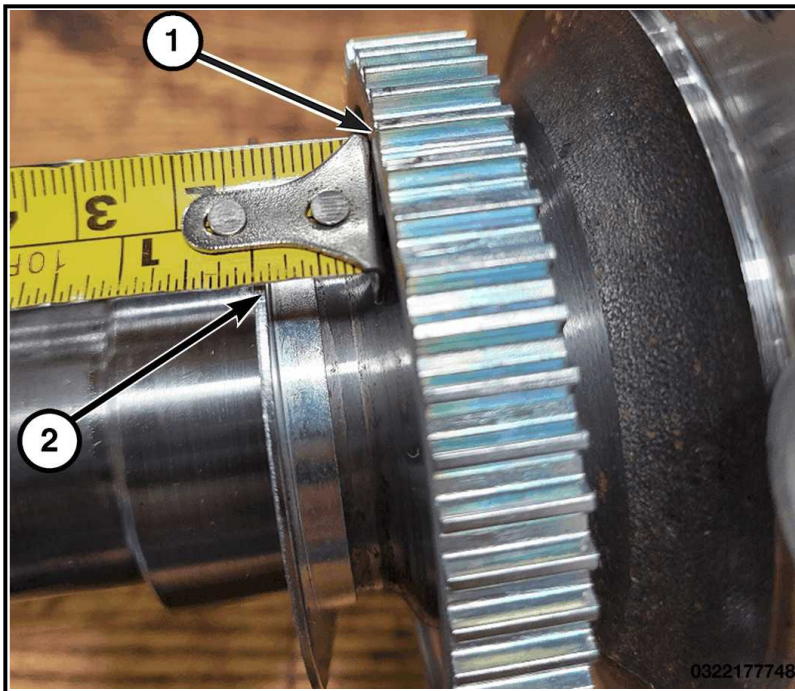
- Inspect the axle shaft retaining plate, if the plate is bent or warped replace the plate.

CLEANING:

- Clean the surface of the axle shaft where the axle seal lip rides before installing the axle shaft seal.

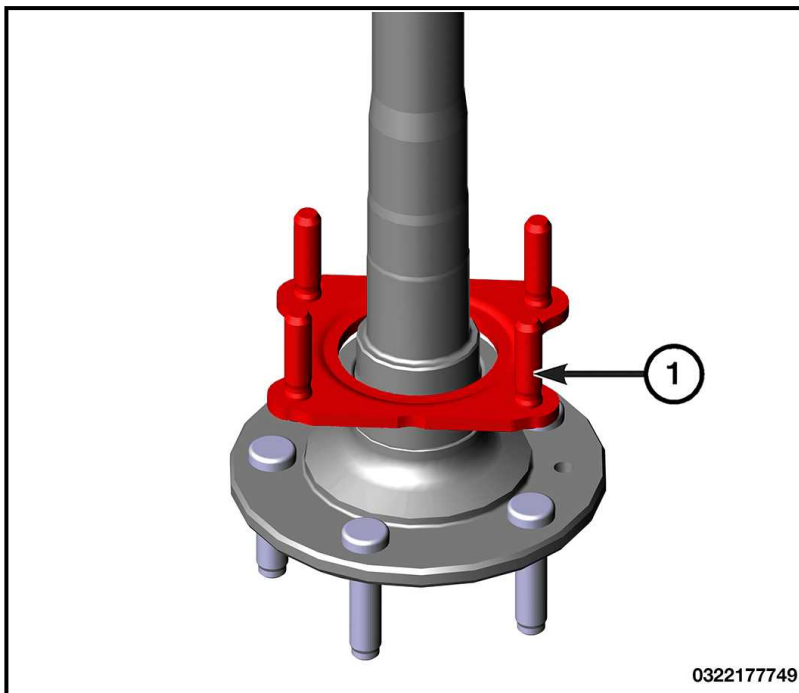
INSTALLATION

During installation, torque the fasteners to the specifications in the torque table(s) below.



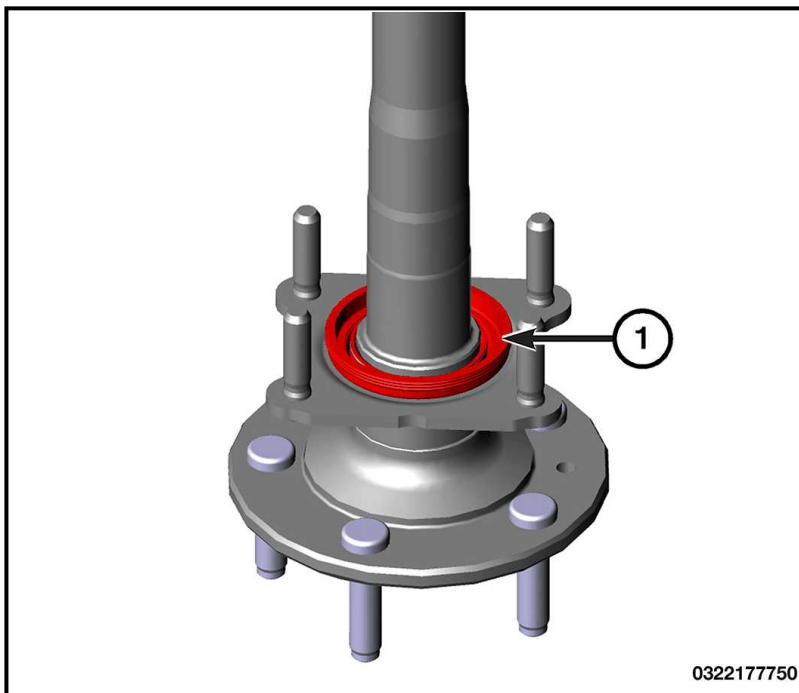
1 - Dust Shield

1. Install the seal dust shield on the axle shaft.



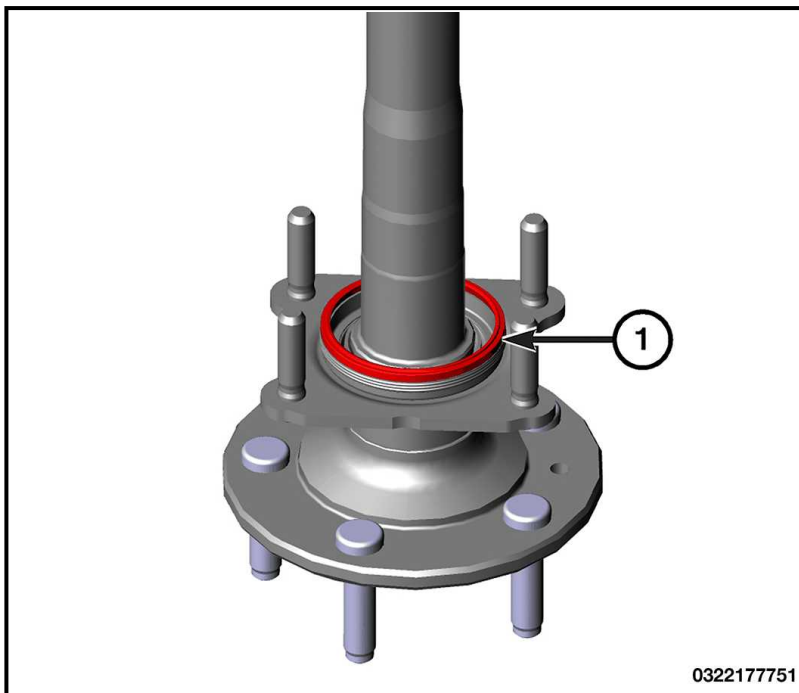
1 - Axle Shaft Retaining Plate

2. Place the axle shaft retaining plate on the axle shaft.



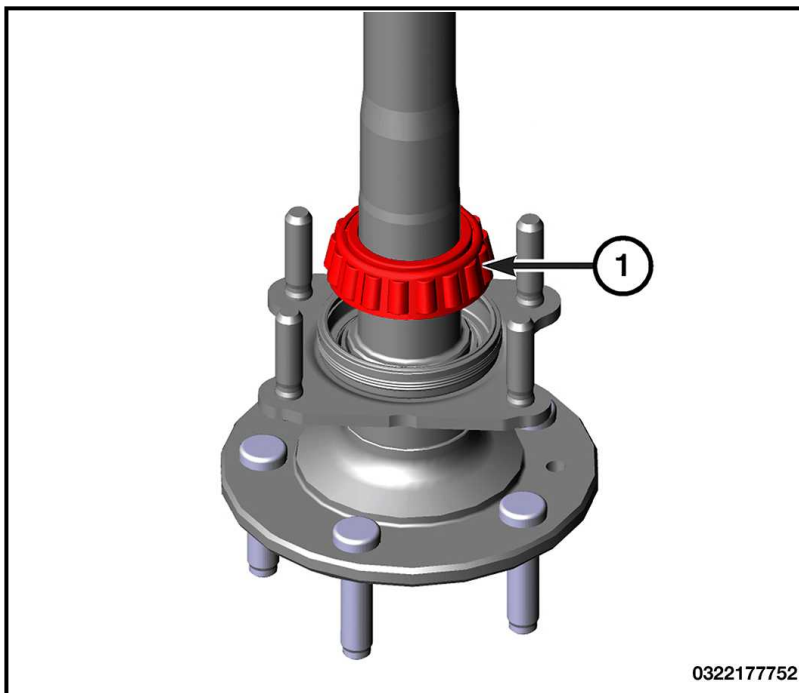
1 - Axle Seal

3. Install a **NEW** axle seal on the axle shaft.



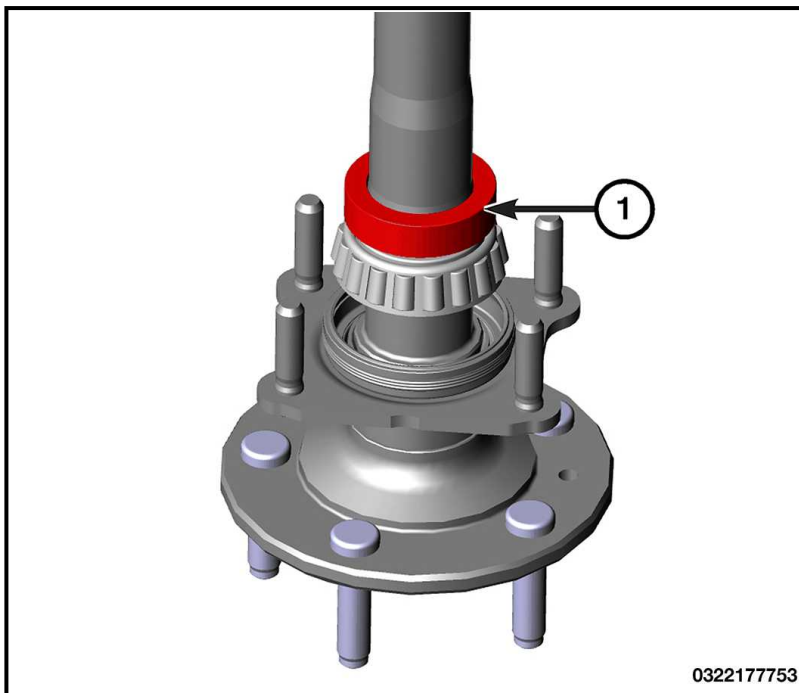
1 - Axle Seal Spacer

4. Install the axle seal spacer on the axle shaft.



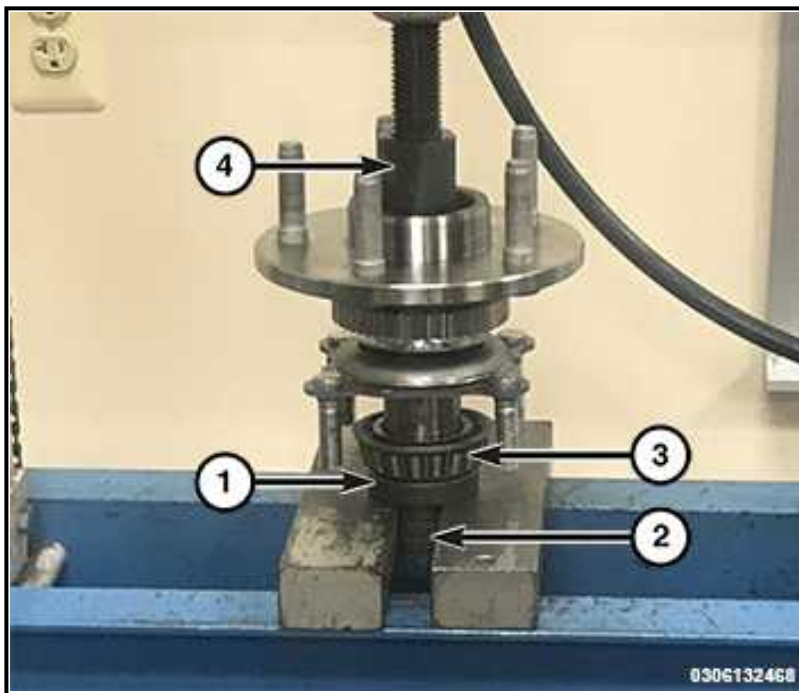
1 - Axle Bearing

5. Place a **NEW** axle bearing on the axle shaft.



1 - Axle Shaft Ring

6. Place a **NEW** axle shaft ring on the axle shaft.



1 - Axle Shaft Ring	3 - Axle Shaft Bearing
2 - Axle Shaft	4 - Press

7. Using a suitable press, press the axle shaft ring and axle shaft bearing onto the axle.
8. Install the axle shaft. Refer to [REMOVAL AND INSTALLATION](#) .
9. Install the parking brake shoes. Refer to [SHOES, PARKING BRAKE, REMOVAL AND INSTALLATION](#) .
10. Install the brake caliper and rotor. Refer to [ROTOR, BRAKE, REMOVAL AND INSTALLATION](#) .
11. Install the tire and wheel assembly.
12. Top off the rear differential fluid. Refer to [CAPACITIES AND RECOMMENDED FLUIDS, SPECIFICATIONS](#) .
13. Remove the support and lower the vehicle.

TORQUE SPECIFICATIONS

TORQUE SPECIFICATIONS

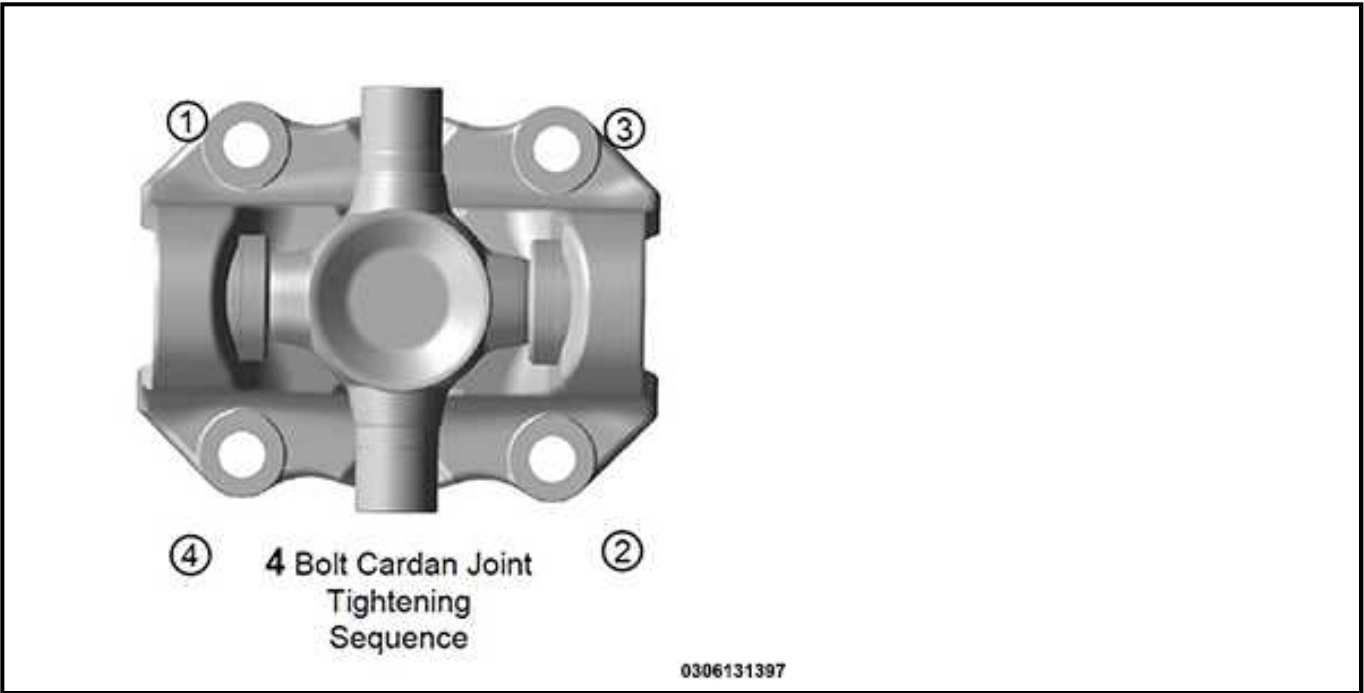
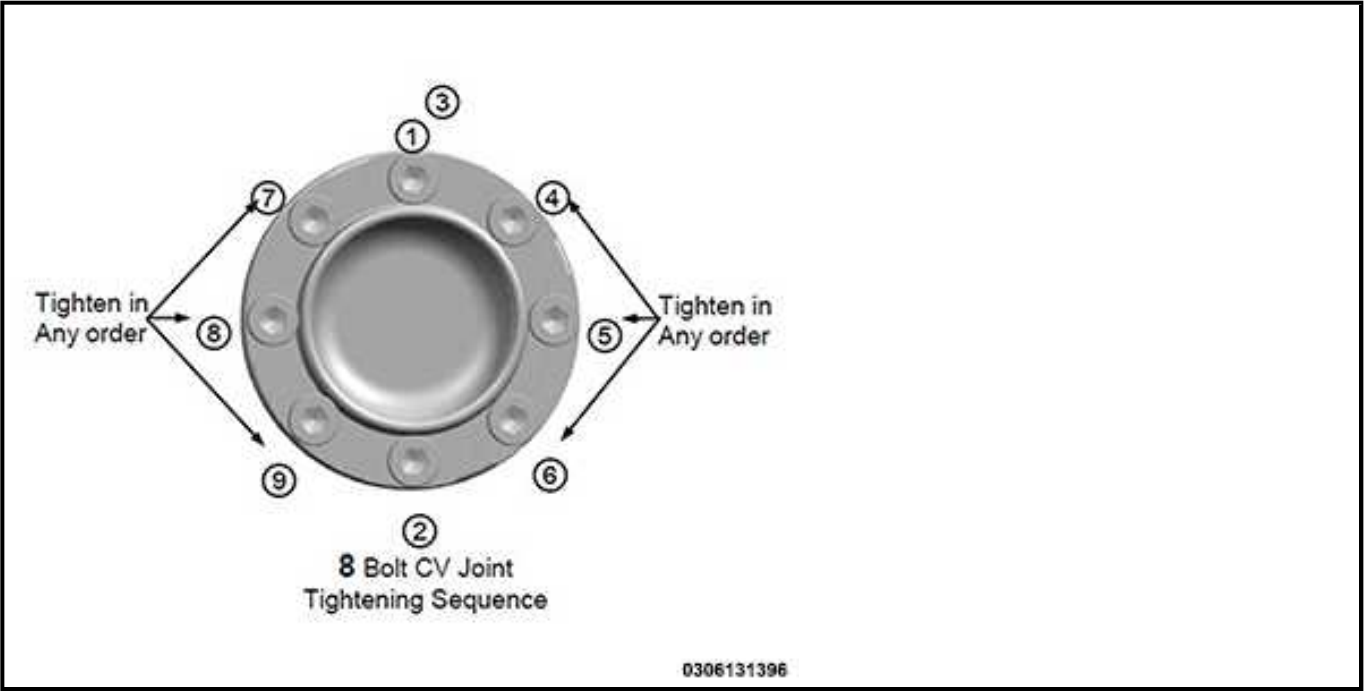
REAR AXLE - M220

DESCRIPTION	SPECIFICATIONS	COMMENT
Axle Retainer Nuts	80 N.m (59 Ft. Lbs.)	-
Bearing Cap Bolts	95 N.m (70 Ft. Lbs.)	-
Differential Cover Bolts	41 N.m (30 Ft. Lbs.)	Do not reuse these fasteners. If removed, a NEW fastener must be installed and tightened to specifications.
Drain Plug	34 N.m (25 Ft. Lbs.)	-
Fill Plug	34 N.m (25 Ft. Lbs.)	-
Pinion Nut	488 N.m (360 Ft. Lbs.)	Do not reuse these fasteners. If removed, a NEW fastener must be installed and tightened to specifications.
Ring Gear Bolts	Torque Procedure: 1. Tighten to 100 N.m (74 Ft. Lbs.)	Do not reuse these fasteners. If removed, a NEW fastener must be installed and tightened to specifications.

DESCRIPTION	SPECIFICATIONS	COMMENT
	2. Rotate additional 57.5B°	
Rear Axle Vent Fitting	22 N.m (17 Ft. Lbs.)	-

DRIVESHAFTS

Identify the proper CV joint bolt configuration, four or eight bolts, and begin with the first bolt referred to as "1", follow the torque sequence as indicated. In the case where there are two numbers shown for a given bolt it indicates the bolt is to be torqued again within the sequence.



DESCRIPTION	SPECIFICATION	COMMENT
Front Driveshaft to Front Axle Flange Bolts	121 N.m (89 Ft. Lbs.)	Do not reuse these fasteners. If removed, a NEW fastener must be installed and tightened to specifications. Torque and secure in a crisscross pattern.

DESCRIPTION	SPECIFICATION	COMMENT
Front Driveshaft to Transfer-Case Flange Bolts	39 N.m (29 Ft. Lbs.)	Do not reuse these fasteners. If removed, a NEW fastener must be installed and tightened to specifications. Torque and secure in a crisscross pattern.
Rear Driveshaft to Transfer-Case Flange Bolts	39 N.m (29 Ft. Lbs.)	Do not reuse these fasteners. If removed, a NEW fastener must be installed and tightened to specifications. Torque and secure in a crisscross pattern.
Rear Driveshaft to Rear Axle Flange Bolts	39 N.m (29 Ft. Lbs.)	Do not reuse these fasteners. If removed, a NEW fastener must be installed and tightened to specifications. Torque and secure in a crisscross pattern.
Rear Driveshaft Carrier Bearing to Frame	62 N.m (46 Ft. Lbs.)	-

2021 GENERAL INFORMATION

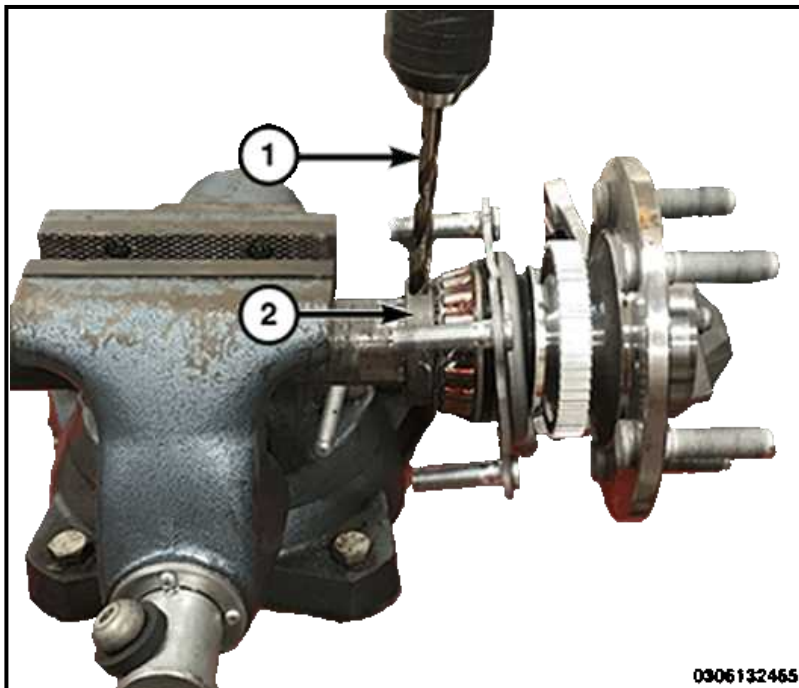
Axle Shaft & Differential Bearings - Gladiator

REMOVAL AND INSTALLATION

AXLE SHAFT BEARINGS - M220

REMOVAL

1. Raise and support the vehicle. Refer to **HOISTING, STANDARD PROCEDURE** .
2. Remove the tire and wheel assembly.
3. Remove the brake caliper and rotor. Refer to **ROTOR, BRAKE, REMOVAL AND INSTALLATION** .
4. Remove the parking brake shoes. Refer to **SHOES, PARKING BRAKE, REMOVAL AND INSTALLATION** .
5. Remove the axle shaft(s) with the backing plate from the vehicle. Refer to **REMOVAL AND INSTALLATION** .

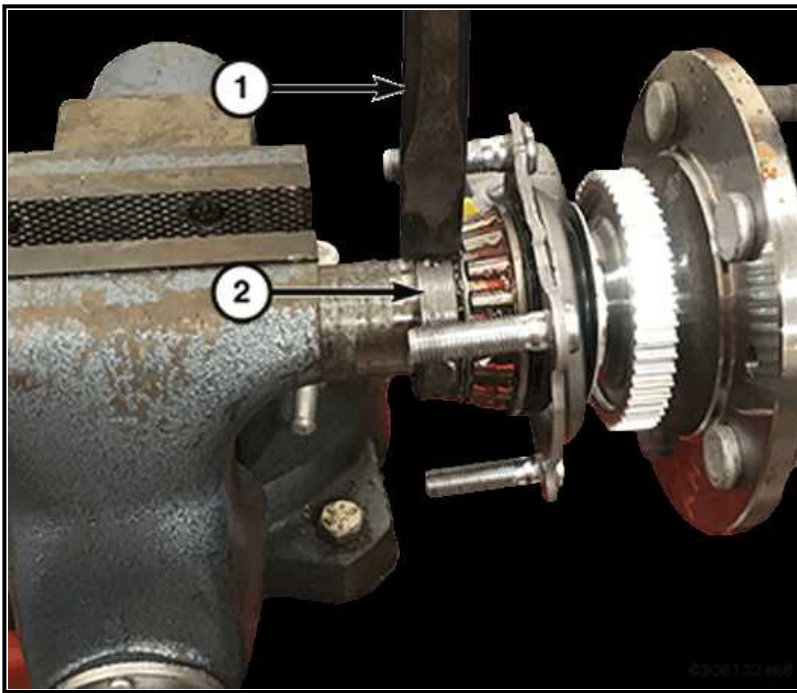


1 - Drill Bit

2 - Axle Shaft Ring

6. Remove the axle shaft ring by staking it with a center punch and drilling the axle shaft ring.

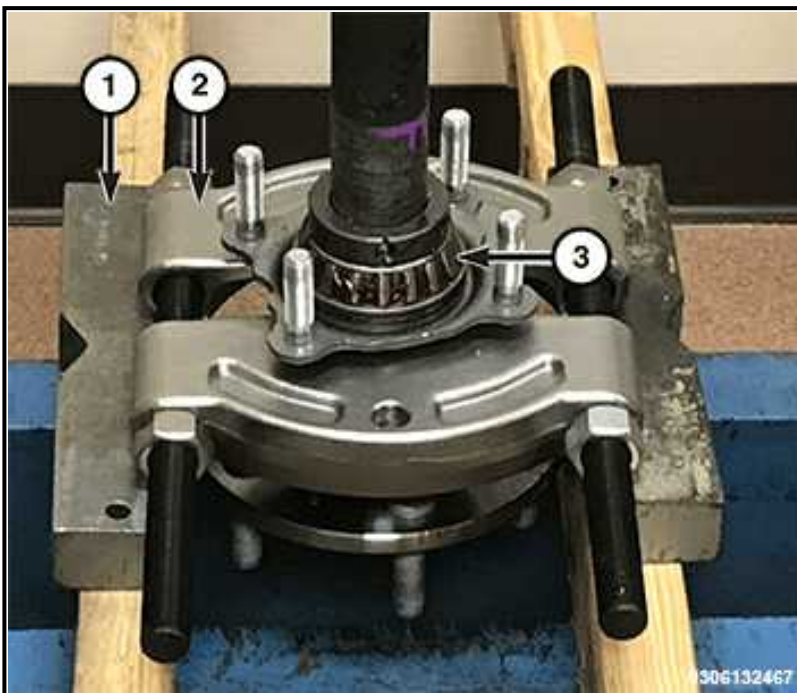
NOTE: Be careful not to drill into the axle shaft. Mark the drill bit with tape or paint to set a depth limit.



1 - Chisel

2 - Axle Shaft Ring

7. Split the axle shaft ring with a chisel and remove the ring from the axle shaft.



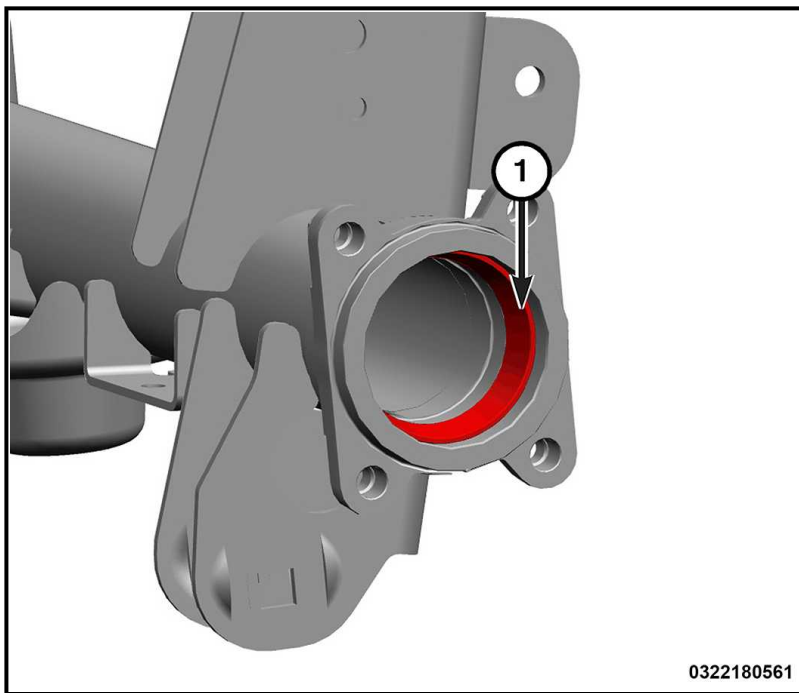
1 - Press Plates

2 - Bearing Splitter

3 - Bearing

8. Remove the bearing using the bearing splitter (special tool #1130, Splitter, Bearing/Gear) and a press. Position the splitter between the axle shaft retainer plate and tone ring and press the assembly off shaft.

9. Remove and **DISCARD** the axle shaft ring, bearing, and seal from the axle.



1 - Bearing Race

10. Using (special tool #9664, Remover, Bearing Cup) and a slide hammer, remove the bearing race from the axle housing.

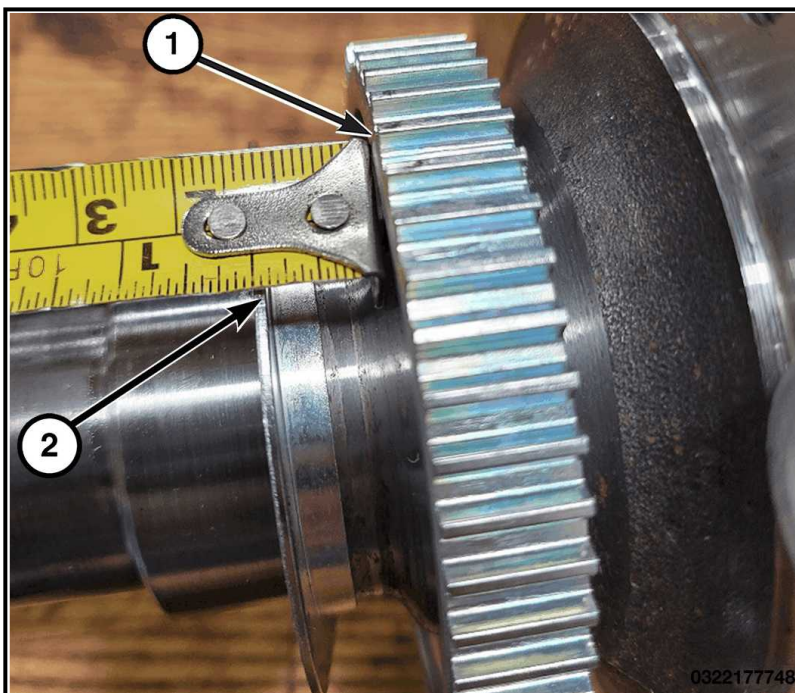
INSPECTION:

- Inspect the axle shaft retaining plate. If the plate is bent or warped replace the plate.

CLEANING:

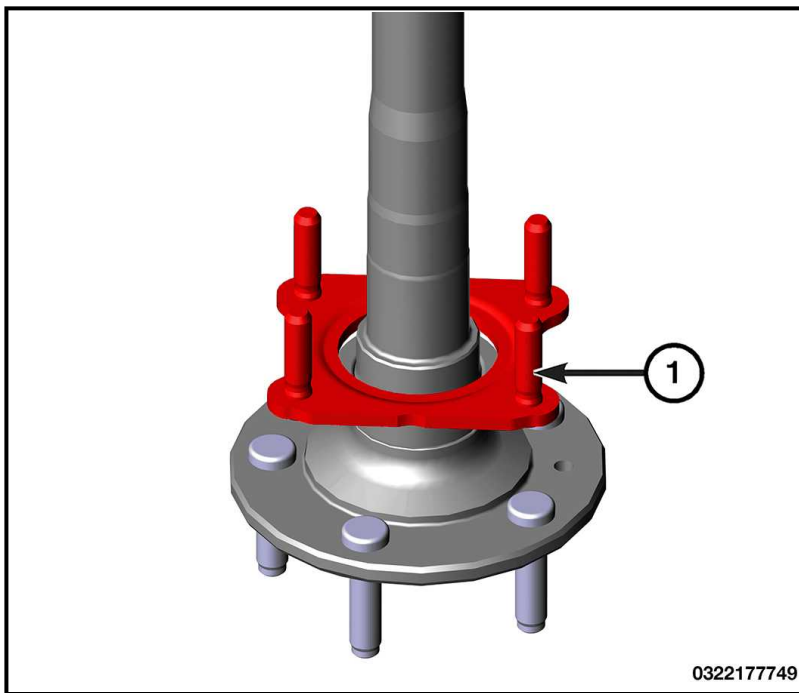
- Clean the surface of the axle shaft where the axle seal lip rides before installing the axle shaft seal.

INSTALLATION



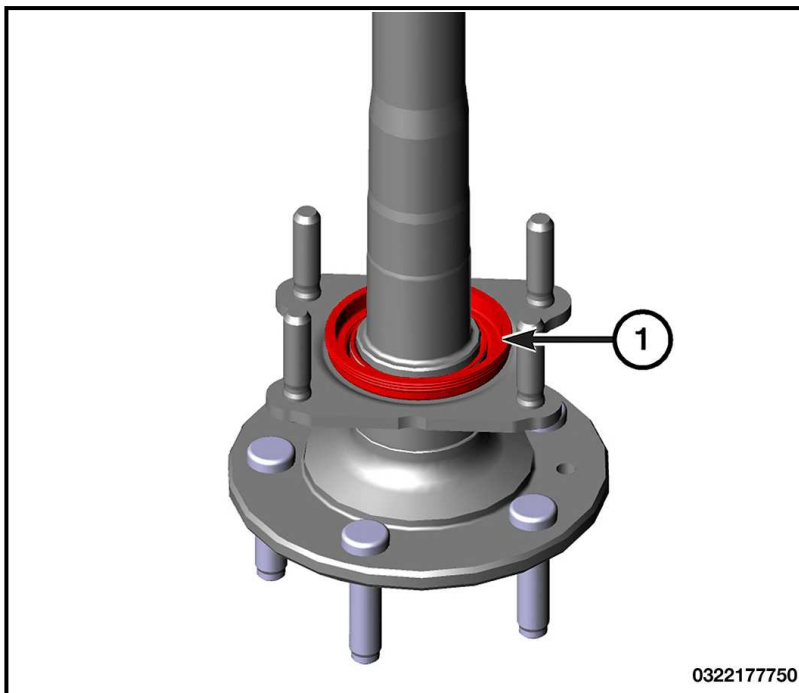
1 - Dust Shield

1. Install the seal dust shield on the axle shaft.



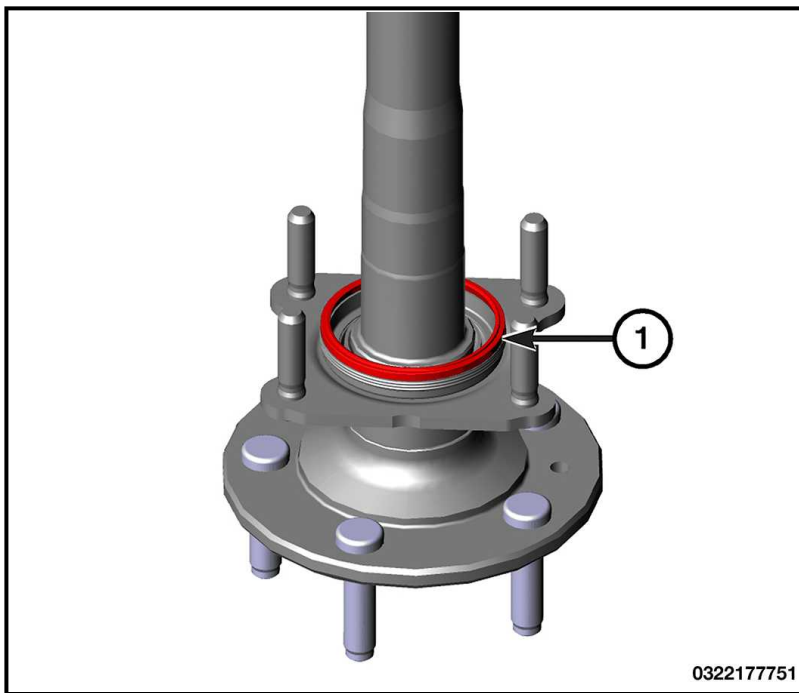
1 - Axle Shaft Retaining Plate

2. Place the axle shaft retaining plate on the axle shaft.



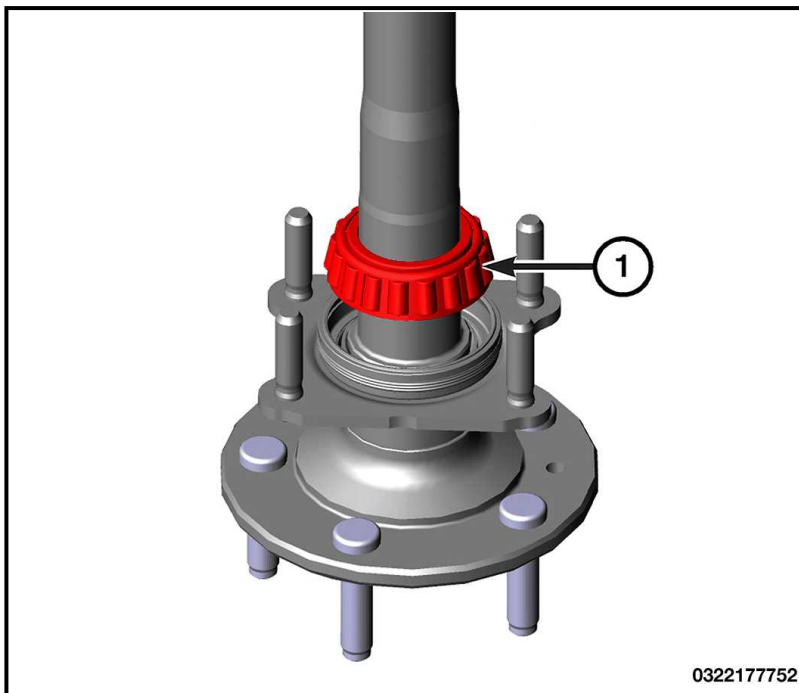
1 - Axle Seal

3. Install a **NEW** axle seal on the axle shaft.



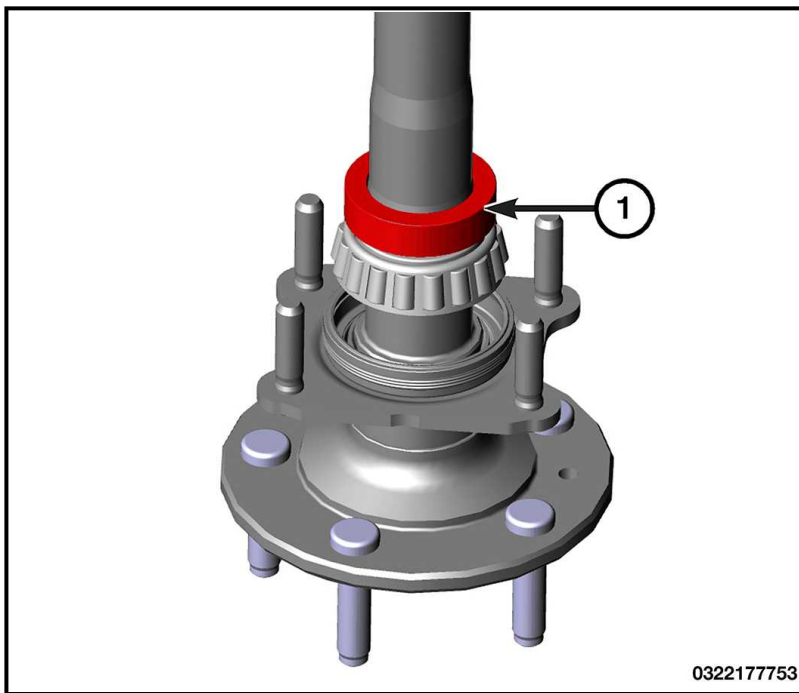
1 - Spacer

4. Install the axle seal spacer on the axle shaft.



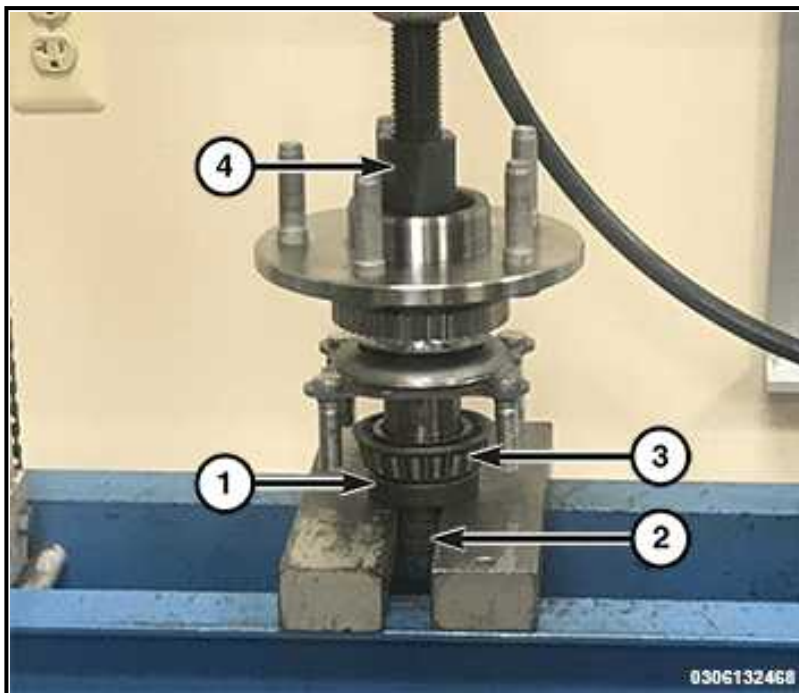
1 - Bearing

5. Place a **NEW** axle bearing on the axle shaft.



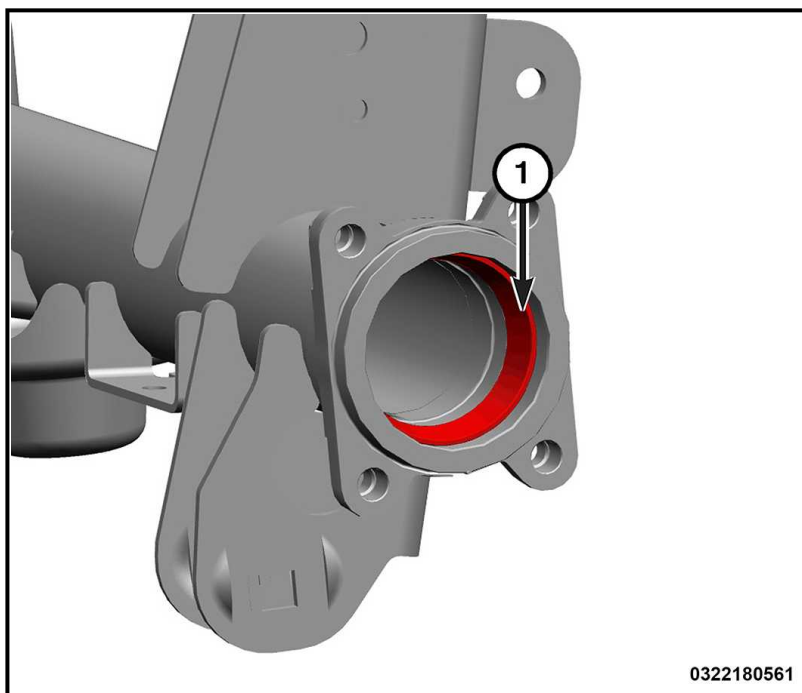
1 - Axle Shaft Bearing Ring

6. Place a **NEW** axle shaft bearing ring on the axle shaft.



1 - Axle Shaft Bearing Ring	3 - Axle Shaft Bearing
2 - Axle	4 - Press

7. Using a suitable press, press the axle shaft bearing ring and axle shaft bearing onto the axle.



1 - Bearing Race

8. Install the bearing race in the axle housing.
9. Install the axle shaft. Refer to [REMOVAL AND INSTALLATION](#) .
10. Install the parking brake shoes. Refer to [SHOES, PARKING BRAKE, REMOVAL AND INSTALLATION](#) .
11. Install the brake caliper and rotor. Refer to [ROTOR, BRAKE, REMOVAL AND INSTALLATION](#) .
12. Install the tire and wheel assembly.
13. Top off the rear differential fluid. Refer to [CAPACITIES AND RECOMMENDED FLUIDS, SPECIFICATIONS](#) .
14. Remove the support and lower the vehicle.

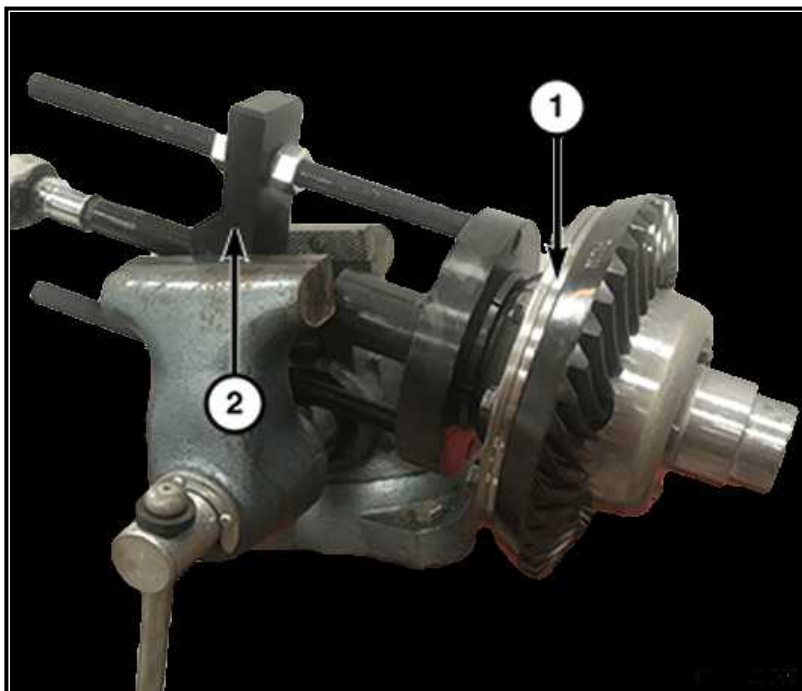
REAR AXLE - M220

DESCRIPTION	SPECIFICATIONS	COMMENT
Axle Retainer Nuts	80 N.m (59 Ft. Lbs.)	-
Bearing Cap Bolts	95 N.m (70 Ft. Lbs.)	-
Differential Cover Bolts	41 N.m (30 Ft. Lbs.)	Do not reuse these fasteners. If removed, a NEW fastener must be installed and tightened to specifications.
Drain Plug	34 N.m (25 Ft. Lbs.)	-
Fill Plug	34 N.m (25 Ft. Lbs.)	-
Pinion Nut	488 N.m (360 Ft. Lbs.)	Do not reuse these fasteners. If removed, a NEW fastener must be installed and tightened to specifications.
Ring Gear Bolts	Torque Procedure: 1. Tighten to 100 N.m (74 Ft. Lbs.) 2. Rotate additional 57.5B°	Do not reuse these fasteners. If removed, a NEW fastener must be installed and tightened to specifications.
Rear Axle Vent Fitting	22 N.m (17 Ft. Lbs.)	-

DIFFERENTIAL SIDE BEARINGS - M210

REMOVAL

1. Remove the differential case from the axle housing. Refer to [REMOVAL AND INSTALLATION](#) .



1 - Differential Case

2 - Puller Press

2. Remove the flange side differential bearing using (special tool #C-293-PA, Puller, Press), (special tool #C-293-62, Block Set, Puller) and (special tool #C-293-3, Adapter, Bearing/Gear).



1 - Puller Press

2 - Bearing Adaptor

3 - Differential Case

3. Remove the button side differential side bearing using the puller (special tool #C-293-PA, Puller, Press) with inserts (special tool #C-293-42, Block Set, Puller) in the puller and the adapter (special tool #C-293-3, Adapter, Bearing/Gear).

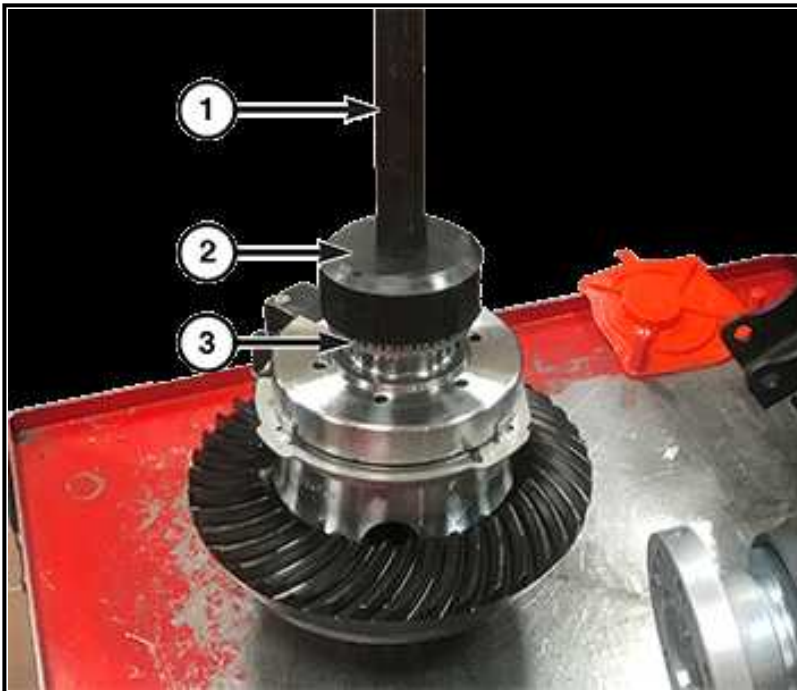
INSTALLATION

During installation, torque the fasteners to the specifications in the torque table(s) below.



1 - Bearing Installer

1. Install the flange side differential side bearing using the (special tool #6761, Installer, Ball Joint) (2) and (special tool #C-4171, Driver Handle, Universal).



1 - Drive Handle

2 - Bearing Installer

3 - Bearing

2. Install the button side differential side bearing using the (special tool #C-4213, Installer, Bearing) and (special tool #C-4171, Driver Handle, Universal).
3. Install the differential into the axle housing. Refer to **REMOVAL AND INSTALLATION** .

TORQUE SPECIFICATIONS

FRONT AXLE - M210

DESCRIPTION	SPECIFICATIONS	COMMENT
Bearing Cap Bolts	108 N.m (80 Ft. Lbs.)	-
Differential Cover Bolts	Torque Procedure: 1. Tighten to 20 N.m (15 Ft. Lbs.) 2. Rotate additional 20B°	Tightening Sequence
Differential Drain Plug	34 N.m (25 Ft. Lbs.)	-
Differential Fill Plug	34 N.m (25 Ft. Lbs.)	-
Front Axle Disconnect Skid Plate Bolts	42 N.m (31 Ft. Lbs.)	-
Front Axle Disconnect Bolts	18 N.m (13 Ft. Lbs.)	Do not reuse these fasteners. If removed, a NEW fastener must be installed and tightened to specifications.
Pinion Flange Nut	217 N.m (160 Ft. Lbs.)	Do not reuse these fasteners. If removed, a NEW fastener must be installed and tightened to specifications.
Ring Gear Bolts	136 N.m (100 Ft. Lbs.)	Do not reuse these fasteners. If removed, a NEW fastener must be installed and tightened to specifications.

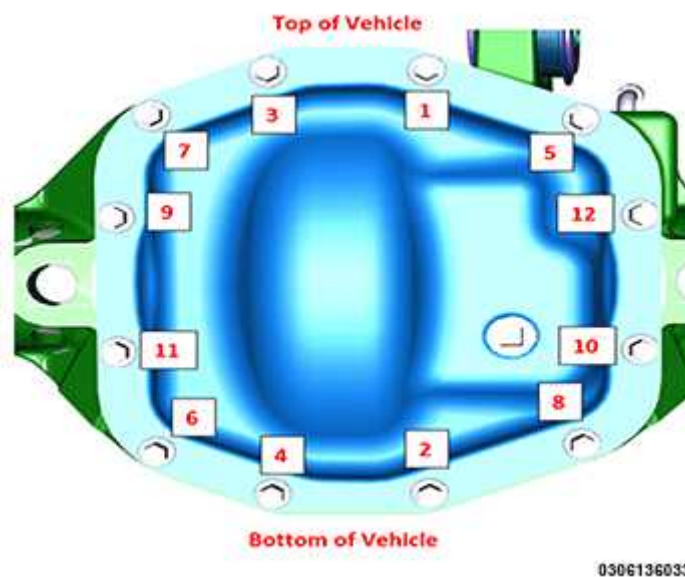


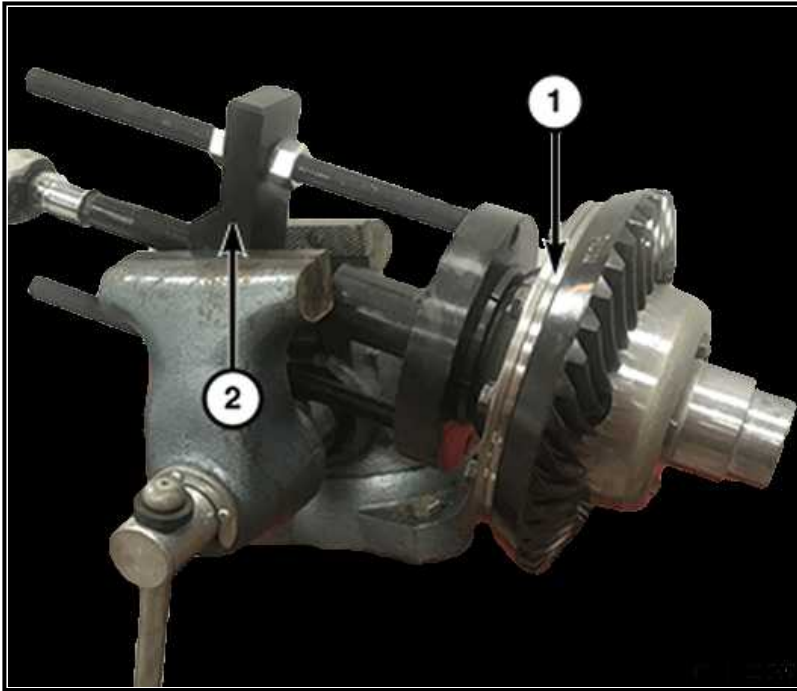
Fig. 1: Differential Cover Bolts Tightening Sequence

Courtesy of CHRYSLER GROUP, LLC

DIFFERENTIAL SIDE BEARINGS - M220

REMOVAL

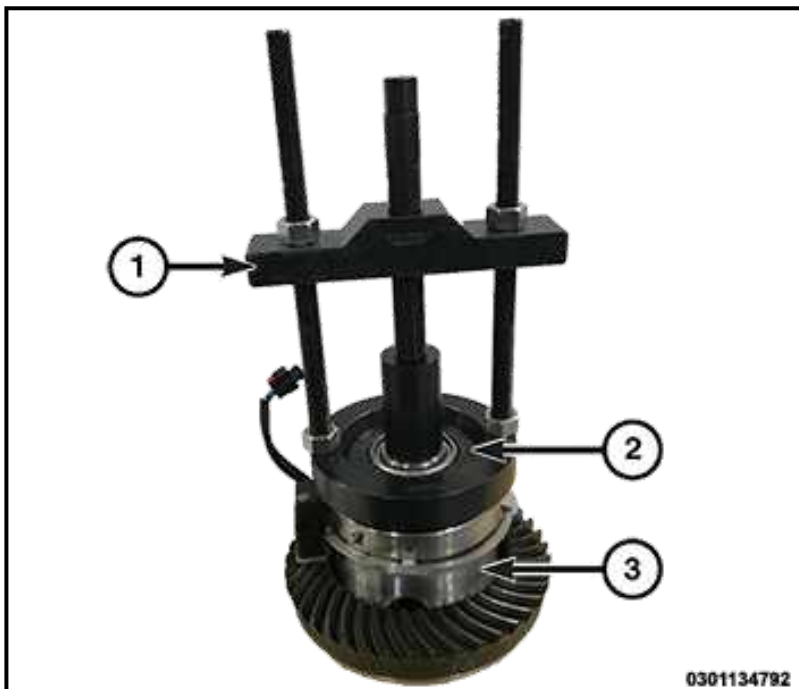
1. Remove the differential case from the differential housing. Refer to **REMOVAL AND INSTALLATION** .



1 - Differential Case

2 - Puller Press

2. Remove the flange side differential bearing using (special tool #C-293-PA, Puller, Press), (special tool #C-293-62, Block Set, Puller) and (special tool #9676, Adapter Plug).



1 - Puller Press

2 - Bearing Adaptor

3 - Differential Case

3. Remove the button side differential side bearing using the puller (special tool #C-293-PA, Puller, Press) with inserts (special tool #C-293-47, Block Set, Puller) in the puller and the adapter (special tool #C-293-3, Adapter, Bearing/Gear).

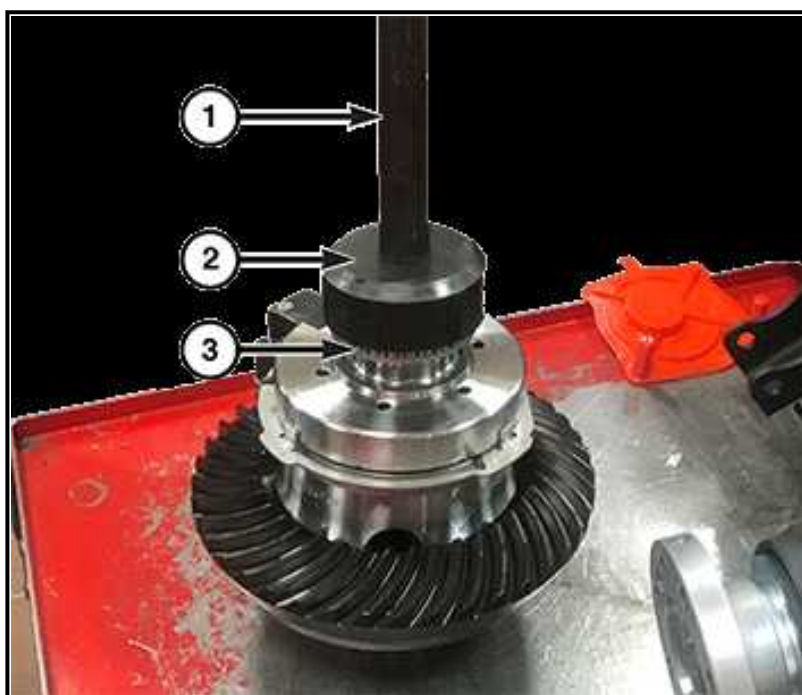
INSTALLATION

During installation, torque the fasteners to the specifications in the torque table(s) below.



1 - Bearing Installer

1. Install the flange side differential side bearing using the (special tool #6761, Installer, Ball Joint) and (special tool #C-4171, Driver Handle, Universal).



1 - Drive Handle

2 - Bearing Installer

3 - Bearing

2. Install the button side differential side bearing using the (special tool #C-4213, Installer, Bearing) and (special tool #C-4171, Driver Handle, Universal).
3. Install the differential case into the differential housing. Refer to [REMOVAL AND INSTALLATION](#) .

TORQUE SPECIFICATIONS

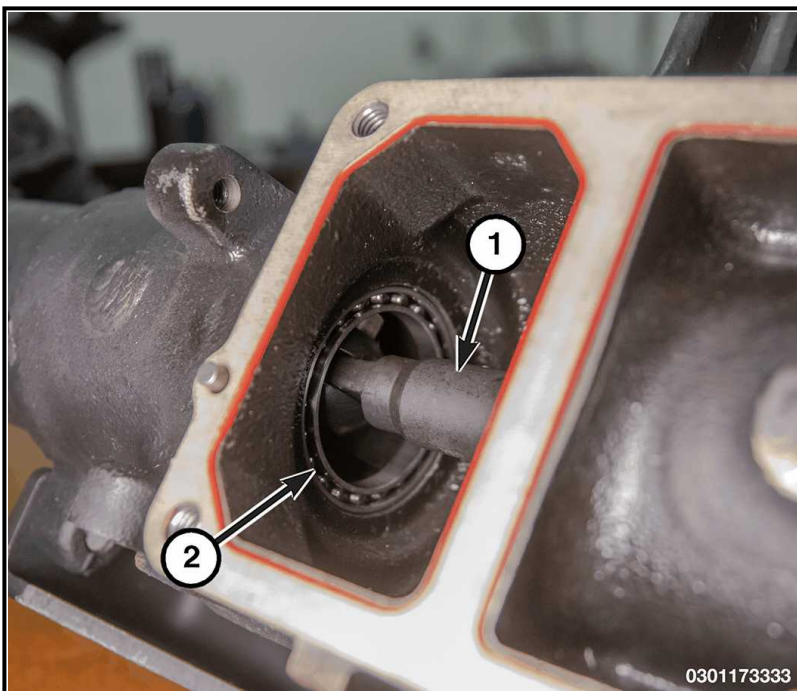
REAR AXLE - M220

DESCRIPTION	SPECIFICATIONS	COMMENT
Axle Retainer Nuts	80 N.m (59 Ft. Lbs.)	-
Bearing Cap Bolts	95 N.m (70 Ft. Lbs.)	-
Differential Cover Bolts	41 N.m (30 Ft. Lbs.)	Do not reuse these fasteners. If removed, a NEW fastener must be installed and tightened to specifications.
Drain Plug	34 N.m (25 Ft. Lbs.)	-
Fill Plug	34 N.m (25 Ft. Lbs.)	-
Pinion Nut	488 N.m (360 Ft. Lbs.)	Do not reuse these fasteners. If removed, a NEW fastener must be installed and tightened to specifications.
Ring Gear Bolts	Torque Procedure: 1. Tighten to 100 N.m (74 Ft. Lbs.) 2. Rotate additional 57.5B°	Do not reuse these fasteners. If removed, a NEW fastener must be installed and tightened to specifications.
Rear Axle Vent Fitting	22 N.m (17 Ft. Lbs.)	-

INTERMEDIATE BEARING - M210

REMOVAL

1. Raise and support the vehicle. Refer to [HOISTING, STANDARD PROCEDURE](#) .
2. Remove the intermediate stub shaft. Refer to [REMOVAL AND INSTALLATION](#) .



1 - Pressing Tool

2 - Intermediate Shaft Bearing

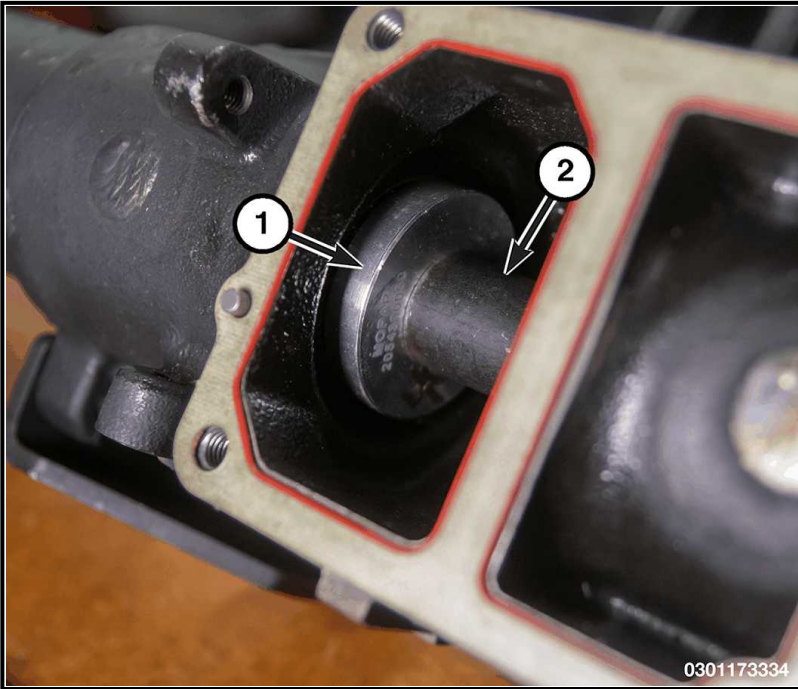
- 3. Using (special tool #2026900170, Kit, Pressing Tool), (special tool #8961, Installer, Bearing Cup), (special tool #6310-5, Head), and (special tool #6310A-11, Clevis, Bearing Intermediate Shaft Remover) remove the intermediate shaft bearing.
- 4. Clean and inspect bearing bore for damage.

INSTALLATION

During installation, torque the fasteners to the specifications in the torque table(s) below.

Follow the removal procedure in reverse for general reassembly of the components on the vehicle. The steps listed below are calling out specific procedures that should be followed during installation.

- Use the (special tool #2054300030, Installer, Bearing Intermediate Shaft), (special tool #C-4171, Driver Handle, Universal) and (special tool #C-4171-2, Extension, Drive Handle) to install the bearing into the housing.



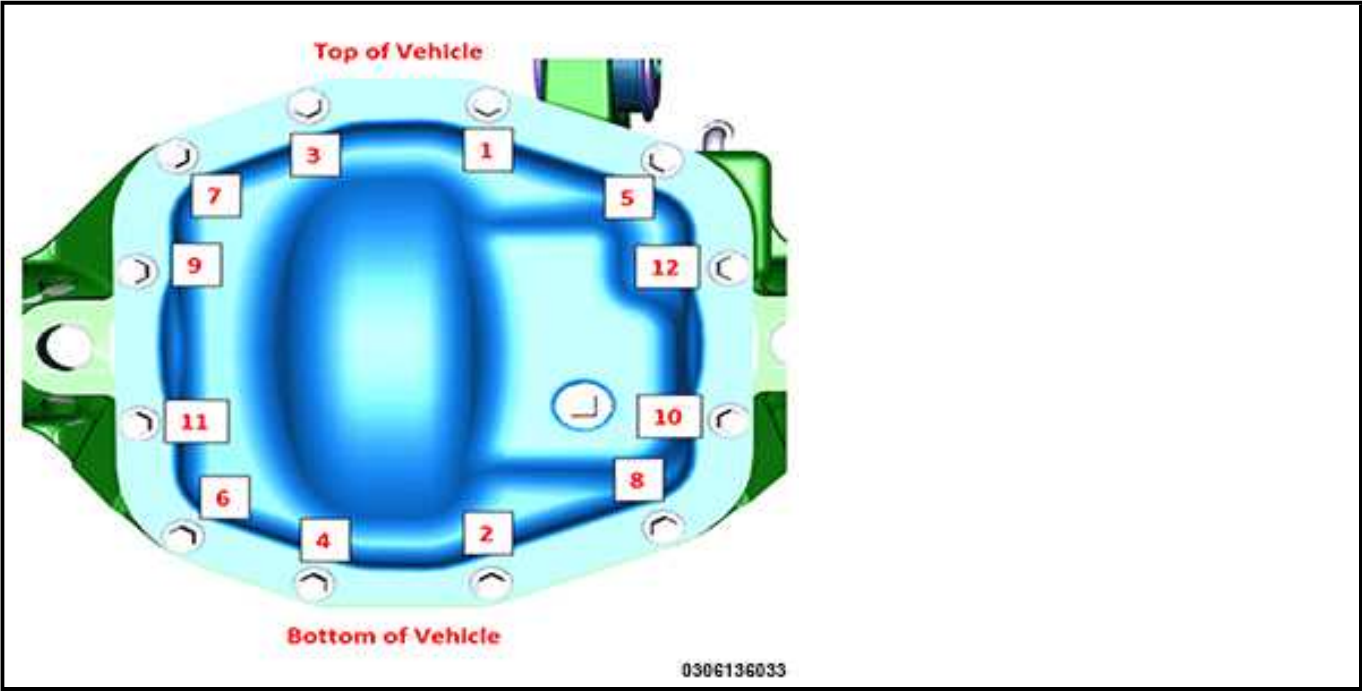
1 - Intermediate Shaft Bearing Installer
2 - Driver Handle

TORQUE SPECIFICATIONS

FRONT AXLE - M210

DESCRIPTION	SPECIFICATIONS	COMMENT
Bearing Cap Bolts	108 N.m (80 Ft. Lbs.)	-
Differential Cover Bolts	Torque Procedure: 1. Tighten to 20 N.m (15 Ft. Lbs.) 2. Rotate additional 20B°	Tightening Sequence
Differential Drain Plug	34 N.m (25 Ft. Lbs.)	-
Differential Fill Plug	34 N.m (25 Ft. Lbs.)	-
Front Axle Disconnect Skid Plate Bolts	42 N.m (31 Ft. Lbs.)	-
Front Axle Disconnect Bolts	18 N.m (13 Ft. Lbs.)	Do not reuse these fasteners. If removed, a NEW fastener must be

DESCRIPTION	SPECIFICATIONS	COMMENT
		installed and tightened to specifications.
Pinion Flange Nut	217 N.m (160 Ft. Lbs.)	Do not reuse these fasteners. If removed, a NEW fastener must be installed and tightened to specifications.
Ring Gear Bolts	136 N.m (100 Ft. Lbs.)	Do not reuse these fasteners. If removed, a NEW fastener must be installed and tightened to specifications.



2021 GENERAL INFORMATION

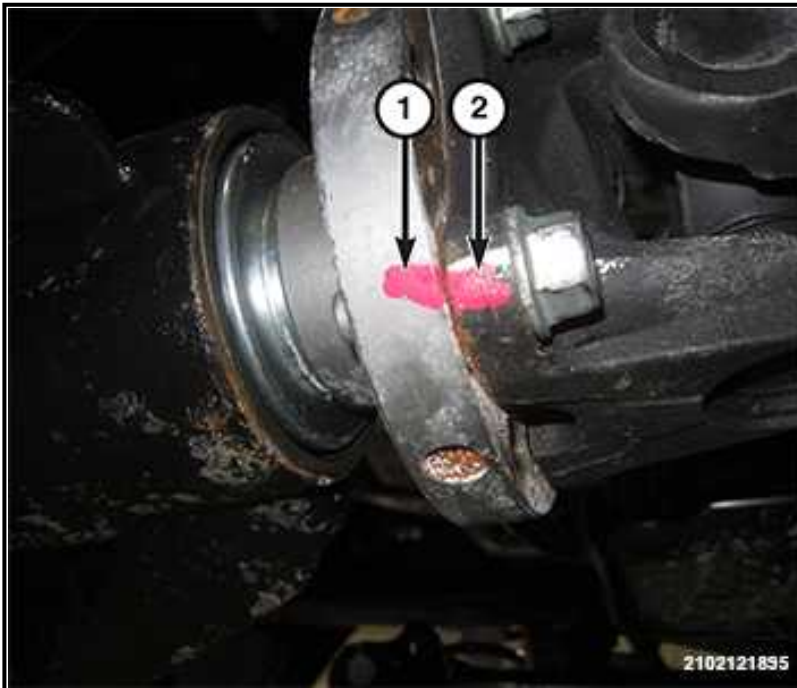
Axle Shafts, Drive Shafts & Half Shafts - Gladiator

REMOVAL AND INSTALLATION

FRONT DRIVESHAFT

REMOVAL

1. Raise and support the vehicle. Refer to [HOISTING, STANDARD PROCEDURE](#).



1 - Front Driveshaft Flange
2 - Front Axle Flange

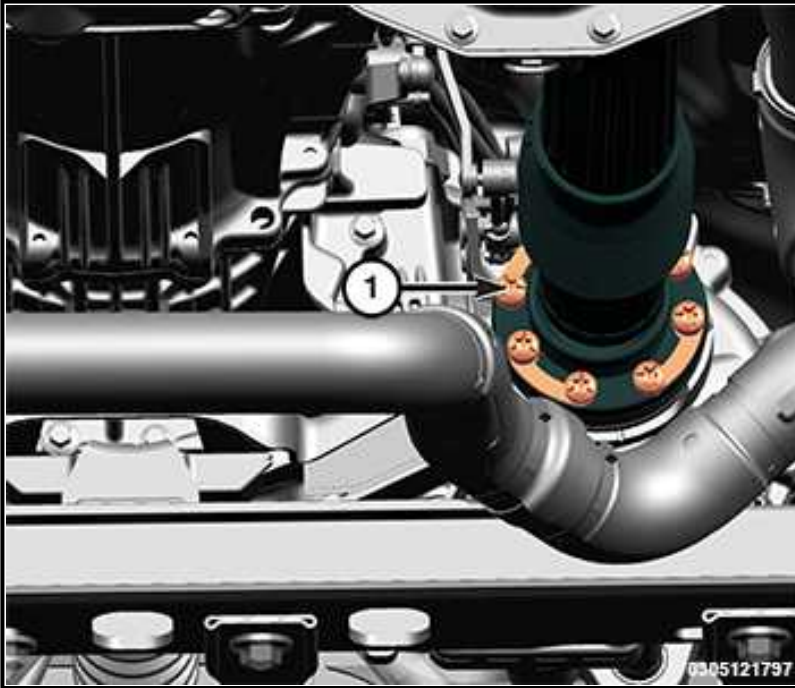
2. Remove and **DISCARD** the front driveshaft to transfer case bolts.



1 - Axle Pinion Flange

2 - Front Driveshaft Flange

3. Mark an installation reference line across the front driveshaft flange and the axle pinion flange. Mark an installation reference line at the front driveshaft flange and transfer case output flange also for re-assembly.



1 - Front Axle Flange to Front Driveshaft Flange
--

4. Remove and **DISCARD** the front axle flange to front driveshaft bolts and remove the driveshaft.

CAUTION: Driveshaft removal is a two-person operation. Never allow the driveshaft to hang from the center bearing, or while only connected to the transmission or rear axle flanges. An assistant is required. If a driveshaft section is hung unsupported, damage may occur to the shaft, joint and center bearing from over-angulation. This may result in driveline vibrations or component failure.

INSTALLATION

During installation, torque the fasteners to the specifications in the torque table(s) below.

Follow the removal procedure in reverse for general reassembly of the components on the vehicle. The steps listed below are calling out specific procedures that should be followed during installation.

- Position the front driveshaft in the vehicle and align the driveshaft alignment marks to the front axle pinion flange and transfer case output flange.
- Install **NEW** front driveshaft to bolts. If **NEW** bolts are not available clean the old bolts and apply MoparB® Lock and Seal Adhesive or equivalent.

TORQUE SPECIFICATIONS

DRIVESHAFTS

Identify the proper CV joint bolt configuration, four or eight bolts, and begin with the first bolt referred to as "1", follow the torque sequence as indicated. In the case where there are two numbers shown for a given bolt it indicates the bolt is to be torqued again within the sequence.

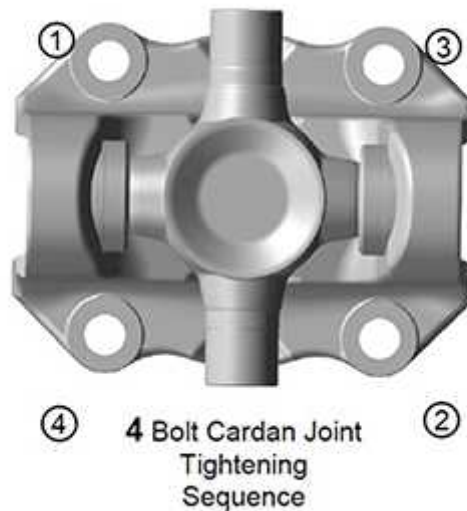
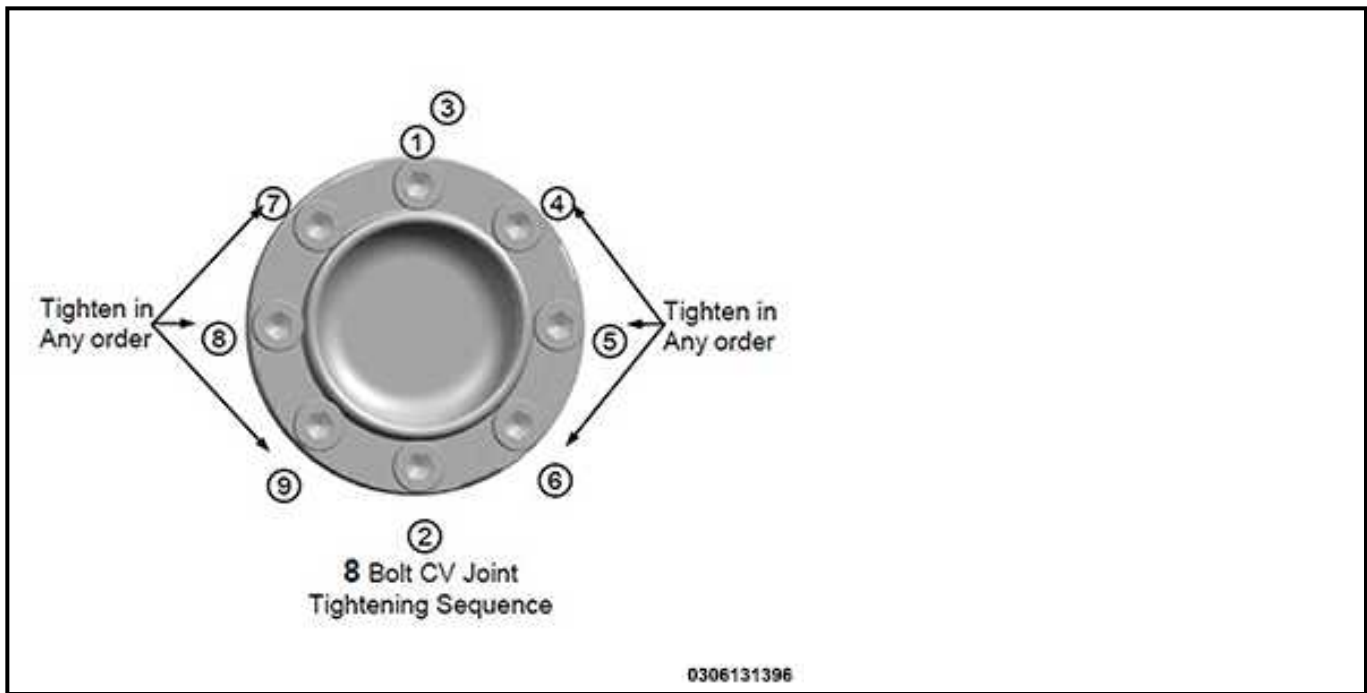


Fig. 1: Cardan Joint Tightening Sequence (4 Bolt)

Courtesy of CHRYSLER GROUP, LLC

DESCRIPTION	SPECIFICATION	COMMENT
Front Driveshaft to Front Axle Flange Bolts	121 N.m (89 Ft. Lbs.)	Do not reuse these fasteners. If removed, a NEW fastener must be installed and tightened to specifications. Torque and secure in a crisscross pattern.
Front Driveshaft to Transfer-Case Flange Bolts	39 N.m (29 Ft. Lbs.)	Do not reuse these fasteners. If removed, a NEW fastener must be installed and tightened to specifications. Torque and secure in a crisscross pattern.
Rear Driveshaft to Transfer-Case Flange Bolts	39 N.m (29 Ft. Lbs.)	Do not reuse these fasteners. If removed, a NEW fastener must be installed and tightened to specifications. Torque and secure in a crisscross pattern.
Rear Driveshaft to Rear Axle Flange Bolts	39 N.m (29 Ft. Lbs.)	Do not reuse these fasteners. If removed, a NEW fastener must be installed and

DESCRIPTION	SPECIFICATION	COMMENT
		tightened to specifications. Torque and secure in a crisscross pattern.
Rear Driveshaft Carrier Bearing to Frame	62 N.m (46 Ft. Lbs.)	-

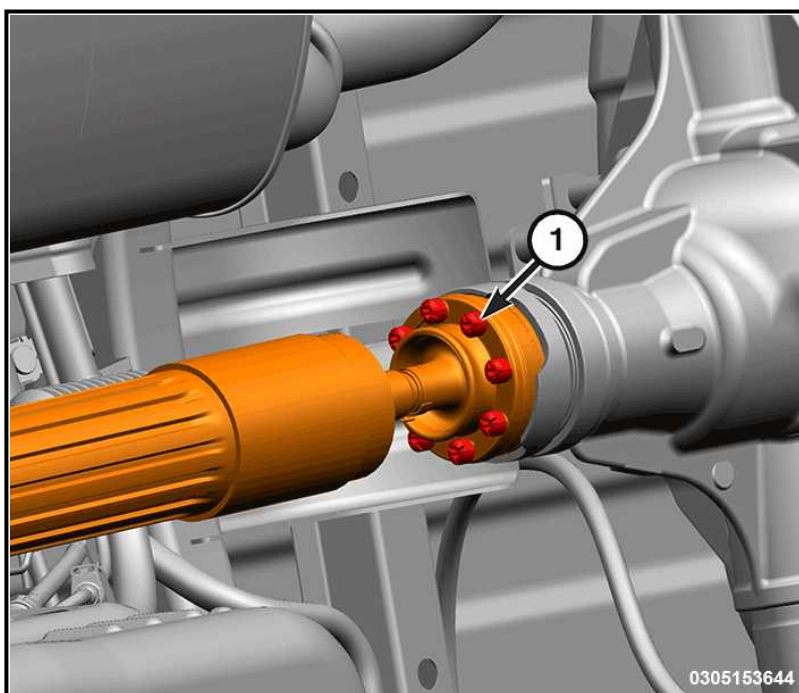
REAR DRIVESHAFT

REMOVAL

1. Raise and support the vehicle. Refer to [HOISTING, STANDARD PROCEDURE](#) .
2. Index mark the driveshaft to pinion flange union for installation purposes. Mark the driveshaft with an arrow for installation direction reference.

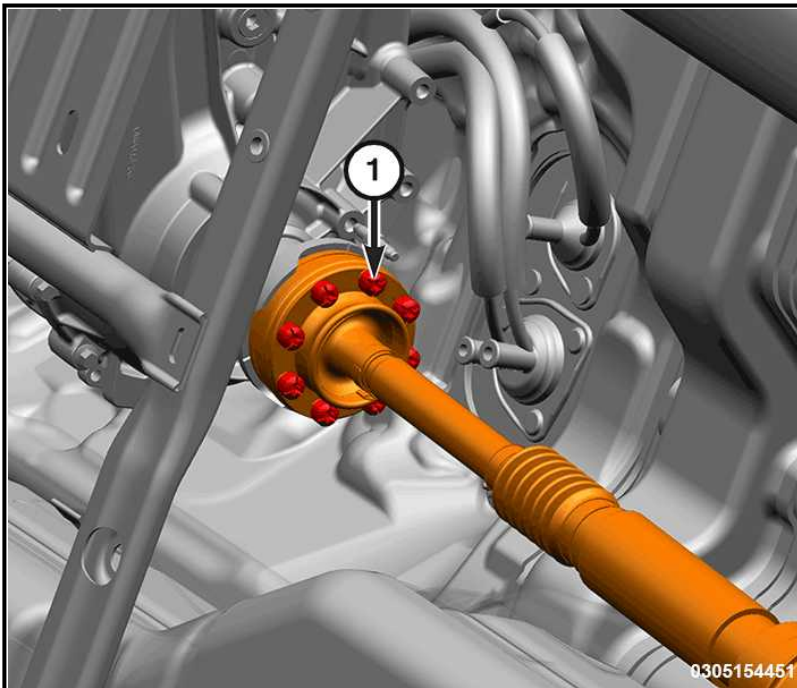


3. Using a long piece of wood or similar, fasten it to the driveshaft with several cable ties in order to keep the driveshaft from over-articulating during removal and installation.



1 - Driveshaft to Pinion Flange Bolts

4. Remove and **DISCARD** the rear driveshaft to pinion flange bolts and shims.
5. Index mark the driveshaft to transfer case flange for installation purposes.

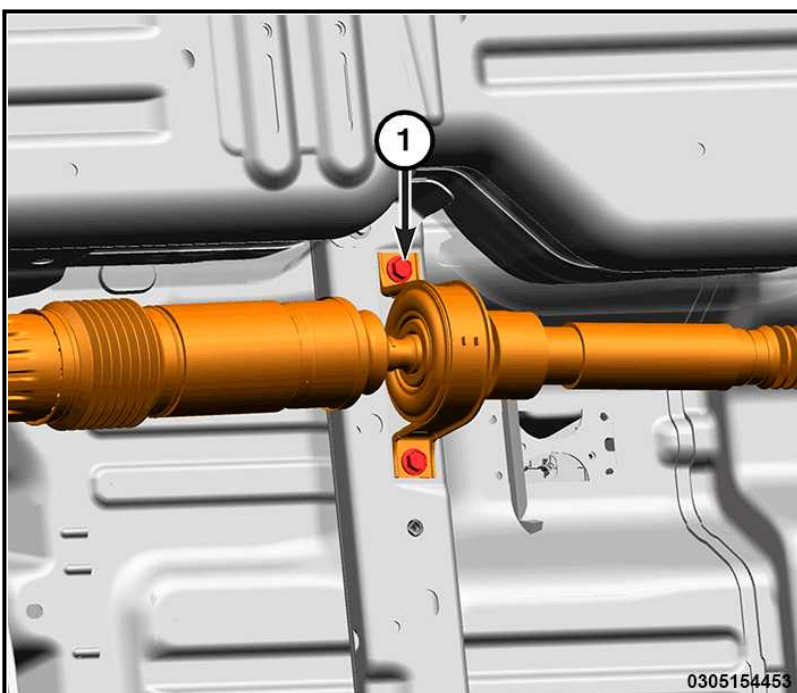


1 - Driveshaft to Transfer Case Flange Bolts

6. Remove and **DISCARD** the driveshaft to transfer case flange bolts.

CAUTION:

Driveshaft removal is a two-person operation. Never allow the driveshaft to hang from the center bearing, or while only connected to the transmission or rear axle flanges. An assistant is required. If a driveshaft section is hung unsupported, damage may occur to the shaft, joint and center bearing from over-angulation. This may result in driveline vibrations or component failure.



1 - Center Support Bearing Bolts

7. Remove the two center support bearing bolts and remove the driveshaft from the vehicle.
8. Inspect the driveshaft for damage, replace as necessary.
9. Inspect the transfer case flange and the rear axle flange for damage and replace as necessary.

INSTALLATION

During installation, torque the fasteners to the specifications in the torque table(s) below.

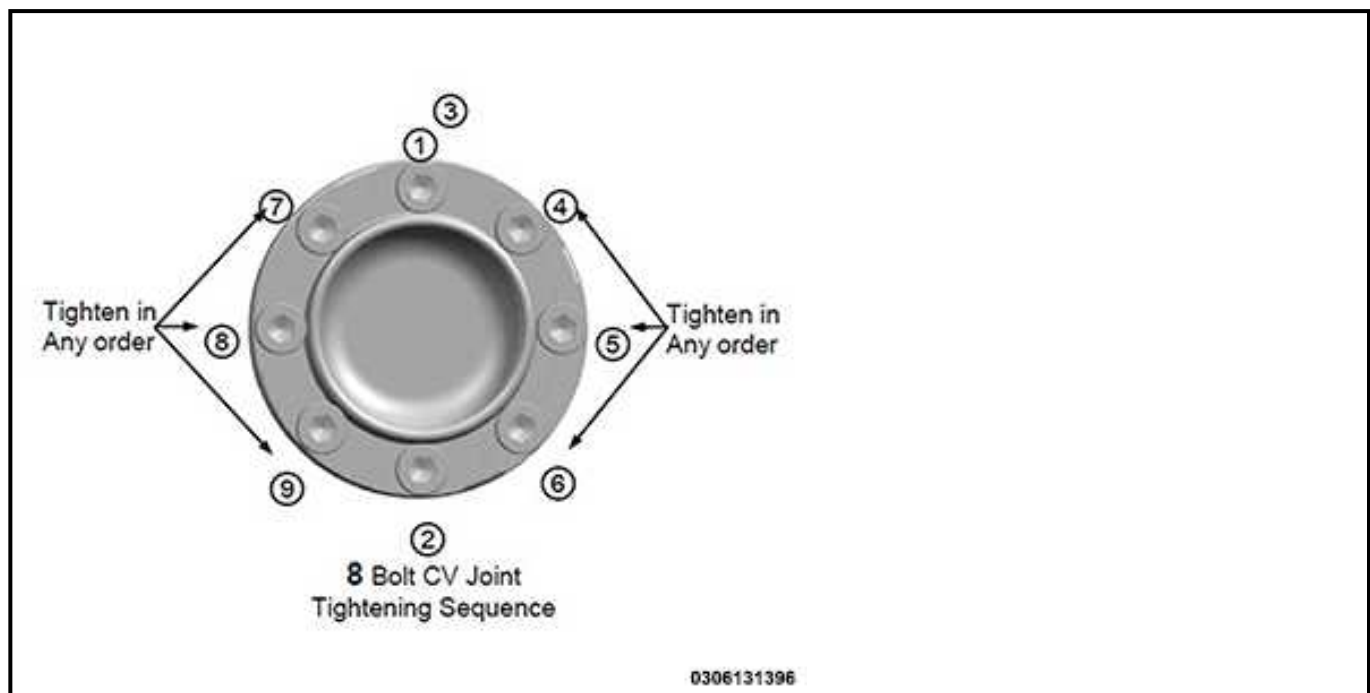
Follow the removal procedure in reverse for general reassembly of the components on the vehicle. The steps listed below are calling out specific procedures that should be followed during installation.

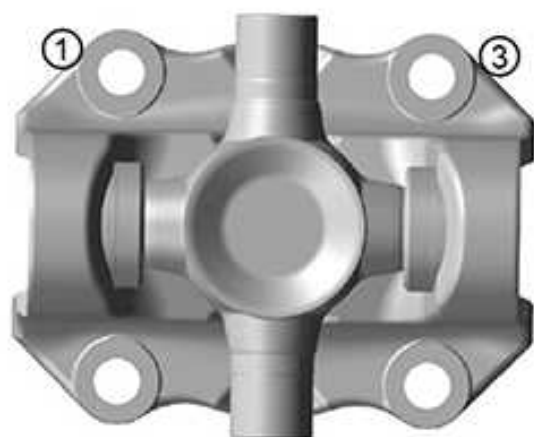
- Position the rear driveshaft in the vehicle and align the driveshaft alignment marks to the rear axle pinion flange and transfer case output flange.
- Install **NEW** rear driveshaft bolts. If **NEW** bolts are not available clean the old bolts and apply MoparB® Lock and Seal Adhesive or equivalent.

TORQUE SPECIFICATIONS

DRIVESHAFTS

Identify the proper CV joint bolt configuration, four or eight bolts, and begin with the first bolt referred to as "1", follow the torque sequence as indicated. In the case where there are two numbers shown for a given bolt it indicates the bolt is to be torqued again within the sequence.





④ 4 Bolt Cardan Joint Tightening Sequence ②

0306131397

DESCRIPTION	SPECIFICATION	COMMENT
Front Driveshaft to Front Axle Flange Bolts	121 N.m (89 Ft. Lbs.)	Do not reuse these fasteners. If removed, a NEW fastener must be installed and tightened to specifications. Torque and secure in a crisscross pattern.
Front Driveshaft to Transfer-Case Flange Bolts	39 N.m (29 Ft. Lbs.)	Do not reuse these fasteners. If removed, a NEW fastener must be installed and tightened to specifications. Torque and secure in a crisscross pattern.
Rear Driveshaft to Transfer-Case Flange Bolts	39 N.m (29 Ft. Lbs.)	Do not reuse these fasteners. If removed, a NEW fastener must be installed and tightened to specifications. Torque and secure in a crisscross pattern.
Rear Driveshaft to Rear Axle Flange Bolts	39 N.m (29 Ft. Lbs.)	Do not reuse these fasteners. If removed, a NEW fastener must be installed and tightened to specifications. Torque and secure in a crisscross pattern.
Rear Driveshaft Carrier Bearing to Frame	62 N.m (46 Ft. Lbs.)	-

FRONT HALFSHAFTS - M210

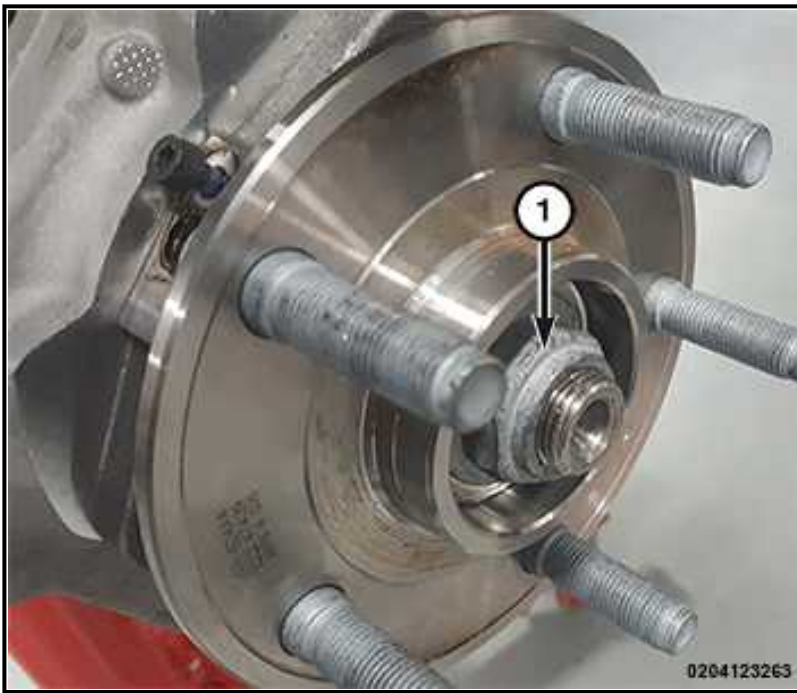
The following procedures will cover the removal and installation of the front axle shafts, and the related torque specifications.

REPAIR PROCEDURES

AXLE SHAFT

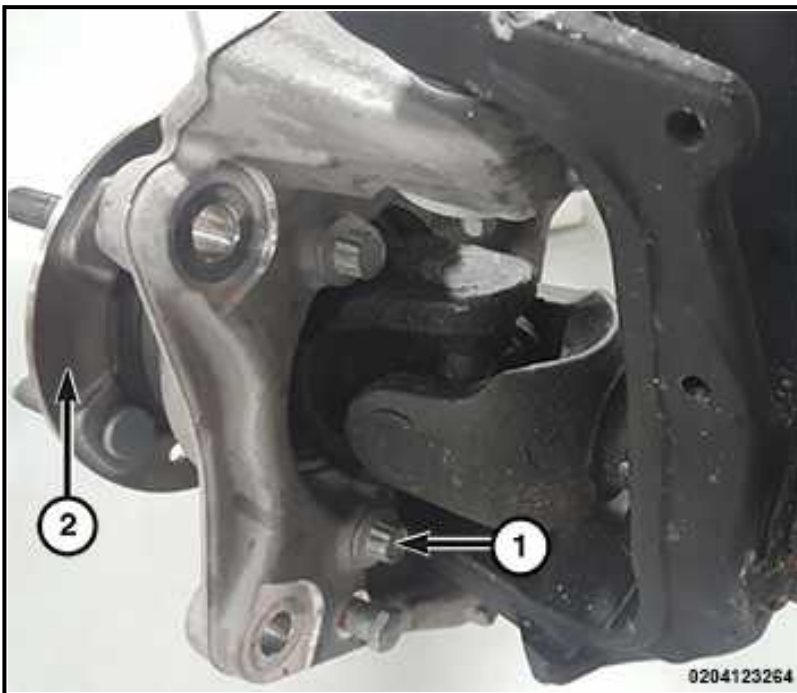
REMOVAL

1. Raise and support the vehicle. Refer to [HOISTING, STANDARD PROCEDURE](#) .
2. Remove the brake system components. Refer to [ADAPTER, DISC BRAKE CALIPER, REMOVAL AND INSTALLATION](#) .



1 - Hub Nut

3. Remove and **DISCARD** the hub nut.
4. Remove the wheel speed sensor. Refer to [SENSOR, WHEEL SPEED, FRONT, REMOVAL AND INSTALLATION](#) .



1 - Hub and Bearing Bolts

2 - Hub and Bearing

5. Remove the hub bearing bolts from the steering knuckle and remove the hub and bearing.
6. Remove the axle shaft through the steering knuckle.

INSTALLATION

During installation, torque the fasteners to the specifications in the torque table(s) below.

Follow the removal procedure in reverse for general reassembly of the components on the vehicle. The steps listed below are calling out specific procedures that should be followed during installation.

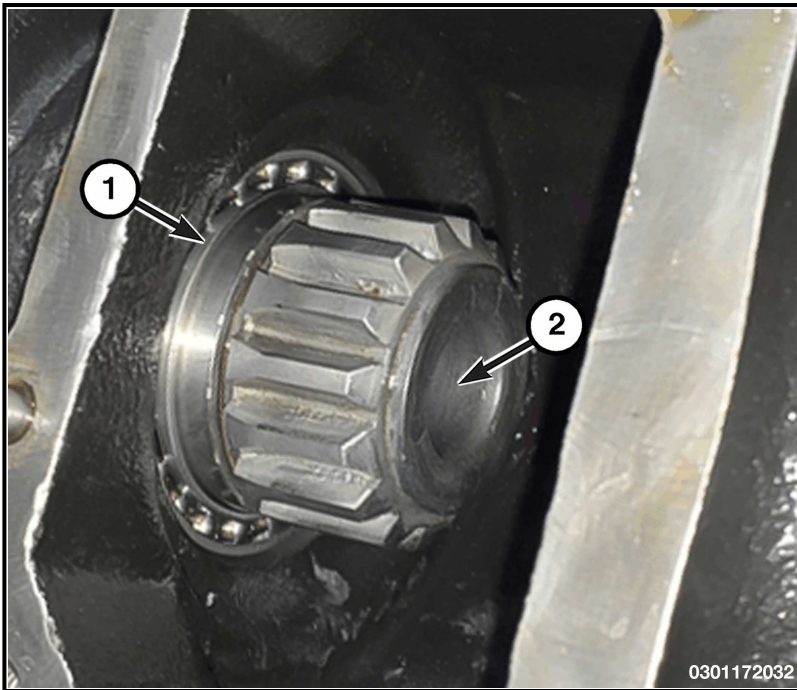
- Clean the axle shaft and apply a thin film of MoparB® Wheel Bearing Grease or equivalent to the shaft splines and seal contact surface.
- Install a **NEW** hub nut.

TORQUE SPECIFICATIONS

INTERMEDIATE STUB SHAFT

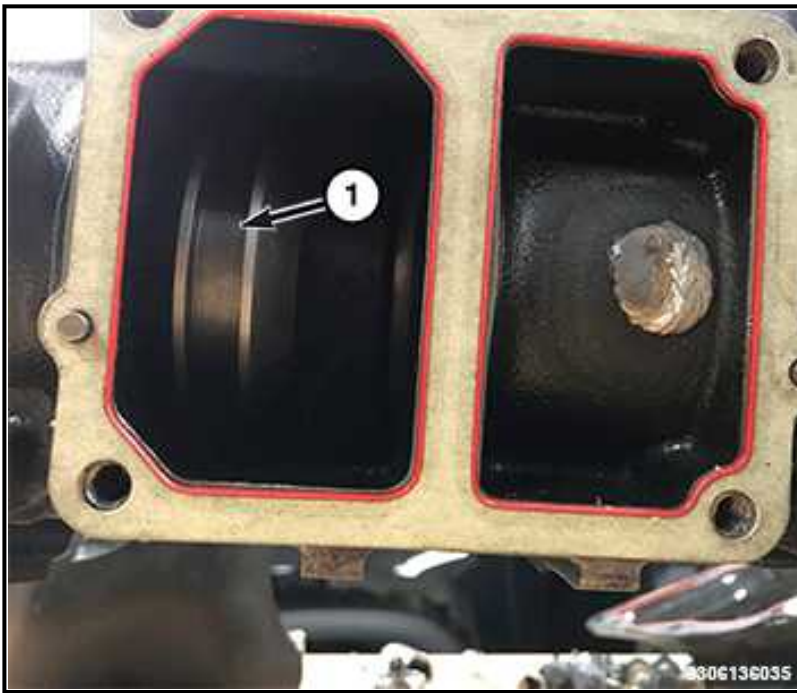
REMOVAL

1. Raise and support the vehicle. Refer to [HOISTING, STANDARD PROCEDURE](#) .
2. Remove the right front brake system components. Refer to [ADAPTER, DISC BRAKE CALIPER, REMOVAL AND INSTALLATION](#) .
3. Remove the right front wheel speed sensor. Refer to [SENSOR, WHEEL SPEED, FRONT, REMOVAL AND INSTALLATION](#) .
4. Remove the right front axle shaft
5. Remove the Front Axle Disconnect (FAD) skid plate and the FAD.



1 - Intermediate Shaft Ball Bearing
2 - Intermediate Shaft Bushing

6. Inspect for intermediate shaft ball bearing to be present and in good condition in housing bore.
7. Inspect for internal intermediate shaft bushing is present and in good condition in intermediate shaft bore.



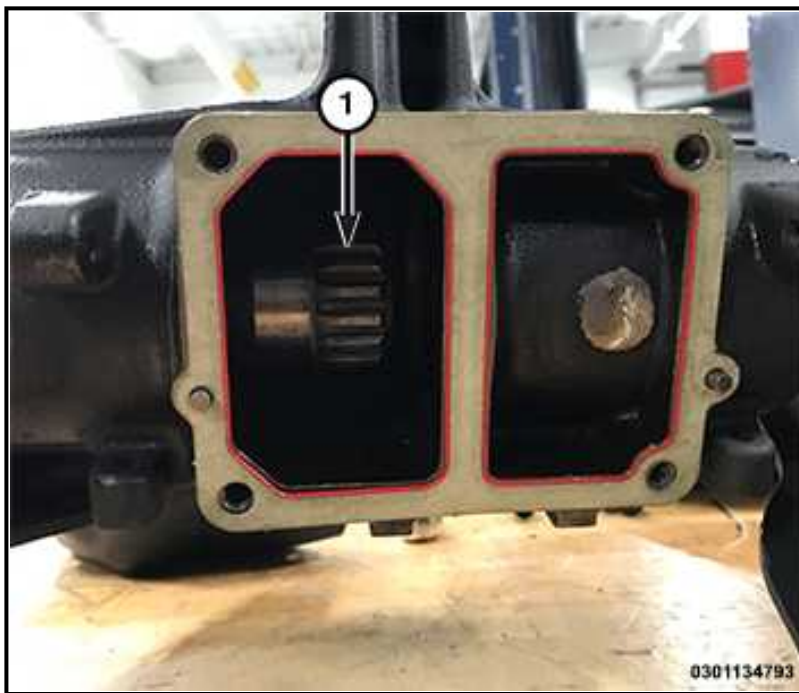
1 - Coupler

8. Remove the coupler.



1 - C-clip

9. Using a suitable tool remove the C-clip from the intermediate shaft.



1 - Intermediate Shaft

10. Remove the intermediate shaft through the steering knuckle.

11. If debris is present, there is axle damage or coupler damage. Refer to **REMOVAL AND INSTALLATION**.

INSTALLATION

During installation, torque the fasteners to the specifications in the torque table(s) below.

Follow the removal procedure in reverse for general reassembly of the components on the vehicle. The steps listed below are calling out specific procedures that should be followed during installation.

- Apply a film of MS-6560 grease to the intermediate shaft bushing.
- Clean the axle shaft and apply a thin film of MoparB® Wheel Bearing Grease or equivalent to the shaft splines and seal contact surface.
- Using a suitable tool, install a **NEW** C-clip to the intermediate shaft.

TORQUE SPECIFICATIONS

TORQUE SPECIFICATIONS

FRONT AXLE - M210

DESCRIPTION	SPECIFICATIONS	COMMENT
Bearing Cap Bolts	108 N.m (80 Ft. Lbs.)	-
Differential Cover Bolts	Torque Procedure: 1. Tighten to 20 N.m (15 Ft. Lbs.) 2. Rotate additional 20B°	Tightening Sequence
Differential Drain Plug	34 N.m (25 Ft. Lbs.)	-
Differential Fill Plug	34 N.m (25 Ft. Lbs.)	-
Front Axle Disconnect Skid Plate Bolts	42 N.m (31 Ft. Lbs.)	-

DESCRIPTION	SPECIFICATIONS	COMMENT
Front Axle Disconnect Bolts	18 N.m (13 Ft. Lbs.)	Do not reuse these fasteners. If removed, a NEW fastener must be installed and tightened to specifications.
Pinion Flange Nut	217 N.m (160 Ft. Lbs.)	Do not reuse these fasteners. If removed, a NEW fastener must be installed and tightened to specifications.
Ring Gear Bolts	136 N.m (100 Ft. Lbs.)	Do not reuse these fasteners. If removed, a NEW fastener must be installed and tightened to specifications.

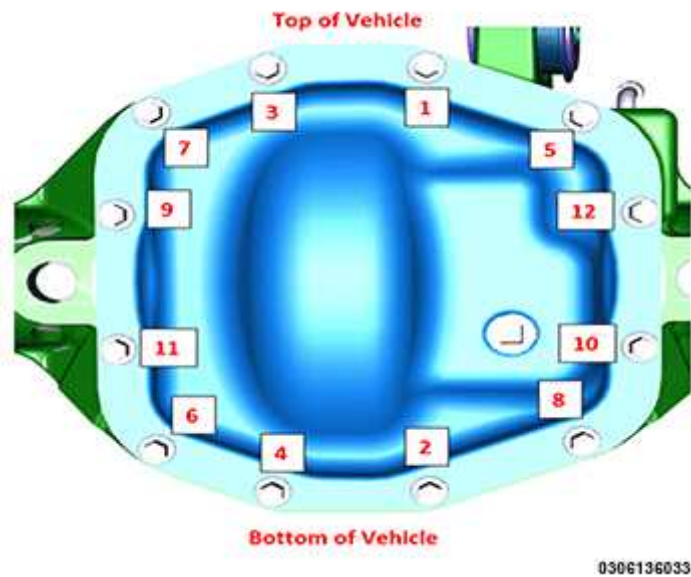
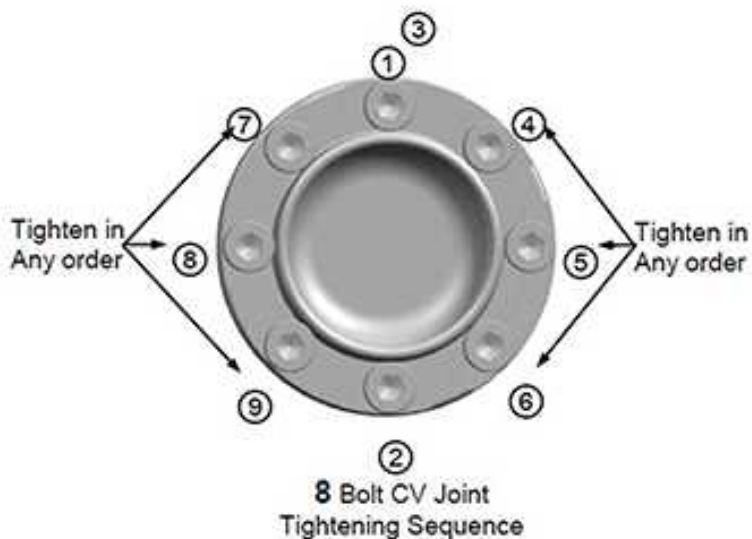


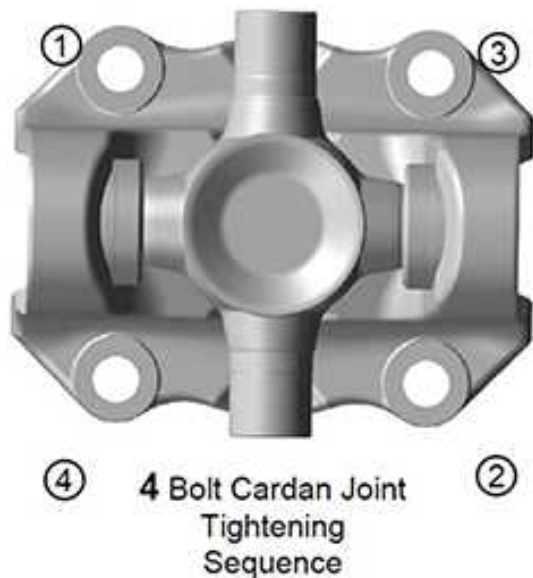
Fig. 2: Differential Cover Bolts Tightening Sequence
 Courtesy of CHRYSLER GROUP, LLC

DRIVESHAFTS

Identify the proper CV joint bolt configuration, four or eight bolts, and begin with the first bolt referred to as "1", follow the torque sequence as indicated. In the case where there are two numbers shown for a given bolt it indicates the bolt is to be torqued again within the sequence.



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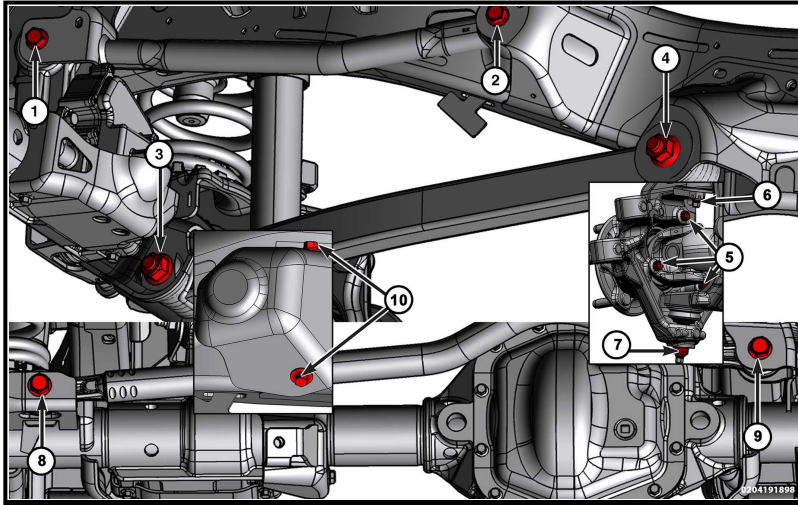


0306131397

DESCRIPTION	SPECIFICATION	COMMENT
Front Driveshaft to Front Axle Flange Bolts	121 N.m (89 Ft. Lbs.)	Do not reuse these fasteners. If removed, a NEW fastener must be installed and tightened to specifications. Torque and secure in a crisscross pattern.
Front Driveshaft to Transfer-Case Flange Bolts	39 N.m (29 Ft. Lbs.)	Do not reuse these fasteners. If removed, a NEW fastener must be installed and tightened to specifications. Torque and secure in a crisscross pattern.
Rear Driveshaft to Transfer-Case Flange Bolts	39 N.m (29 Ft. Lbs.)	Do not reuse these fasteners. If removed, a NEW fastener must be installed and tightened to specifications. Torque and secure in a crisscross pattern.
Rear Driveshaft to Rear Axle Flange Bolts	39 N.m (29 Ft. Lbs.)	Do not reuse these fasteners. If removed, a NEW fastener must be installed and tightened to specifications. Torque and secure in a crisscross pattern.

DESCRIPTION	SPECIFICATION	COMMENT
Rear Driveshaft Carrier Bearing to Frame	62 N.m (46 Ft. Lbs.)	-

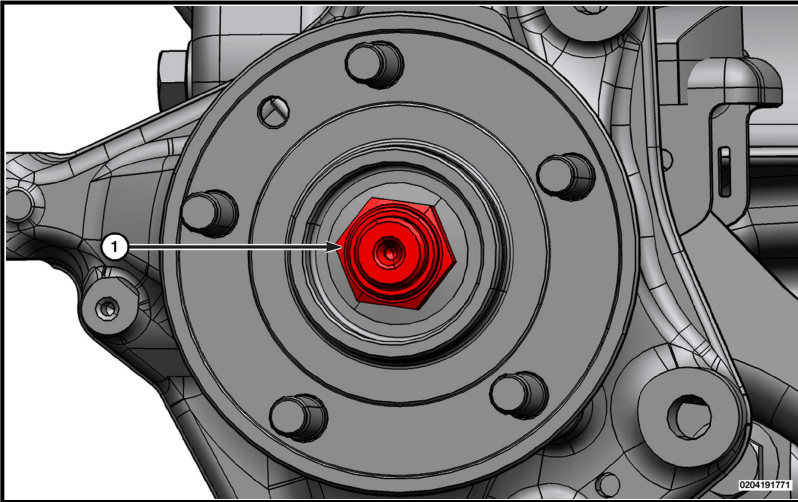
FRONT SUSPENSION



CALLOUT	DESCRIPTION	SPECIFICATION	COMMENT
1	Upper Control Arm Front Bolt	55 N. m Plus 185B° (41 Ft. Lbs. Plus 185B°)	Fastener must be torqued with the vehicle at normal ride height.
2	Upper Control Arm Rear Bolt	150 N. m Plus 95B° (111 Ft. Lbs. Plus 95B°)	Fastener must be torqued with the vehicle at normal ride height.
3	Lower Control Arm Front Nut	140 N. m Plus 145B° (103 Ft. Lbs. Plus 145B°)	Fastener must be torqued with the vehicle at normal ride height.
4	Lower Control Arm Rear Nut	140 N. m Plus 145B° (103 Ft. Lbs. Plus 145B°)	Fastener must be torqued with the vehicle at normal ride height.
5	Hub And Bearing Bolts	102 N. m (75 Ft. Lbs.)	-
6	Upper Ball Joint Nut	75 N. m (55 Ft. Lbs.)	Once final torque is reached, manually advance the castle nut to the next castle opening for the cotter pin to be inserted, even if the hole is aligned when final torque is reached. Do not reuse the cotter pin. If removed, a new cotter pin must be installed.
7	Lower Ball Joint Nut (aluminum knuckle) (initial torque) "Early" NON induction hardened ball joint W/O "IH" marking on the ball joint.	20 N. m (15 Ft. Lbs.)	-
7	Lower Ball Joint Nut (aluminum knuckle) (final torque) "Early" NON induction	80 N. m (59 Ft. Lbs.)	Once final torque is reached, manually advance the castle nut to the next castle opening for the cotter pin to be

CALLOUT	DESCRIPTION	SPECIFICATION	COMMENT
	hardened ball joint W/O "IH" marking on the ball joint.		inserted, even if the hole is aligned when final torque is reached. Do not reuse the cotter pin. If removed, a new cotter pin must be installed.
7	Lower Ball Joint Nut (aluminum knuckle) (initial torque) Induction hardened ball joint with "IH" marking on the ball joint.	20 N. m (15 Ft. Lbs.)	-
7	Lower Ball Joint Nut (aluminum knuckle) (final torque) Induction hardened ball joint with "IH" marking on the ball joint.	80 N. m (59 Ft. Lbs.)	Once final torque is reached, manually advance the castle nut to the next castle opening for the cotter pin to be inserted, even if the hole is aligned when final torque is reached. Do not reuse the cotter pin. If removed, a new cotter pin must be installed.
7	Lower Ball Joint Nut (cast iron knuckle) (initial torque) "Early" NON induction hardened ball joint W/O "IH" marking on the ball joint.	30 N. m (22 Ft. Lbs.)	-
7	Lower Ball Joint Nut (cast iron knuckle) (final torque) "Early" NON induction hardened ball joint W/O "IH" marking on the ball joint.	65 N. m (48 Ft. Lbs.)	Once final torque is reached, manually advance the castle nut to the next castle opening for the cotter pin to be inserted, even if the hole is aligned when final torque is reached. Do not reuse the cotter pin. If removed, a new cotter pin must be installed.
7	Lower Ball Joint Nut (cast iron knuckle) (initial torque) Induction hardened ball joint with "IH" marking on the ball joint.	30 N. m (22 Ft. Lbs.)	-
7	Lower Ball Joint Nut (cast iron knuckle) (final torque) Induction hardened ball joint with "IH" marking on the ball joint.	65 N. m (48 Ft. Lbs.)	Once final torque is reached, manually advance the castle nut to the next castle opening for the cotter pin to be inserted, even if the hole is aligned when final torque is reached. Do not reuse the cotter pin. If removed, a new cotter pin must be installed.
8	Track Bar Axle Bolt	70 N. m Plus 155B° (52 Ft. Lbs. Plus 155)	-

CALLOUT	DESCRIPTION	SPECIFICATION	COMMENT
9	Track Bar Frame Bolt	70 N. m Plus 115B° (52 Ft. Lbs. Plus 115)	-
10	Heat Shield Bolt	70 N. m Plus 115B° (52 Ft. Lbs. Plus 115)	-

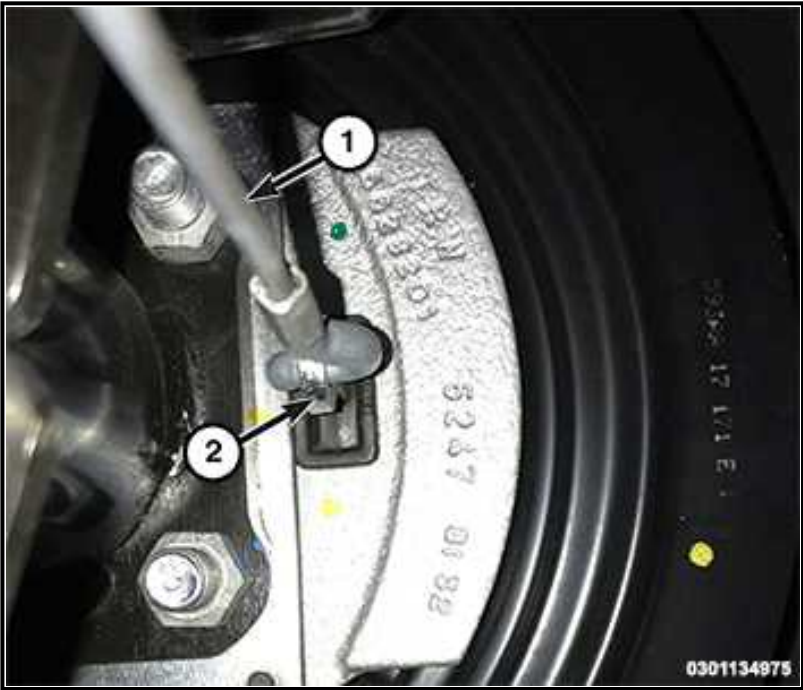


CALLOUT	DESCRIPTION	SPECIFICATION	COMMENT
1	Hub And Bearing Nut	136 N. m (100 Ft. Lbs.)	-

REAR AXLE SHAFT - M220

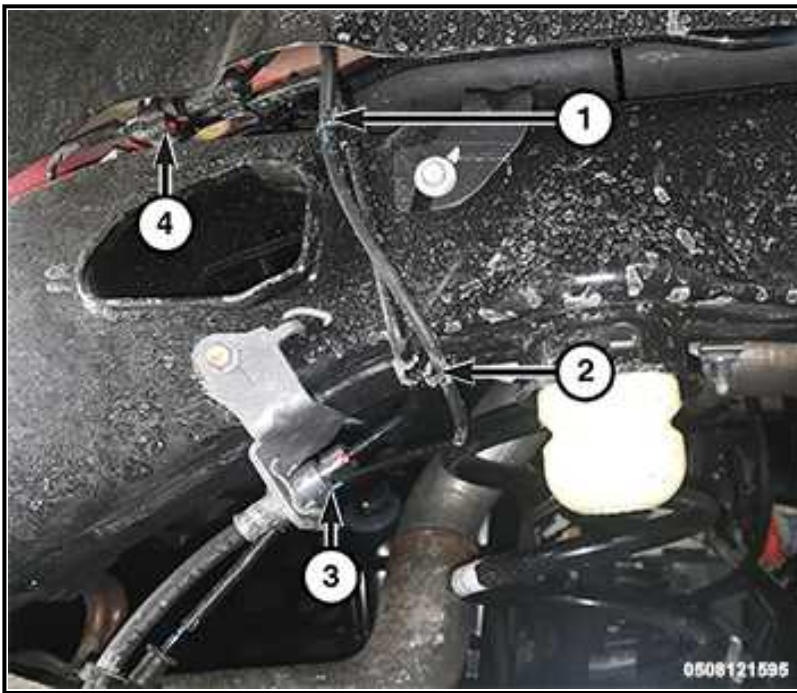
REMOVAL

1. Raise and support the vehicle. Refer to [HOISTING, STANDARD PROCEDURE](#) .
2. Remove the brake caliper with the adapter and the brake rotor.



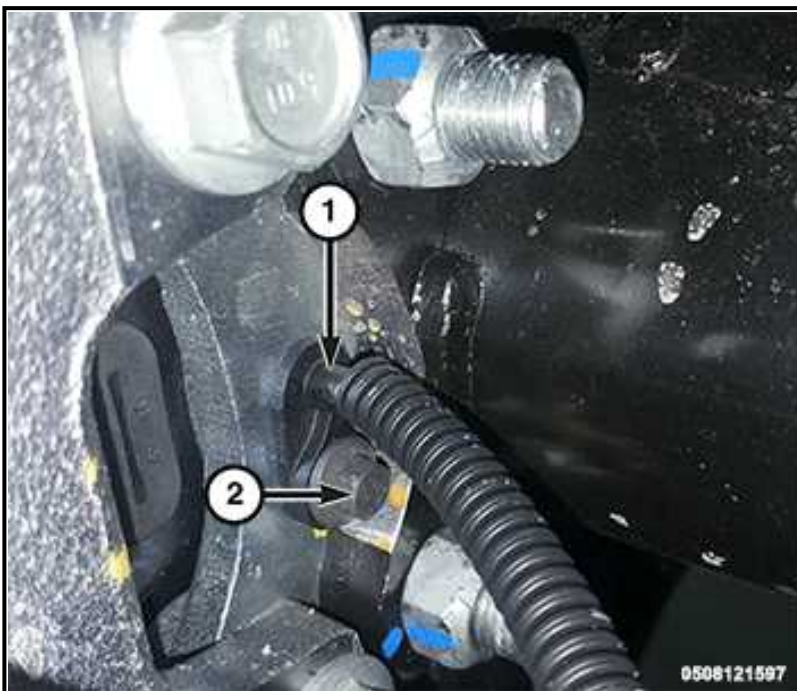
1 - Park Brake Cable
2 - Support Plate

3. Remove the park brake cable from the support plate.



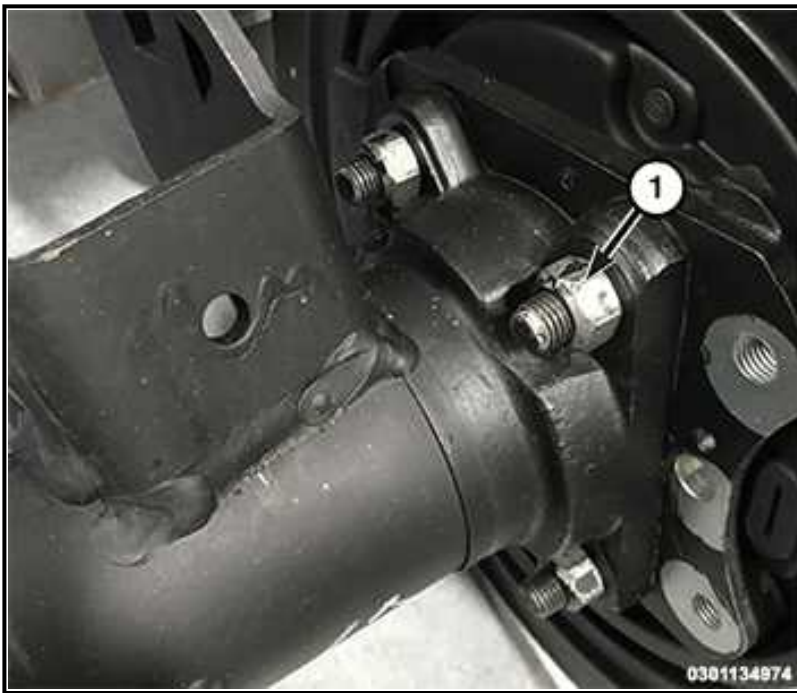
1 - Wire Harness	3 - Park Brake Cable
2 - Wire Harness Retainer	4 - Wheel Speed Sensor Harness Connector

4. Disconnect the wheel speed sensor wire harness connector.



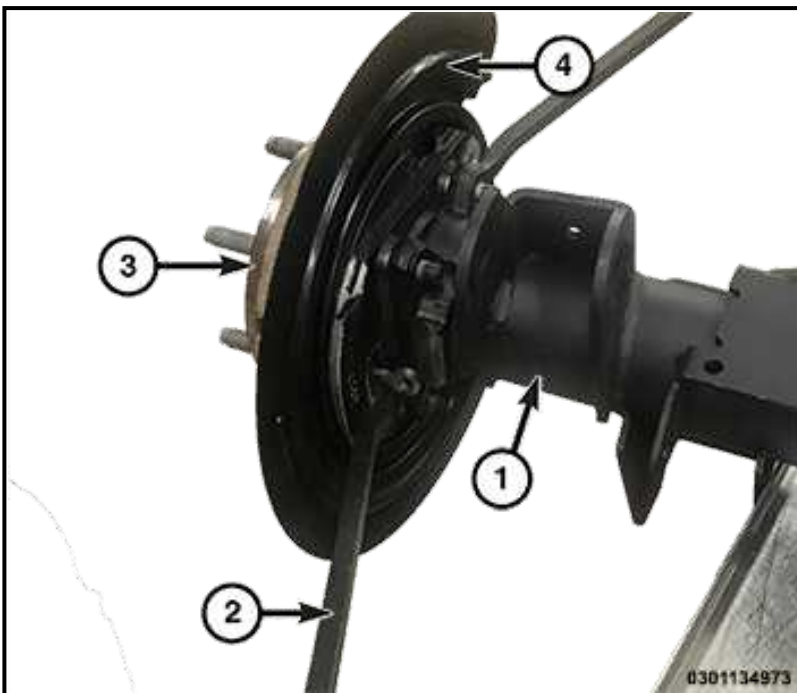
1 - Wheel Speed Sensor
2 - Wheel Speed Sensor Bolt

5. Remove the wheel speed sensor bolt and remove the wheel speed sensor.



1 - Axle Shaft Retainer Nuts

6. Remove the axle shaft retainer nuts.



1 -Axle Tube	3 - Axle Shaft
2 - Pry Bar	4 - Support Plate

7. Remove the axle shaft with the support plate, bearing and seal from axle tube using a pry bar or suitable tool.

INSTALLATION

During installation, torque the fasteners to the specifications in the torque table(s) below.

Follow the removal procedure in reverse for general reassembly of the components on the vehicle. The steps listed below are calling out specific procedures that should be followed during installation.

WARNING:

Never reuse axle retainer nuts. Used torque nuts can loosen up. Failure to follow these instruction may result in personal injury.

- Verify that the wheel speed sensor wiring harness is secured in the retainers.

TORQUE SPECIFICATIONS**REAR AXLE - M220**

DESCRIPTION	SPECIFICATIONS	COMMENT
Axle Retainer Nuts	80 N.m (59 Ft. Lbs.)	-
Bearing Cap Bolts	95 N.m (70 Ft. Lbs.)	-
Differential Cover Bolts	41 N.m (30 Ft. Lbs.)	Do not reuse these fasteners. If removed, a NEW fastener must be installed and tightened to specifications.
Drain Plug	34 N.m (25 Ft. Lbs.)	-
Fill Plug	34 N.m (25 Ft. Lbs.)	-
Pinion Nut	488 N.m (360 Ft. Lbs.)	Do not reuse these fasteners. If removed, a NEW fastener must be installed and tightened to specifications.
Ring Gear Bolts	Torque Procedure: 1. Tighten to 100 N.m (74 Ft. Lbs.) 2. Rotate additional 57.5B°	Do not reuse these fasteners. If removed, a NEW fastener must be installed and tightened to specifications.
Rear Axle Vent Fitting	22 N.m (17 Ft. Lbs.)	-

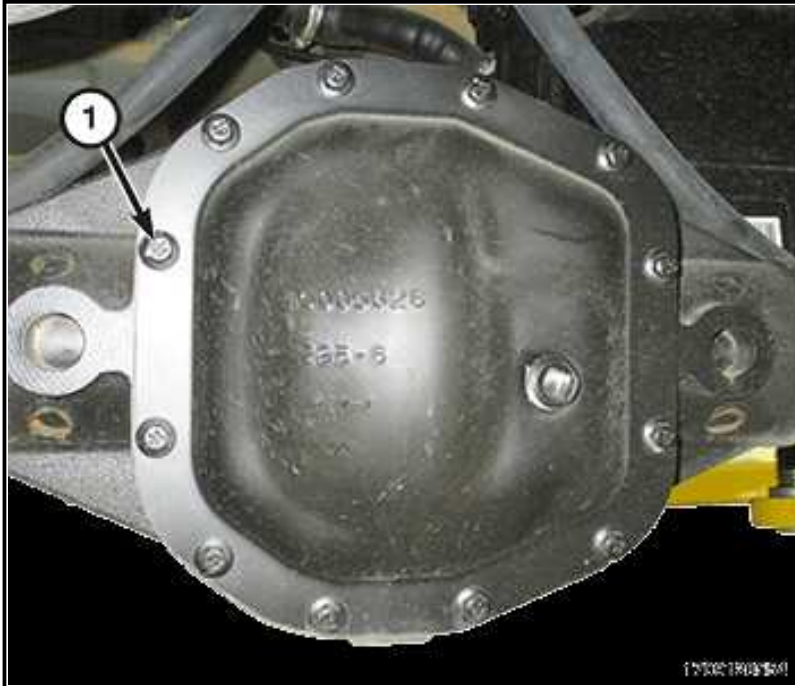
2021 GENERAL INFORMATION

Differential Assembly - Gladiator

REMOVAL AND INSTALLATION

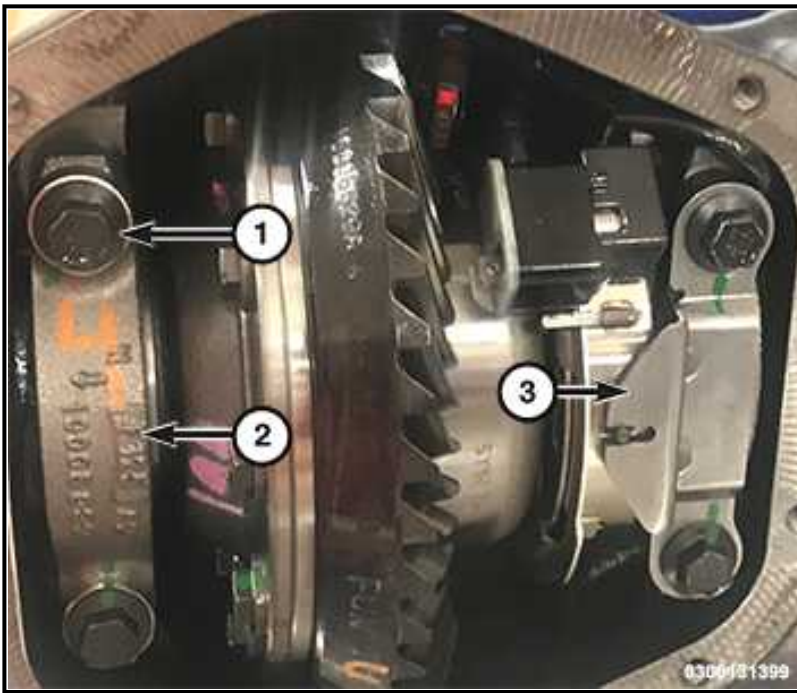
DIFFERENTIAL CASE ASSEMBLY - M210 FRONT AXLE

REMOVAL



1 - Differential Cover Bolts

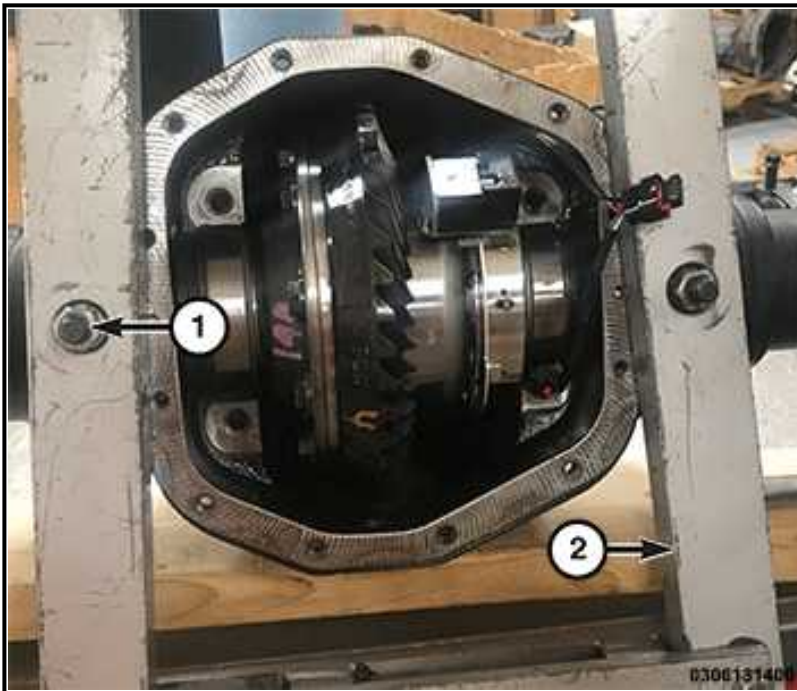
1. Remove the differential cover.
2. Remove the left tie rod end from the knuckle and secure out of the way. Refer to [END, TIE ROD, REMOVAL AND INSTALLATION](#) .
3. Remove the track bar. Refer to [TRACK BAR, FRONT, REMOVAL AND INSTALLATION](#) .
4. Remove the axle shafts. Refer to [REMOVAL AND INSTALLATION](#) .



1 - Differential Cap Bolts
2 - Reference Letters
3 - Axle Locker Coil Anti-rotation Bracket

NOTE: Note the reference letters stamped on the bearing caps and differential housing machined sealing surface.

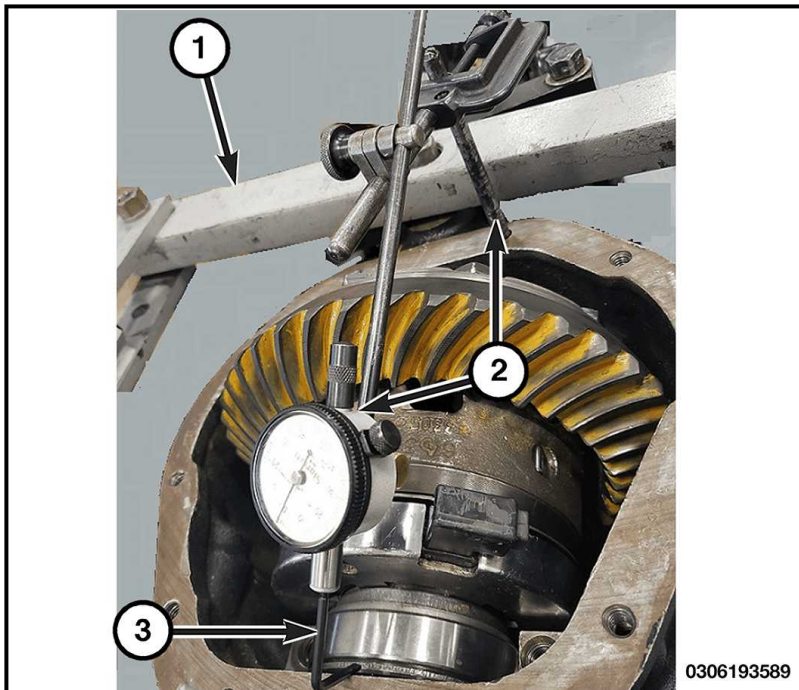
5. If reference letters are not clearly visible, mark the bearing caps and differential housing so the caps can be reinstalled in their original positions.
6. Loosen the differential bearing cap bolts. Notice the orientation of the axle locker actuator bracket when removing the bearing caps.



1 - Hold Down Clamps
2 - Spreader

7. Position the spreader (special tool #W-129-B, Spreader, Differential) with the adapter kit (special tool #6987B, Adapter Kit, Axle Spreader) on the differential locating holes. Install the hold-down clamps and

tighten the turnbuckle finger-tight.



1 - Spreader

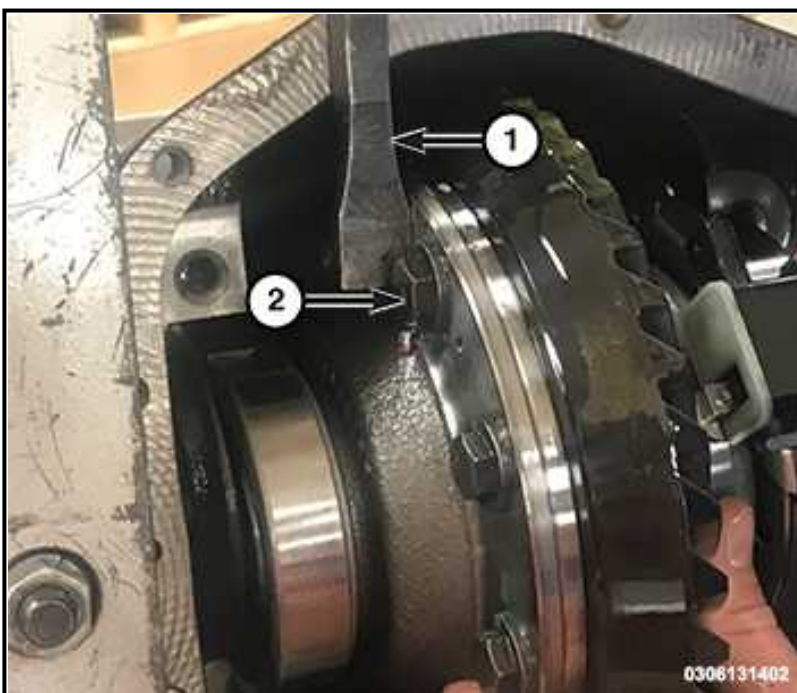
2 - Dial Indicator And Mounting

3 - 90B° Dial Indicator Tip

8. Install a pin (special tool #C-3288-B, Set, Alignment Pins) at the left side of the differential housing. Attach the dial indicator with the SP-1917 or equivalent 90B° dial indicator tip (special tool #C-3339A, Set, Dial Indicator) to the pin. Load the SP-1917 or equivalent 90B° dial indicator tip against the opposite side of the housing and zero the dial indicator.
9. Spread the differential housing while measuring the distance with the dial indicator.

CAUTION: Never spread housing over 0.50 mm (0.020 in). Failure to follow these instructions will damage the housing.

10. Remove the dial indicator.
11. Holding the differential case in position, remove the differential bearing caps.



1 - Pry Bar
2 - Differential Case

12. Remove the differential case from the differential housing using a small pry bar or similar. Tag the differential bearing cups and shim locations.

CLEANING:

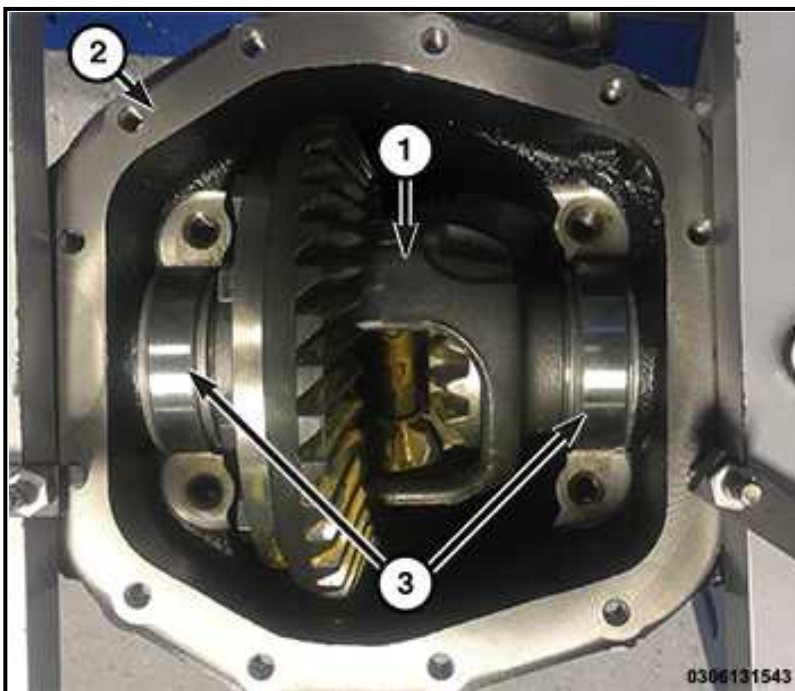
- Clean the housing cavity with flushing oil, light engine oil or lint free cloth. Do not use water, steam, kerosene or gasoline for cleaning.

INSTALLATION

During installation, torque the fasteners to the specifications in the torque table(s) below.

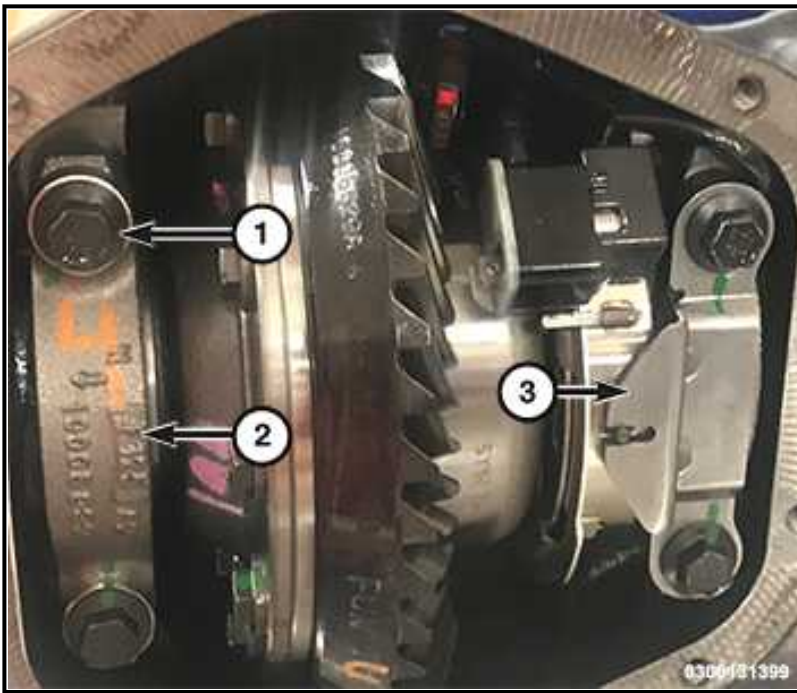
NOTE:

If new differential bearings or differential case are being installed, the differential side bearing washer requirements may change. to determine the proper shims selection. Refer to [ADJUSTMENTS](#) .



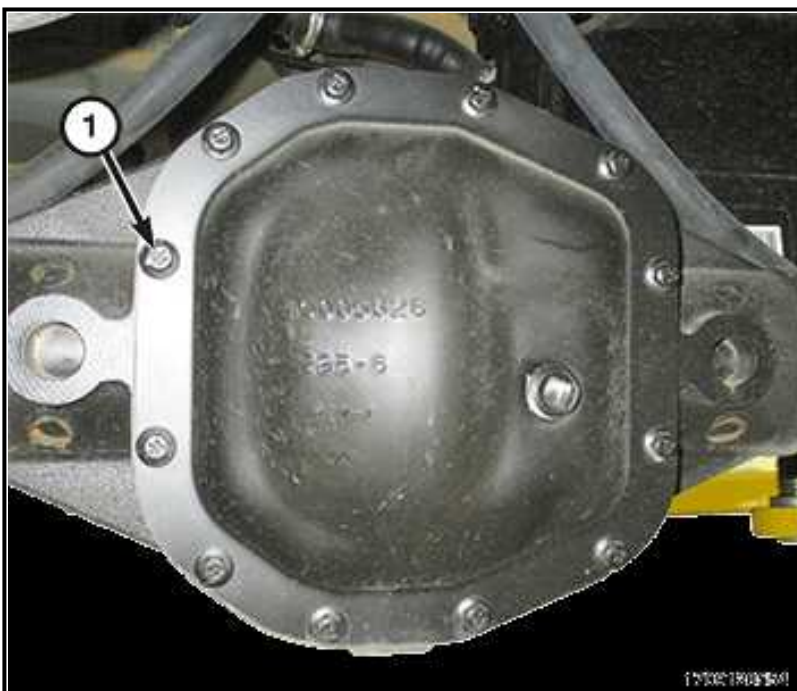
1 - Differential Case
2 - Differential Housing
3 - Bearing Cups

1. Install the differential case into the differential housing with bearing cups and preload shims. Tap the differential case to ensure the bearings cups are fully seated in the differential housing.



1 - Differential Cap Bolts
2 - Reference Letters
3 - Axle Locker Coil Anti-rotation Bracket

2. Install the bearing caps with reference marks in their original locations. Install the axle locker actuator bracket on the locker side of the differential. Center the pin from the axle locker actuator in the slot in the axle locker actuator bracket.
3. Loosely install the differential bearing cap bolts.
4. Remove the differential housing spreader.
5. Tighten the bearing cap bolts to the proper torque specification.
6. Install the axle shafts. Refer to [REMOVAL AND INSTALLATION](#) .
7. Install the track bar. Refer to [TRACK BAR, FRONT, REMOVAL AND INSTALLATION](#) .
8. Install the left tie rod end. Refer to [END, TIE ROD, REMOVAL AND INSTALLATION](#) .



1 - Differential Cover

9. Install the differential cover.
10. Remove the fill plug and fill the differential with the proper fluid. Refer to **CAPACITIES AND RECOMMENDED FLUIDS, SPECIFICATIONS**.

TORQUE SPECIFICATIONS

FRONT AXLE - M210

DESCRIPTION	SPECIFICATIONS	COMMENT
Bearing Cap Bolts	108 N.m (80 Ft. Lbs.)	-
Differential Cover Bolts	Torque Procedure: 1. Tighten to 20 N.m (15 Ft. Lbs.) 2. Rotate additional 20B°	Tightening Sequence
Differential Drain Plug	34 N.m (25 Ft. Lbs.)	-
Differential Fill Plug	34 N.m (25 Ft. Lbs.)	-
Front Axle Disconnect Skid Plate Bolts	42 N.m (31 Ft. Lbs.)	-
Front Axle Disconnect Bolts	18 N.m (13 Ft. Lbs.)	Do not reuse these fasteners. If removed, a NEW fastener must be installed and tightened to specifications.
Pinion Flange Nut	217 N.m (160 Ft. Lbs.)	Do not reuse these fasteners. If removed, a NEW fastener must be installed and tightened to specifications.
Ring Gear Bolts	136 N.m (100 Ft. Lbs.)	Do not reuse these fasteners. If removed, a NEW fastener must be installed and tightened to specifications.

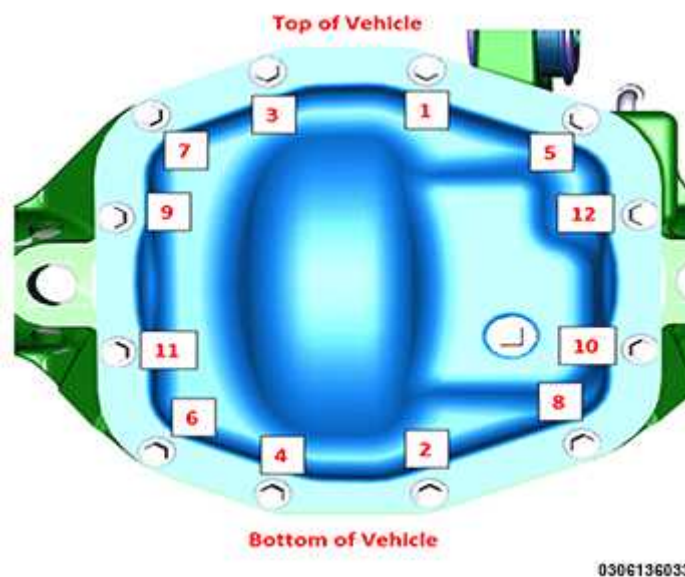


Fig. 1: Differential Cover Bolts Tightening Sequence

Courtesy of CHRYSLER GROUP, LLC

DIFFERENTIAL CASE ASSEMBLY - M220 REAR AXLE

REMOVAL

1. Raise and support the vehicle

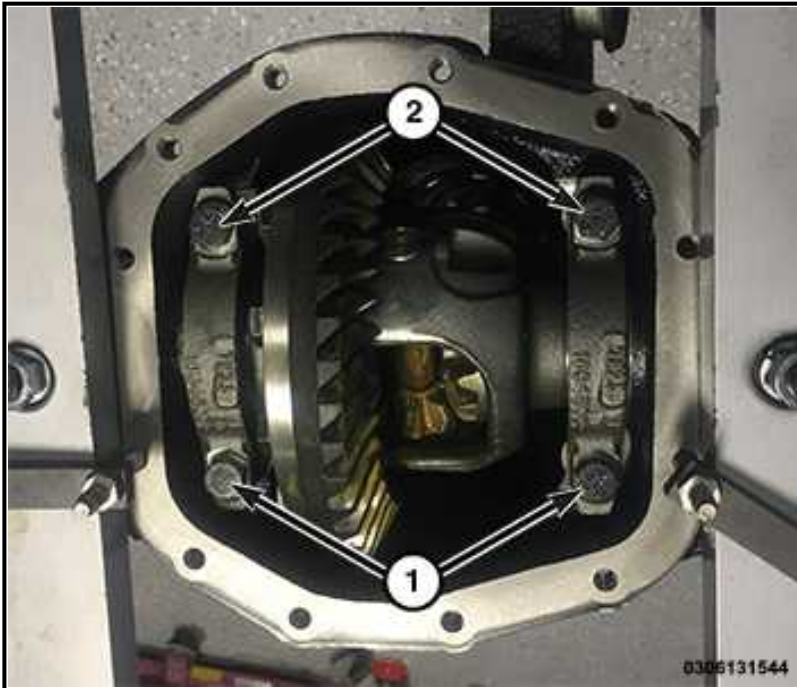
Refer to [HOISTING, STANDARD PROCEDURE](#) .

2. Remove the differential drain plug and drain the fluid.

3. Remove the differential cover. Refer to [REMOVAL AND INSTALLATION](#) .

4. Remove the axle shafts. Refer to [REMOVAL AND INSTALLATION](#) .

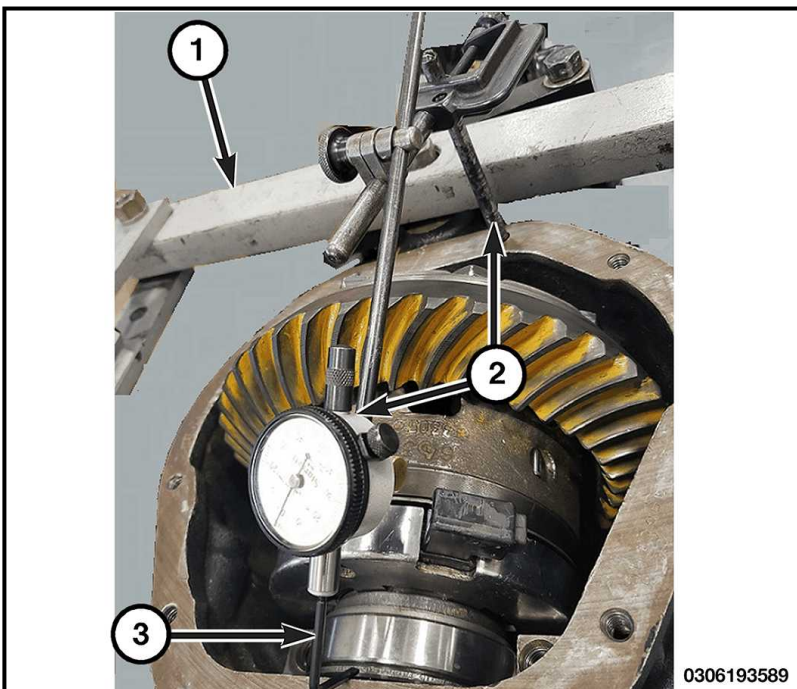
5. Remove the axle locker switch. Refer to [REMOVAL AND INSTALLATION](#) .



1 - Differential Bearing Cap Bolts
2 - Differential Bearing Cap Bolts

6. Mark the bearing caps and the differential housing so the caps can be reinstalled in their original positions.

7. Loosen the differential bearing cap bolts.

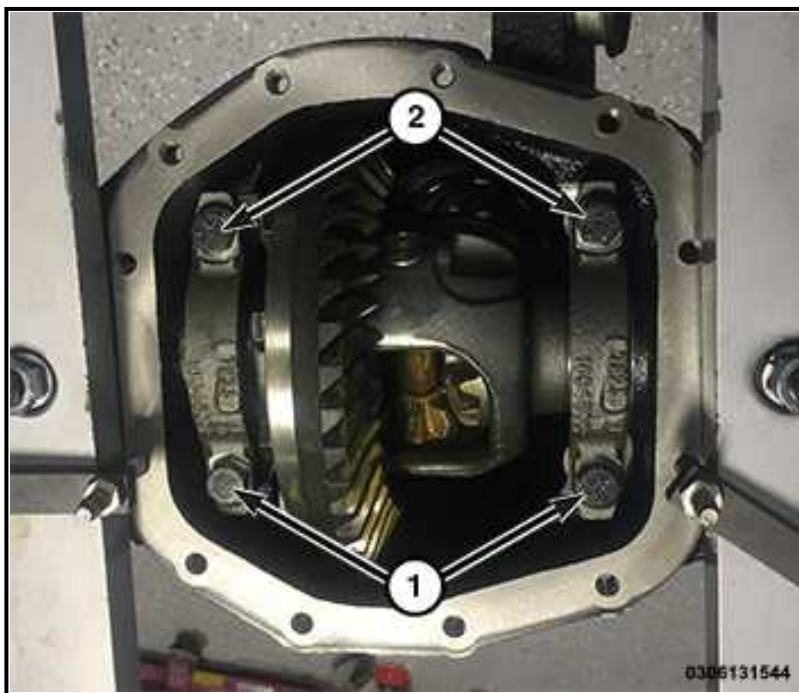


1 - Spreader
2 - Dial Indicator And Mounting
3 - 90B° Dial Indicator Tip

8. Position the (special tool #W-129-B, Spreader, Differential) with (special tool #6987B, Adapter Kit, Axle Spreader) on the differential housing locating holes. Install the hold-down clamps and tighten the turnbuckle finger-tight.
9. Install the (special tool #C-3288-B, Set, Alignment Pins) on the left side of the differential housing. Attach the (special tool #C-3339A, Set, Dial Indicator) with the SP-1917 equivalent 90B° dial indicator tip to the pin. Load the SP-1917 or equivalent 90B° dial indicator tip against the opposite side of the differential housing and zero the dial indicator.
10. Spread differential housing while measuring the distance with the dial indicator.

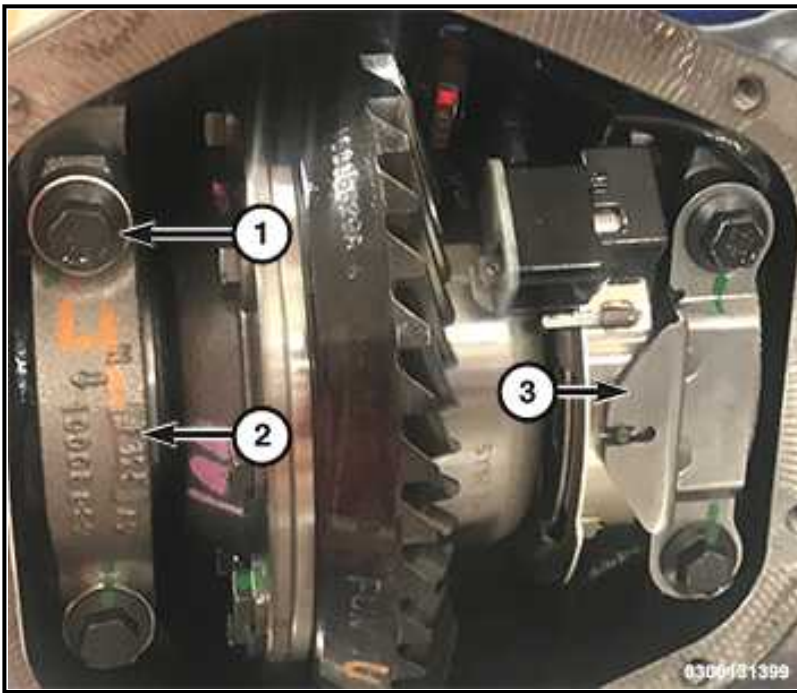
NOTE: Never spread the differential housing over 0.50 mm (0.020 in.). Failure to follow these instructions will damage the housing.

11. Remove the dial indicator.



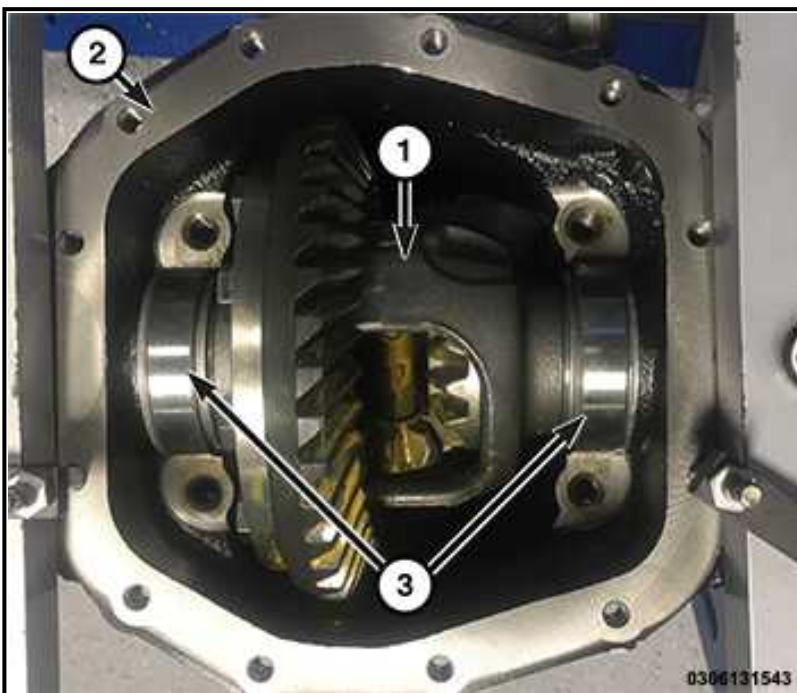
1 - Differential Bearing Cap Bolts
2 - Differential Bearing Cap Bolts

12. Holding the differential case in position, remove the differential bearing cap bolts.



1 - Differential Bearing Cap Bolts
2 - Differential Bearing Cap
3 - Axle Locker Coil Anti-rotation Bracket

13. Remove the axle locker coil anti-rotation bracket from the bearing cap, remove both bearing caps.



1 - Differential Case
2 - Differential Housing
3 - Differential Bearing Cup and Spacer

14. Remove the differential case from the differential housing and tag the differential bearing cup and shim locations.

NOTE: Non-locker rear differential case assembly shown for bearing clarity.

CLEANING:

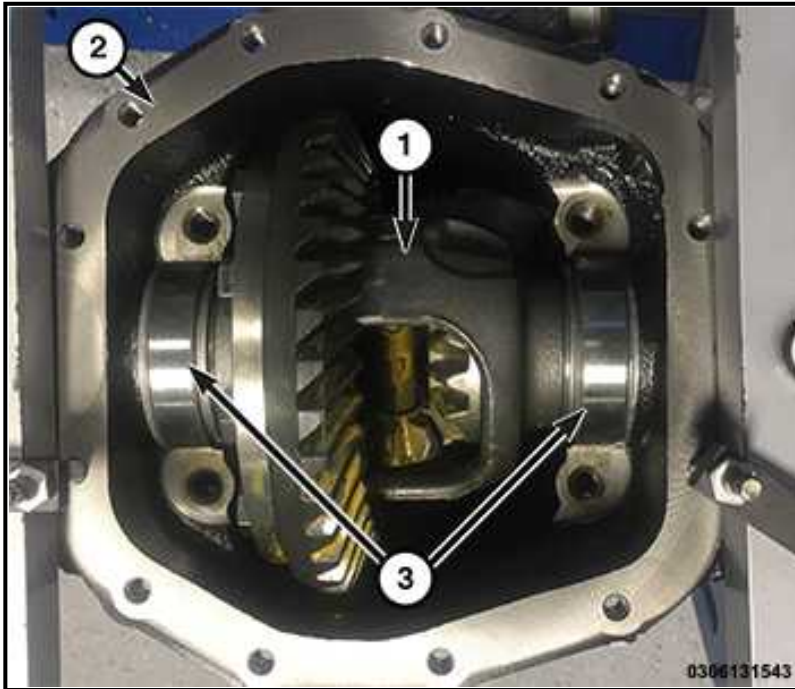
- Clean the differential housing cavity with flushing oil, light engine oil or lint free cloth.

NOTE: Do not use water, steam, kerosene or gasoline for cleaning.

INSTALLATION

During installation, torque the fasteners to the specifications in the torque table(s) below.

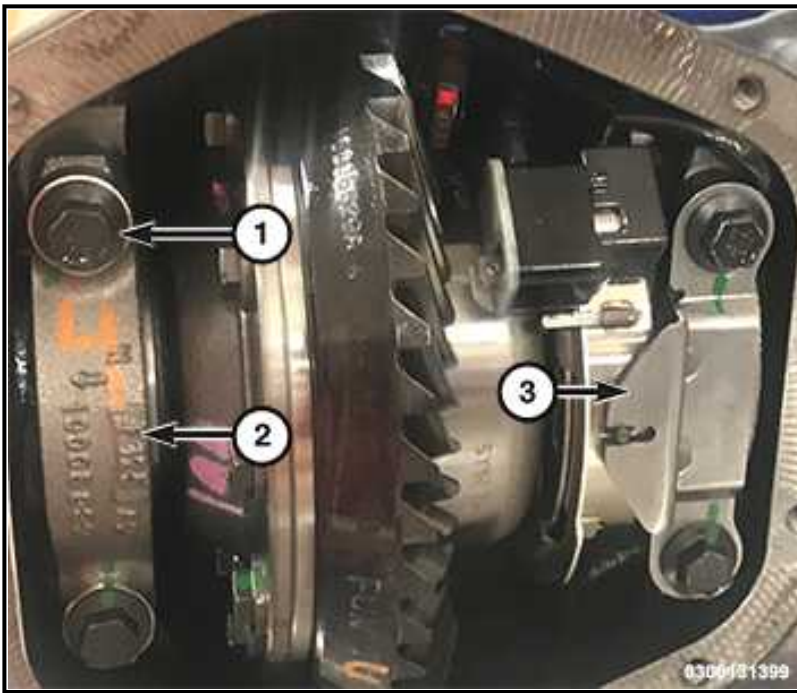
NOTE: If replacement differential bearings or a differential case are being installed, the differential side bearing spacer requirements may change. Refer to Adjustments (Differential Bearing Preload and Gear Backlash) to determine the proper shim selection.



1 - Differential Case
2 - Differential Housing
3 - Differential Bearing Cup and Spacer

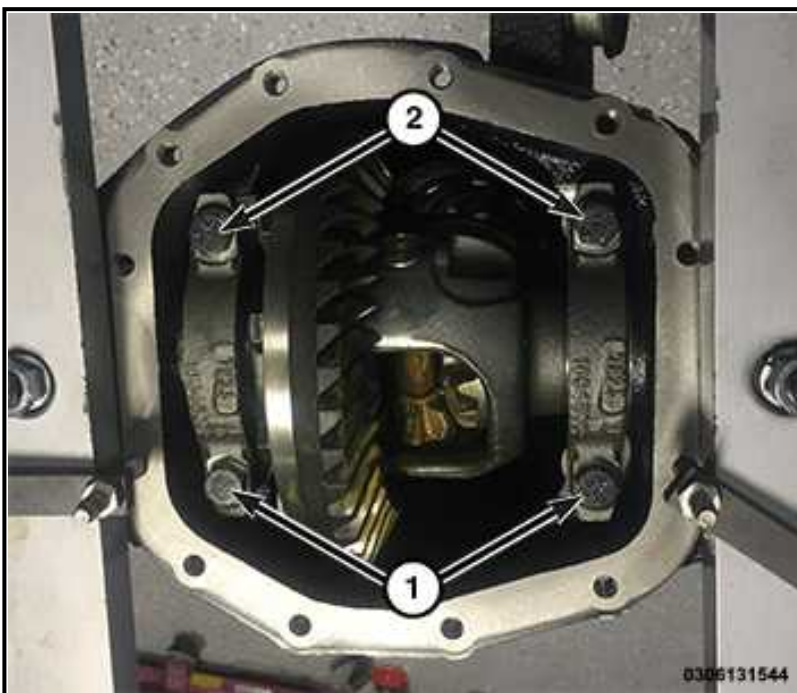
1. Install the differential case into the differential housing with the differential bearing cups and shims in their original locations.

NOTE: Non-locker rear differential case assembly shown for bearing clarity.



- | |
|--|
| 1 - Differential Bearing Cap Bolts |
| 2 - Differential Bearing Cap |
| 3 - Axle Locker Coil Anti-rotation Bracket |

2. Install the bearing caps in their original locations and install and center the coil anti-rotation bracket.



- | |
|------------------------------------|
| 1 - Differential Bearing Cap Bolts |
| 2 - Differential Bearing Cap Bolts |

3. Loosely install the differential bearing cap bolts.
4. Remove the differential housing spreader.
5. Tighten the bearing cap bolts in a criss-cross pattern to the proper torque specification.
6. Install the axle shafts. Refer to [REMOVAL AND INSTALLATION](#) .
7. Install the axle locker switch. Refer to [REMOVAL AND INSTALLATION](#) .
8. Install the differential cover. Refer to [REMOVAL AND INSTALLATION](#) .

9. Fill the differential with the specified fluid. Refer to **CAPACITIES AND RECOMMENDED FLUIDS, SPECIFICATIONS** .

10. Remove the support and lower the vehicle.

TORQUE SPECIFICATIONS

REAR AXLE - M220

DESCRIPTION	SPECIFICATIONS	COMMENT
Axle Retainer Nuts	80 N.m (59 Ft. Lbs.)	-
Bearing Cap Bolts	95 N.m (70 Ft. Lbs.)	-
Differential Cover Bolts	41 N.m (30 Ft. Lbs.)	Do not reuse these fasteners. If removed, a NEW fastener must be installed and tightened to specifications.
Drain Plug	34 N.m (25 Ft. Lbs.)	-
Fill Plug	34 N.m (25 Ft. Lbs.)	-
Pinion Nut	488 N.m (360 Ft. Lbs.)	Do not reuse these fasteners. If removed, a NEW fastener must be installed and tightened to specifications.
Ring Gear Bolts	Torque Procedure: 1. Tighten to 100 N.m (74 Ft. Lbs.) 2. Rotate additional 57.5B°	Do not reuse these fasteners. If removed, a NEW fastener must be installed and tightened to specifications.
Rear Axle Vent Fitting	22 N.m (17 Ft. Lbs.)	-

DIFFERENTIAL CASE ASSEMBLY - M220 TRAC-LOKB® REAR AXLE

REMOVAL

1. Raise and support the vehicle

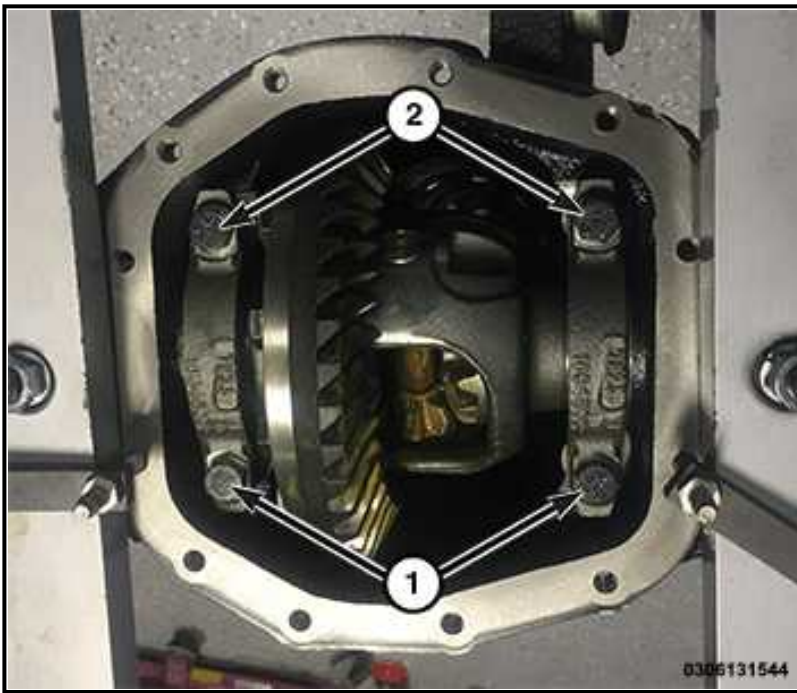
Refer to **HOISTING, STANDARD PROCEDURE** .

2. Remove the differential drain plug and drain the fluid.

3. Remove the differential cover. Refer to **REMOVAL AND INSTALLATION** .

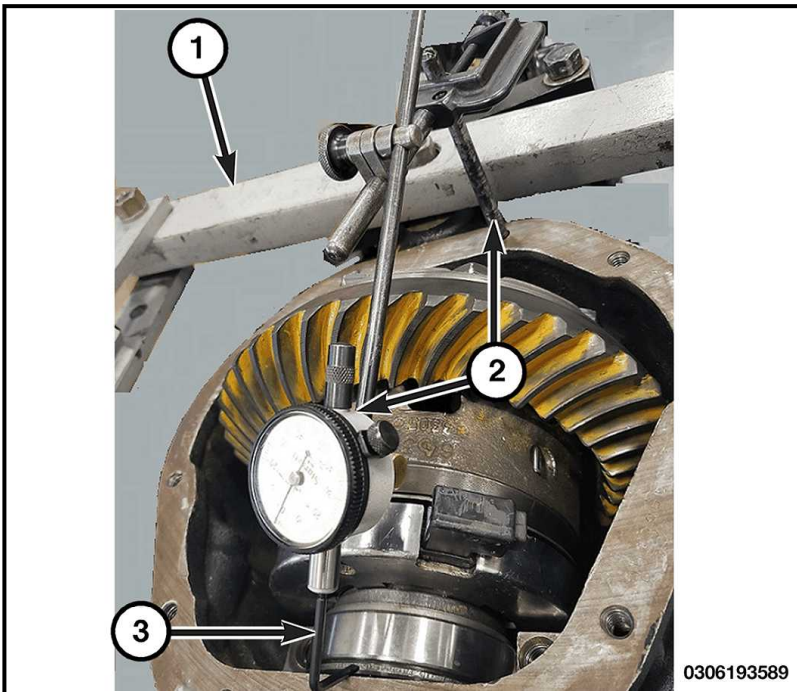
4. Remove the axle locker switch. Refer to **REMOVAL AND INSTALLATION** .

5. Remove the axle shafts. Refer to **REMOVAL AND INSTALLATION** .



1 - Differential Bearing Cap Bolts
2 - Differential Bearing Cap Bolts

6. Mark the bearing caps and differential housing so the caps can be reinstalled in their original positions.
7. Loosen the differential bearing cap bolts.



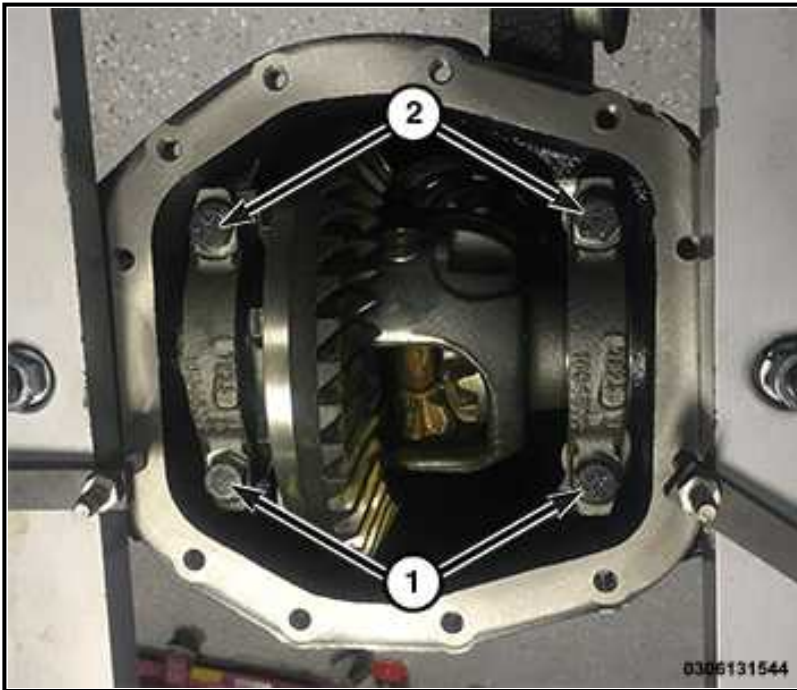
1 - Spreader
2 - Dial Indicator And Mounting
3 - 90B° Dial Indicator Tip

8. Position the (special tool #W-129-B, Spreader, Differential) with (special tool #6987B, Adapter Kit, Axle Spreader) on the differential housing locating holes. Install the hold-down clamps and tighten the turnbuckle finger-tight.
9. Install a pin (special tool #C-3288-B, Set, Alignment Pins) at the left side of the differential housing. Attach the dial indicator with the SP-1917 or equivalent 90B° dial indicator tip (special tool #C-3339A, Set, Dial Indicator) to the pin. Load the SP-1917 or equivalent 90B° dial indicator tip against the opposite side of the housing and zero the dial indicator.

10. Spread differential housing while measuring the distance with the dial indicator.

NOTE: Never spread the differential housing over 0.50 mm (0.020 in.). Failure to follow these instructions will damage the housing.

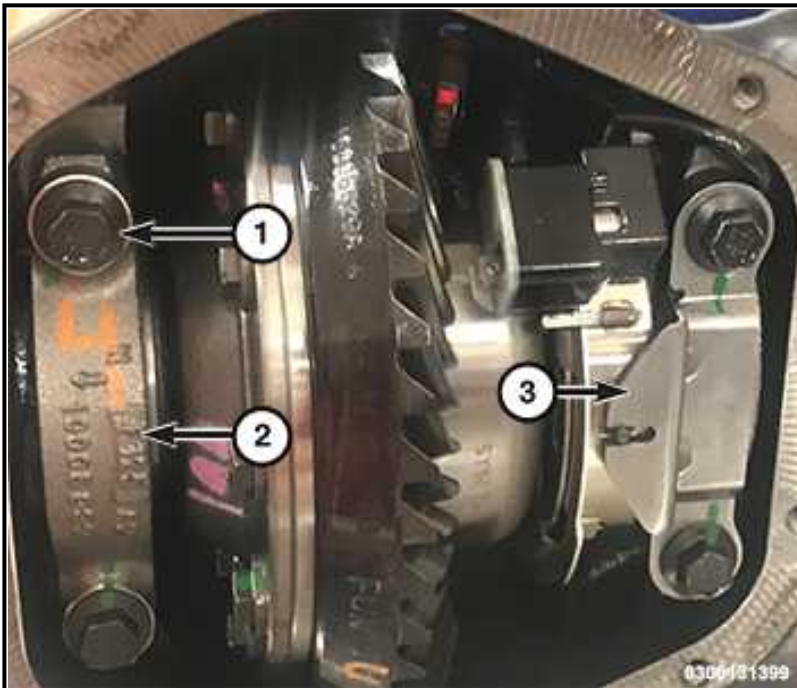
11. Remove the dial indicator.



1 - Differential Bearing Cap Bolts

2 - Differential Bearing Cap Bolts

12. Holding the differential case in position, remove the differential bearing cap bolts.

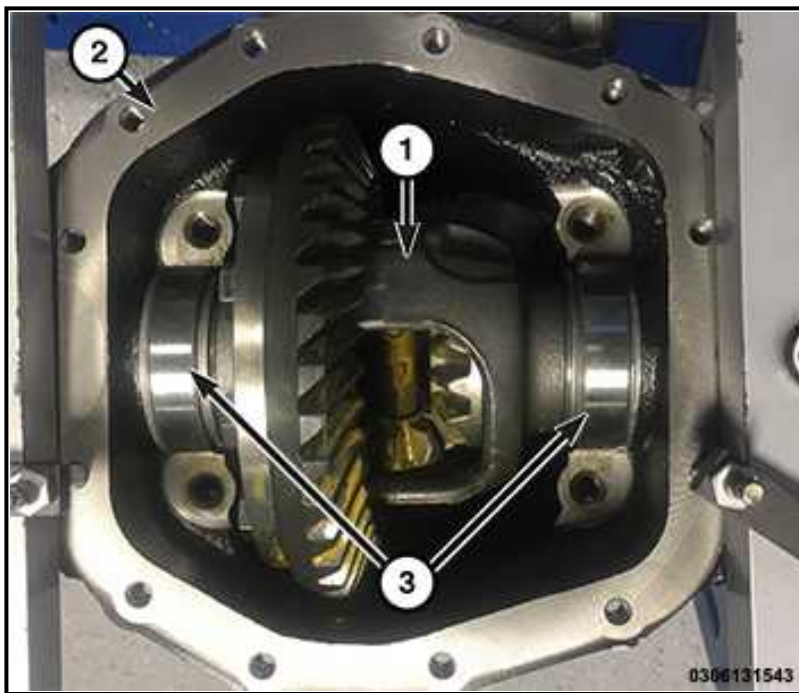


1 - Differential Bearing Cap Bolts

2 - Differential Bearing Cap

3 - Axle Locker Coil Anti-rotation Bracket
--

13. Remove the axle locker coil anti-rotation bracket from the bearing cap, remove both bearing caps.



1 - Differential Case
2 - Differential Housing
3 - Differential Bearing Cup and Spacer

14. Remove the differential case from the differential housing and tag the differential bearing cup and shim locations.

NOTE: Non-locker rear differential case assembly shown for bearing clarity.

CLEANING:

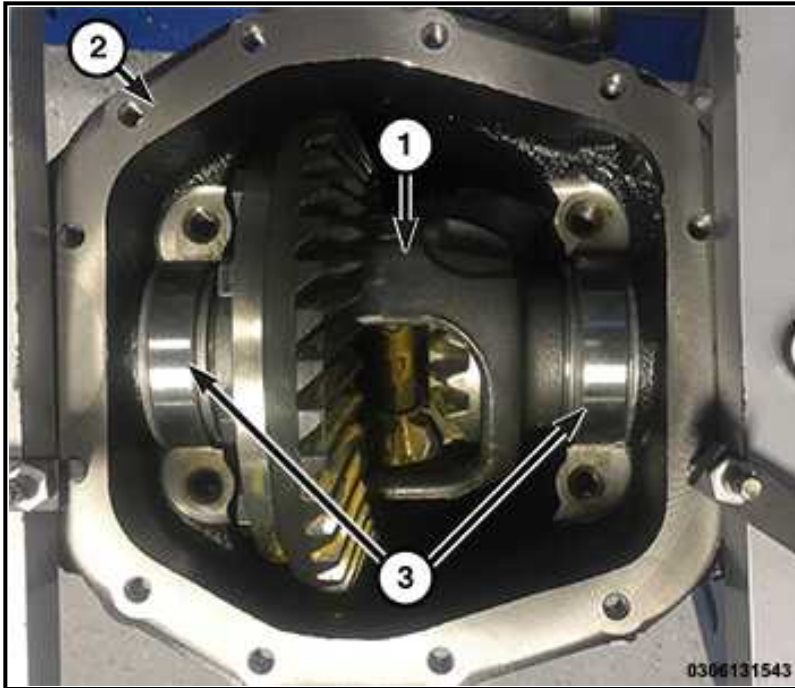
- Clean the differential housing cavity with flushing oil, light engine oil or lint free cloth.

NOTE: Do not use water, steam, kerosene or gasoline for cleaning.

INSTALLATION

During installation, torque the fasteners to the specifications in the torque table(s) below.

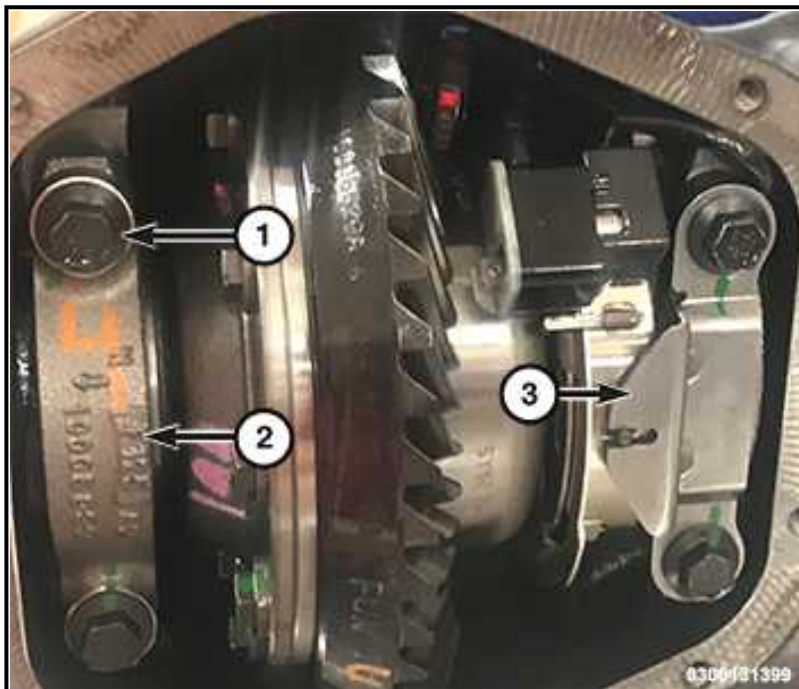
NOTE: If replacement differential bearings or a differential case are being installed, the differential side bearing spacer requirements may change. Refer to Adjustments (Differential Bearing Preload and Gear Backlash) to determine the proper shim selection.



1 - Differential Case
2 - Differential Housing
3 - Differential Bearing Cup and Spacer

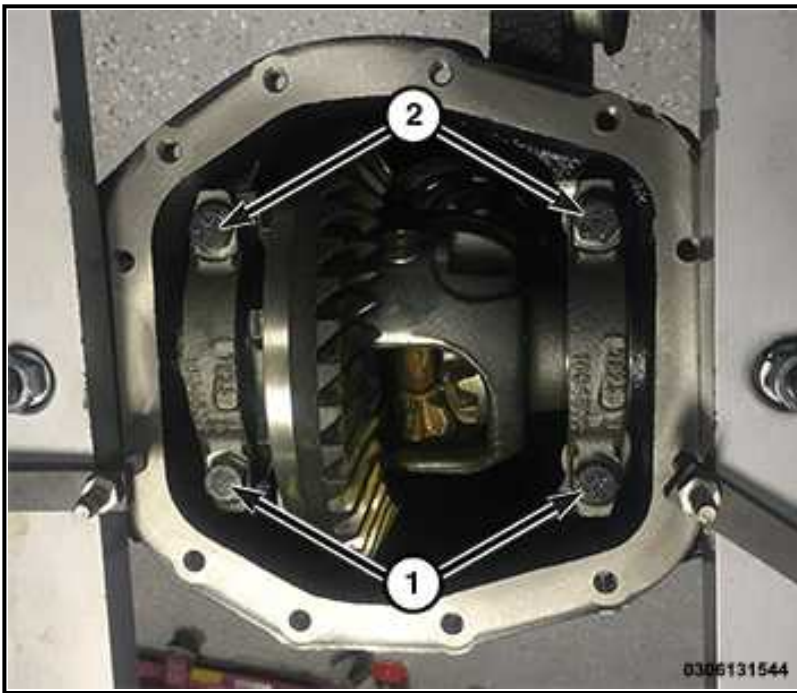
1. Install the differential case into the differential housing with the differential bearing cups and shims in their original locations.

NOTE: Non-locker rear differential case assembly shown for bearing clarity.



1 - Differential Bearing Cap Bolts
2 - Differential Bearing Cap
3 - Axle Locker Coil Anti-rotation Bracket

2. Install the bearing caps in their original locations and install and center the coil anti-rotation bracket.



1 - Differential Bearing Cap Bolts
2 - Differential Bearing Cap Bolts

3. Loosely install the differential bearing cap bolts.
4. Remove the differential housing spreader.
5. Tighten the bearing cap bolts in a criss-cross pattern to the proper torque specification.
6. Install the axle shafts. Refer to [REMOVAL AND INSTALLATION](#) .
7. Install the axle locker switch. Refer to [REMOVAL AND INSTALLATION](#) .
8. Install the differential cover. Refer to [REMOVAL AND INSTALLATION](#) .
9. Fill the differential with the specified fluid. Refer to [CAPACITIES AND RECOMMENDED FLUIDS, SPECIFICATIONS](#) .
10. Remove the support and lower the vehicle.

TORQUE SPECIFICATIONS

REAR AXLE - M220

DESCRIPTION	SPECIFICATIONS	COMMENT
Axle Retainer Nuts	80 N.m (59 Ft. Lbs.)	-
Bearing Cap Bolts	95 N.m (70 Ft. Lbs.)	-
Differential Cover Bolts	41 N.m (30 Ft. Lbs.)	Do not reuse these fasteners. If removed, a NEW fastener must be installed and tightened to specifications.
Drain Plug	34 N.m (25 Ft. Lbs.)	-
Fill Plug	34 N.m (25 Ft. Lbs.)	-
Pinion Nut	488 N.m (360 Ft. Lbs.)	Do not reuse these fasteners. If removed, a NEW fastener must be installed and tightened to specifications.
Ring Gear Bolts	Torque Procedure: 1. Tighten to 100 N.m (74 Ft. Lbs.) 2. Rotate additional 57.5B°	Do not reuse these fasteners. If removed, a NEW fastener must be installed and tightened to specifications.
Rear Axle Vent Fitting	22 N.m (17 Ft. Lbs.)	-

DISASSEMBLY AND ASSEMBLY

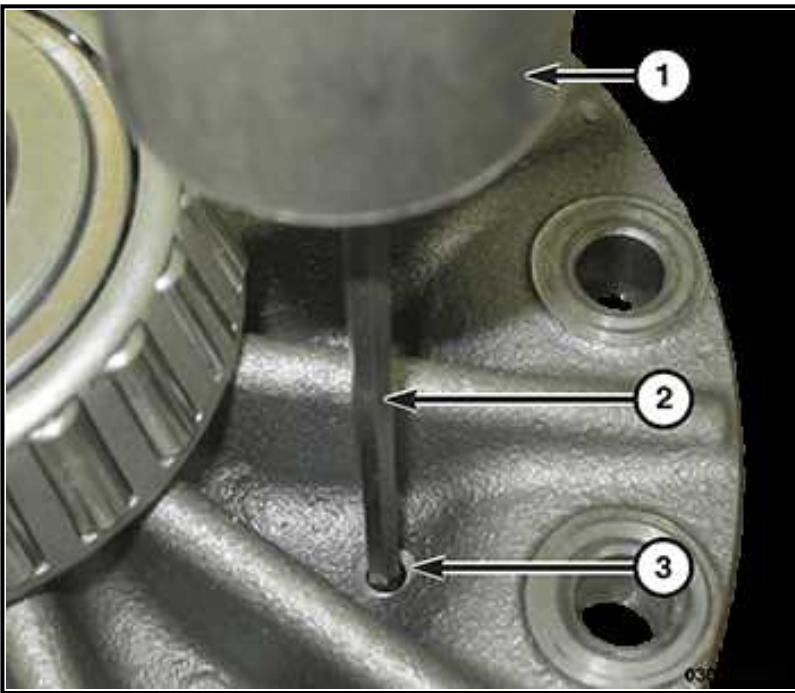
M186/M210 FRONT AXLES

DISASSEMBLY



1 - Ring Gear
2 - Ring Gear Bolts
3 - Differential Case

1. Remove and **DISCARD** the ring gear bolts and remove the ring gear from the differential case.



1 - Hammer

2 - Punch

3 - Roll Pin

2. Remove the pinion mate shaft roll pin;

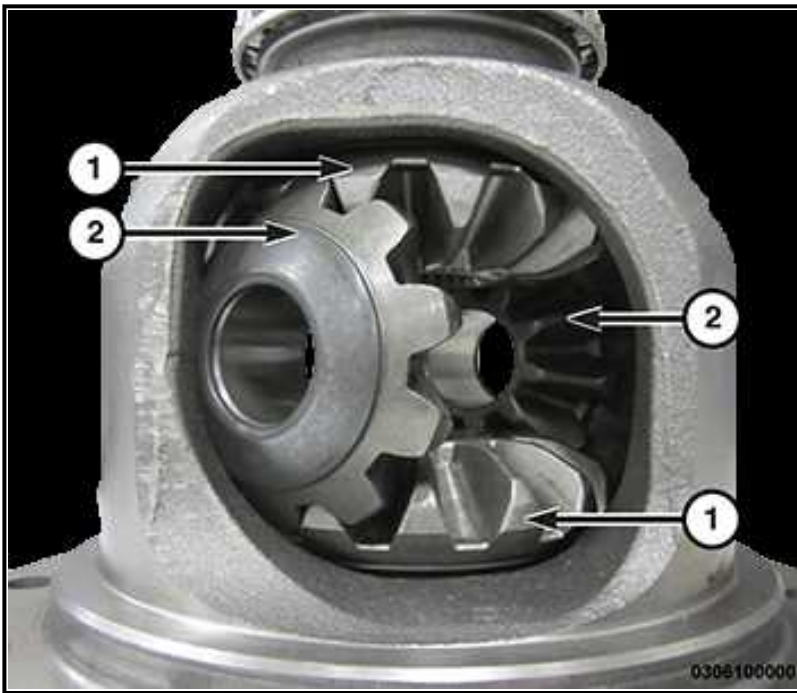
- with a punch and hammer if the case has a through hole.
- with a suitable slide hammer if the case has a blind hole.



1 - Differential Case

2 - Pinion Mate Shaft

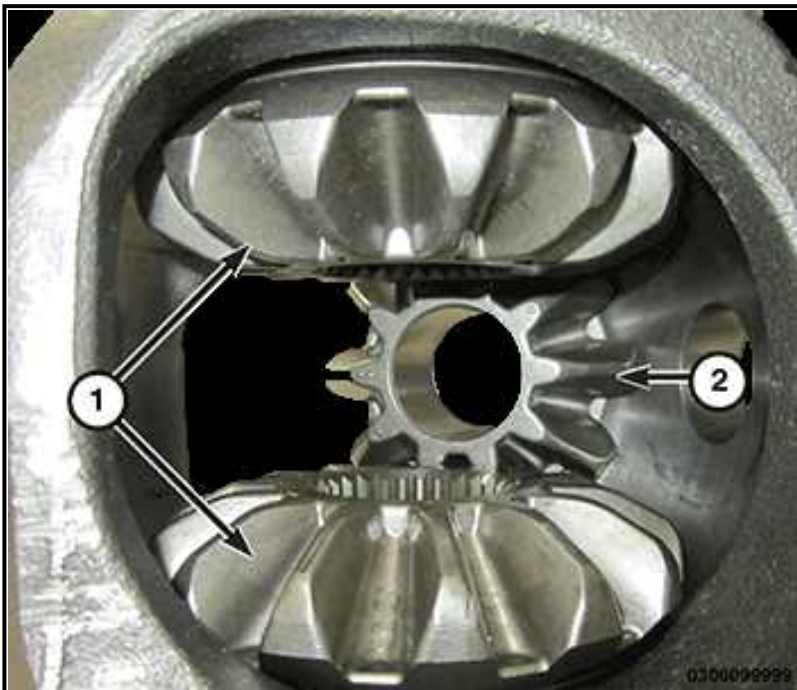
3. Remove the pinion mate shaft from the differential case and the pinion gears.



1 - Differential Side Gears

2 - Pinion Gears

4. Rotate the differential side gears to expose the pinion gears to the differential windows.
5. Remove the pinion gears with the thrust washers through the differential windows.

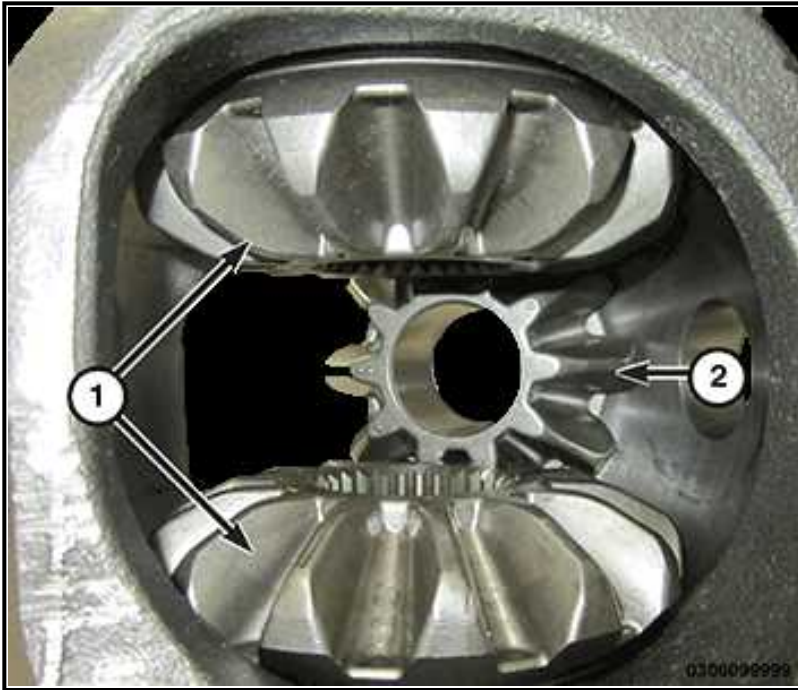


1 - Differential Side Gears

2 - Differential Pinion Gears

6. Remove the differential side gears with thrust washers through the differential window.

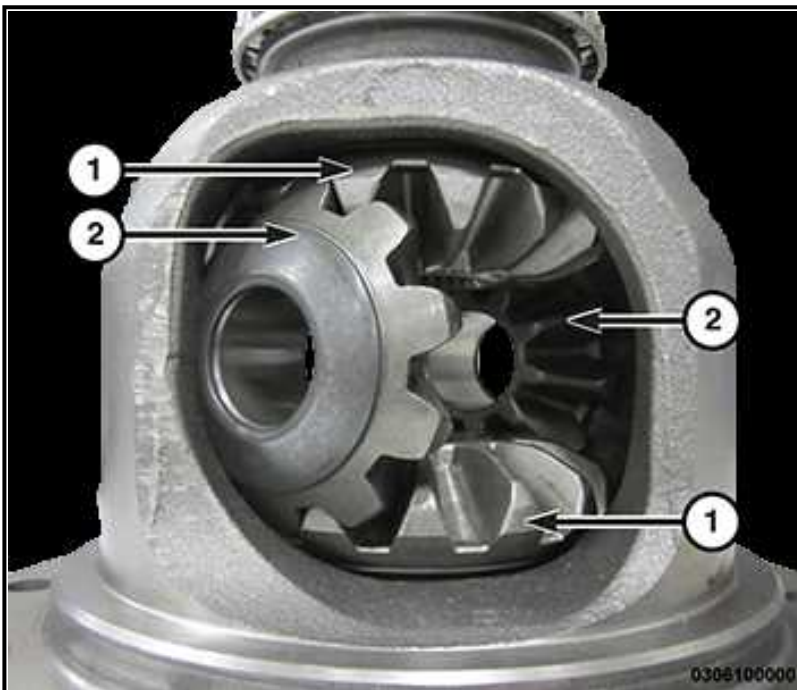
ASSEMBLY



- | |
|-------------------------------|
| 1 - Differential Side Gears |
| 2 - Differential Pinion Gears |

NOTE: If the same gears and thrust washers are being used, install them into their original locations.

1. Lubricate all differential components with axle lubricant.
2. Install the differential side gears with the thrust washers through the differential window.



- | |
|-------------------------------|
| 1 - Differential Side Gears |
| 2 - Differential Pinion Gears |

3. Install the pinion gears with the thrust washers through differential windows.



1 - Pinion Gears

2 - Pinion Mate Shaft Hole

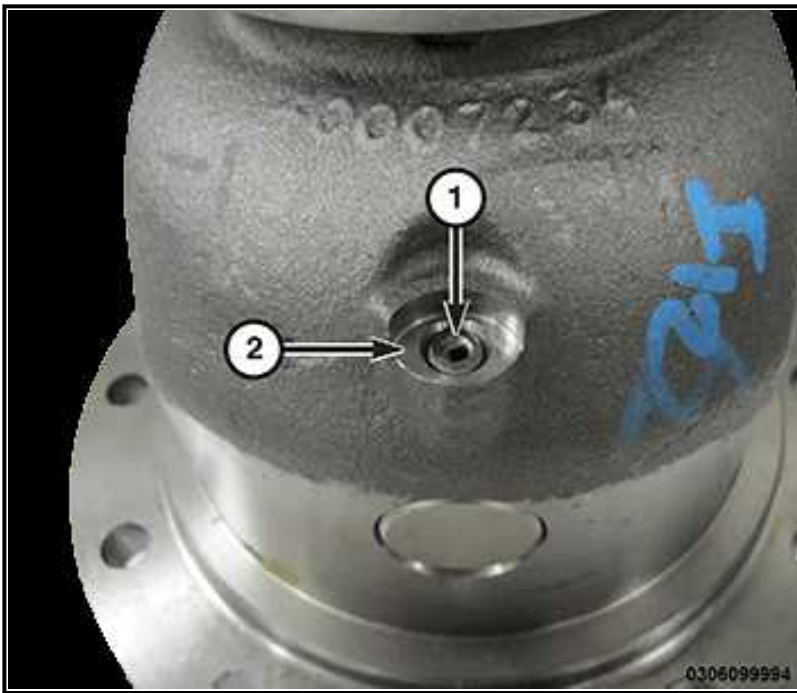
4. Rotate the pinion gears with the thrust washers and align the gears to the pinion mate shaft hole.



1 - Roll Pin Hole

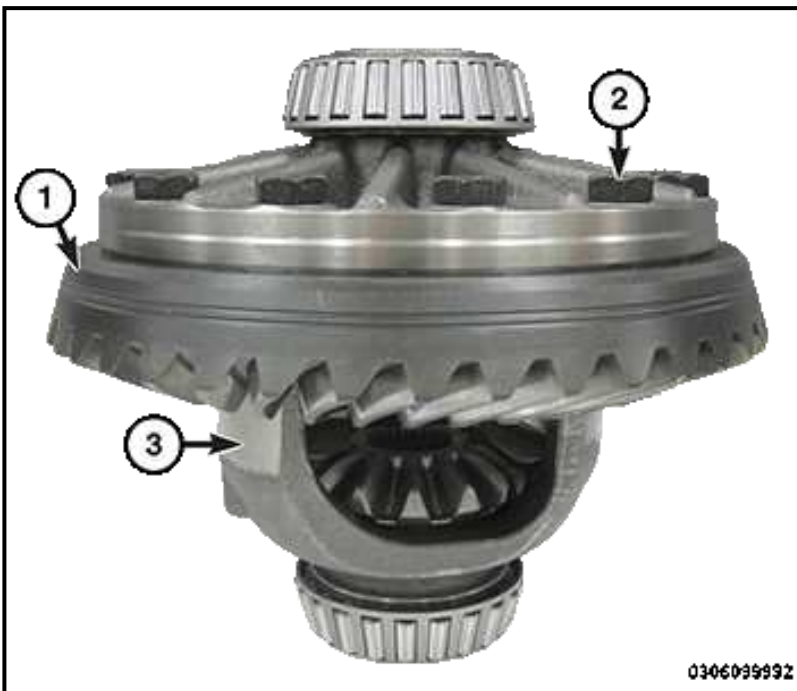
2 - Pinion Mate Shaft

5. Install the pinion mate shaft in the differential case and pinion gears while keeping the pinion mate shaft roll pin hole aligned with the opening.



- | |
|-----------------------|
| 1 - Roll Pin |
| 2 - Differential Case |

6. Install the pinion mate shaft roll pin in the differential case and through the pinion mate shaft.



- | |
|-----------------------|
| 1 - Ring Gear |
| 2 - Ring Gear Bolts |
| 3 - Differential Case |

7. Install the ring gear, the **NEW** ring gear bolts on the differential case and alternately tighten to the proper torque specification.

TORQUE SPECIFICATIONS

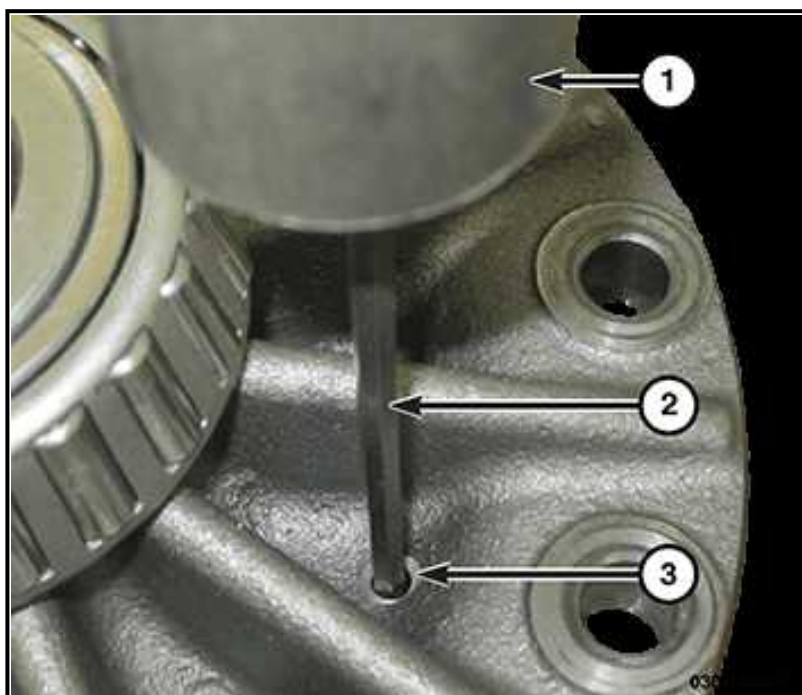
M220 AXLE

DISASSEMBLY



- | |
|-----------------------|
| 1 - Ring Gear |
| 2 - Ring Gear Bolts |
| 3 - Differential Case |

1. Remove and **DISCARD** the ring gear bolts and remove the ring gear from the differential case.



- | |
|--------------|
| 1 - Hammer |
| 2 - Punch |
| 3 - Roll Pin |

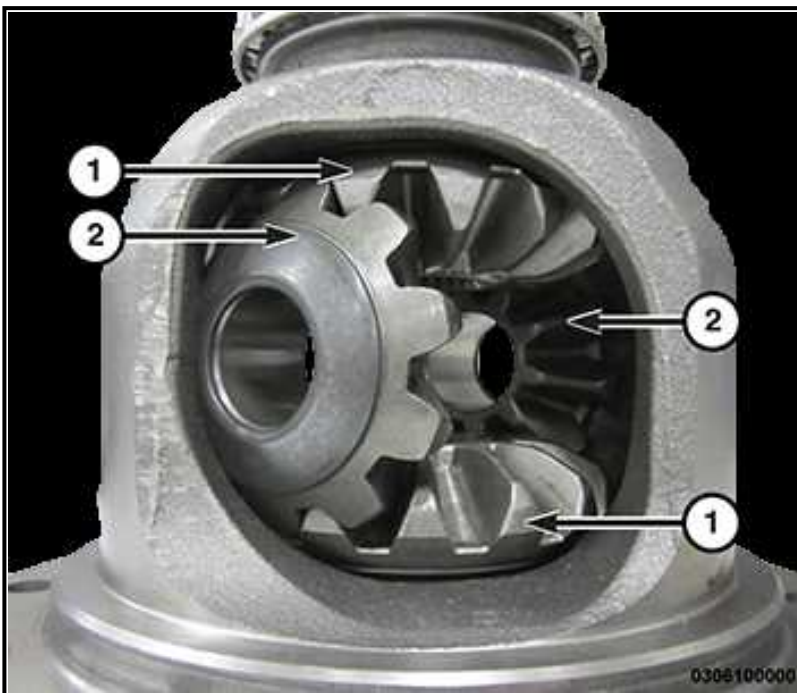
2. Remove the pinion mate shaft roll pin with a punch and hammer.



1 - Differential Case

2 - Pinion Mate Shaft

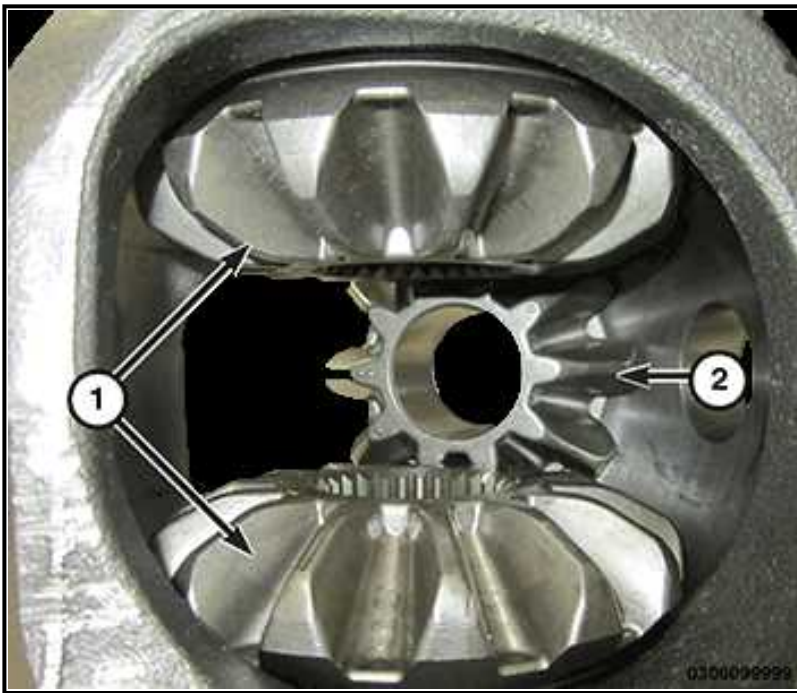
3. Remove the pinion mate shaft from the differential case and the pinion gears.



1 - Differential Side Gears

2 - Pinion Gears

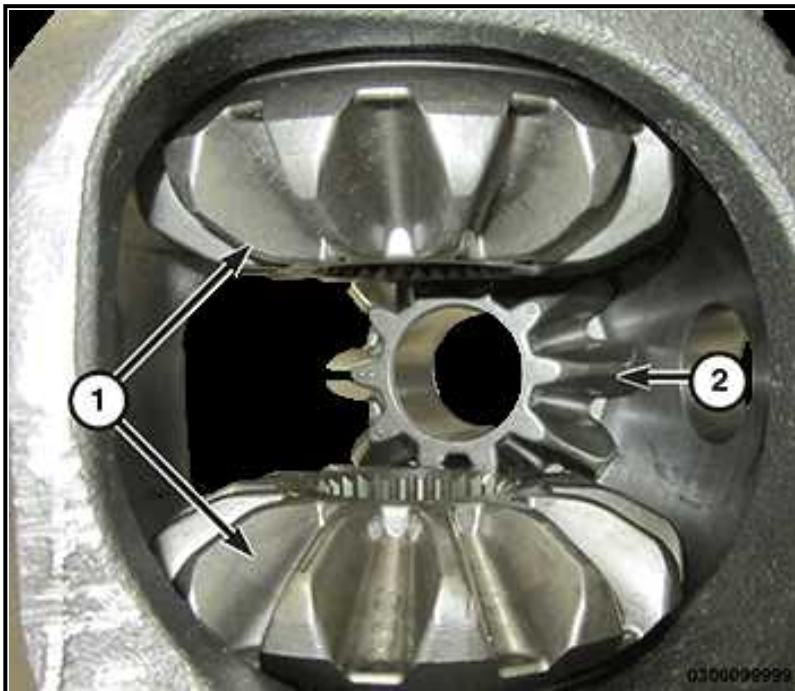
4. Rotate the differential side gears to expose the pinion gears to the differential windows.
5. Remove the pinion gears with the thrust washers through the differential windows.



- | |
|-------------------------------|
| 1 - Differential Side Gears |
| 2 - Differential Pinion Gears |

6. Remove the differential side gears with thrust washers through the differential window.

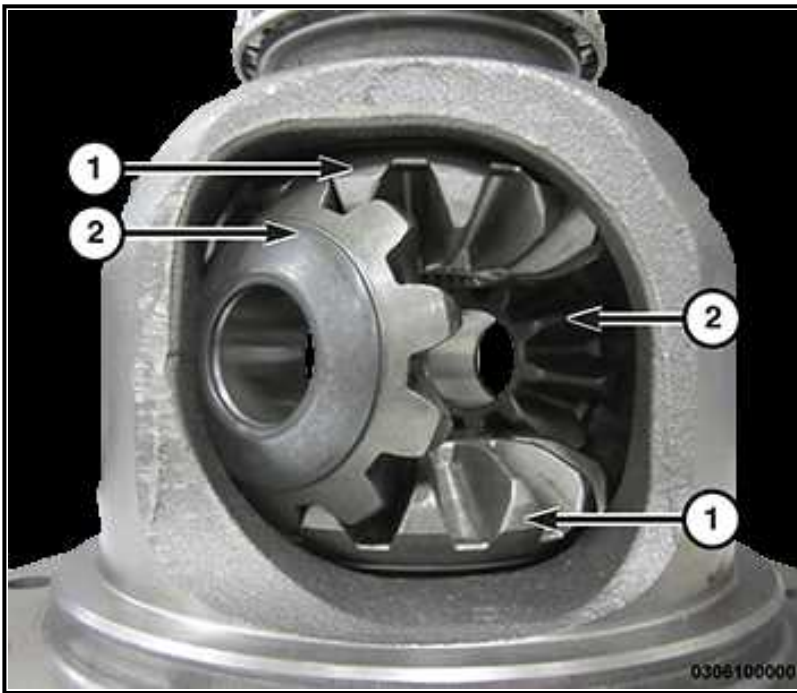
ASSEMBLY



- | |
|-------------------------------|
| 1 - Differential Side Gears |
| 2 - Differential Pinion Gears |

NOTE: If the same gears and thrust washers are being used, install them into their original locations.

1. Lubricate all differential components with axle lubricant.
2. Install the differential side gears with the thrust washers through the differential window.



- | |
|-------------------------------|
| 1 - Differential Side Gears |
| 2 - Differential Pinion Gears |

3. Install the pinion gears with the thrust washers through differential windows.



- | |
|----------------------------|
| 1 - Pinion Gears |
| 2 - Pinion Mate Shaft Hole |

4. Rotate the pinion gears with the thrust washers and align the gears to the pinion mate shaft hole.



1 - Roll Pin Hole

2 - Pinion Mate Shaft

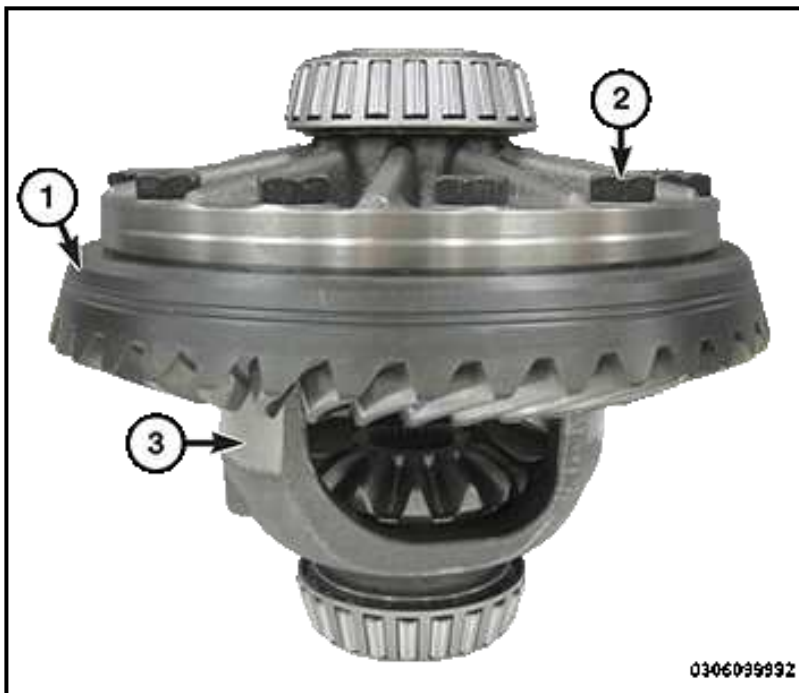
5. Install the pinion mate shaft in the differential case and pinion gears while keeping the pinion mate shaft roll pin hole aligned with the opening.



1 - Roll Pin

2 - Differential Case

6. Install the pinion mate shaft roll pin in the differential and through the pinion mate shaft.



1 - Ring Gear
2 - Ring Gear Bolts
3 - Differential Case

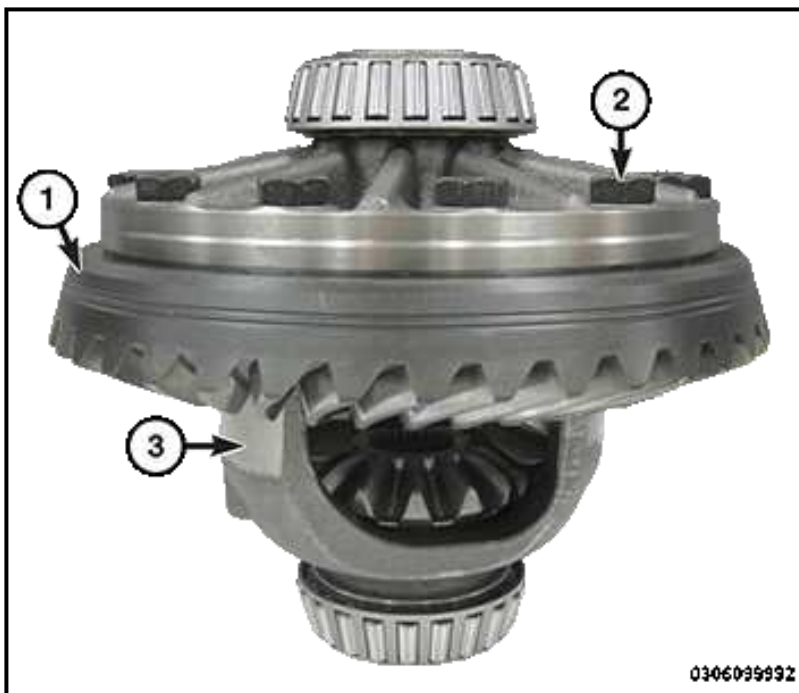
7. Install the ring gear, the **NEW** ring gear bolts on the differential case and alternately tighten to the proper torque specification.

TORQUE SPECIFICATIONS

M220 TRAC-LOCK/TRU-LOCK AXLE

DISASSEMBLY

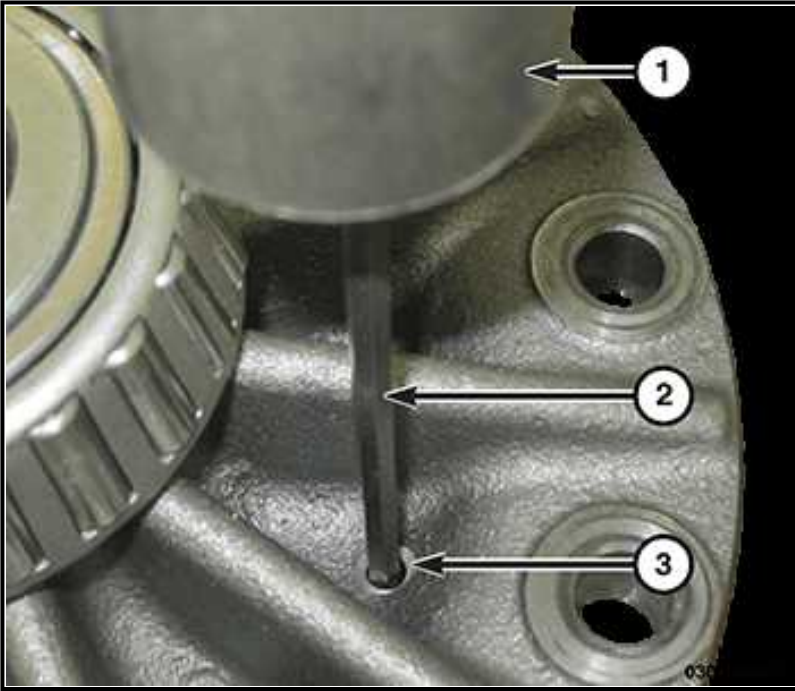
1. Remove the ring gear. Refer to [REMOVAL AND INSTALLATION](#) .



1 - Ring Gear
2 - Ring Gear Bolts

3 - Differential Case

2. Clamp the (special tool #6963B, Fixture, Holding) in a vise and set the differential case on the fixture.



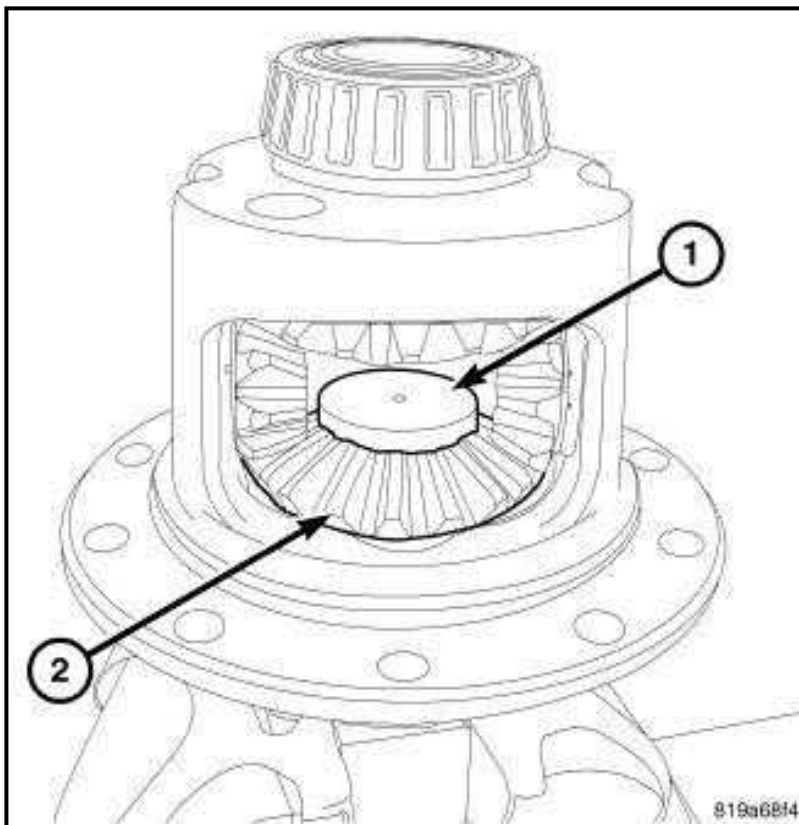
- | |
|--------------|
| 1 - Hammer |
| 2 - Punch |
| 3 - Roll Pin |

3. Remove the pinion gear mate shaft roll pin from differential case using a suitable punch and hammer.



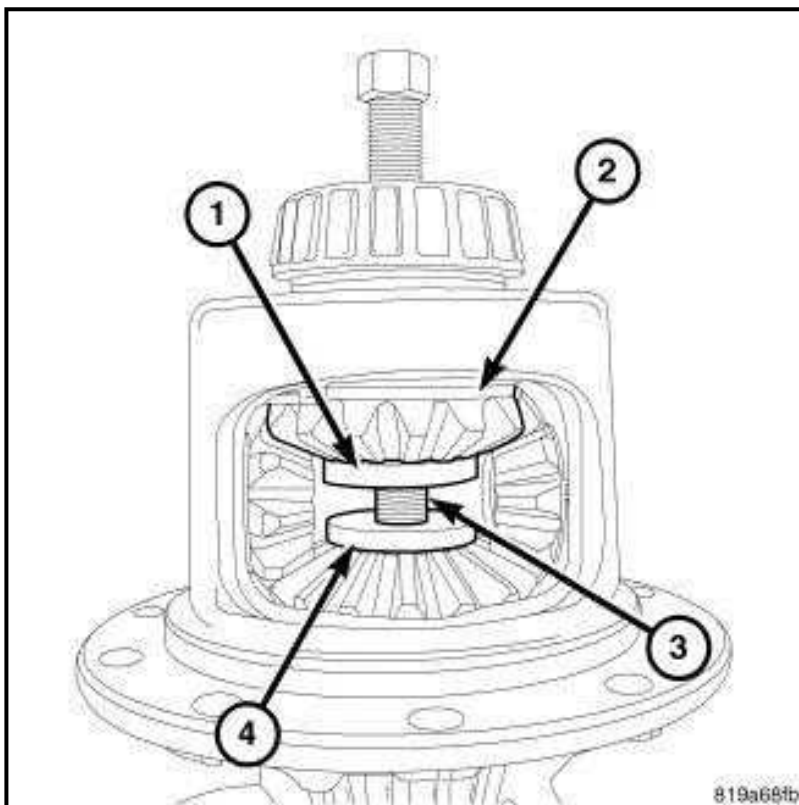
- | |
|-----------------------|
| 1 - Differential Case |
| 2 - Pinion Mate Shaft |

4. Rotate the differential case on the fixture and remove the pinion mate shaft.



1 - Disc
2 - Lower Side Gear

5. Lubricate and install the disc without the threaded hole from the (special tool #C-4487, Trac-Lok Axle Tool) into lower side gear.

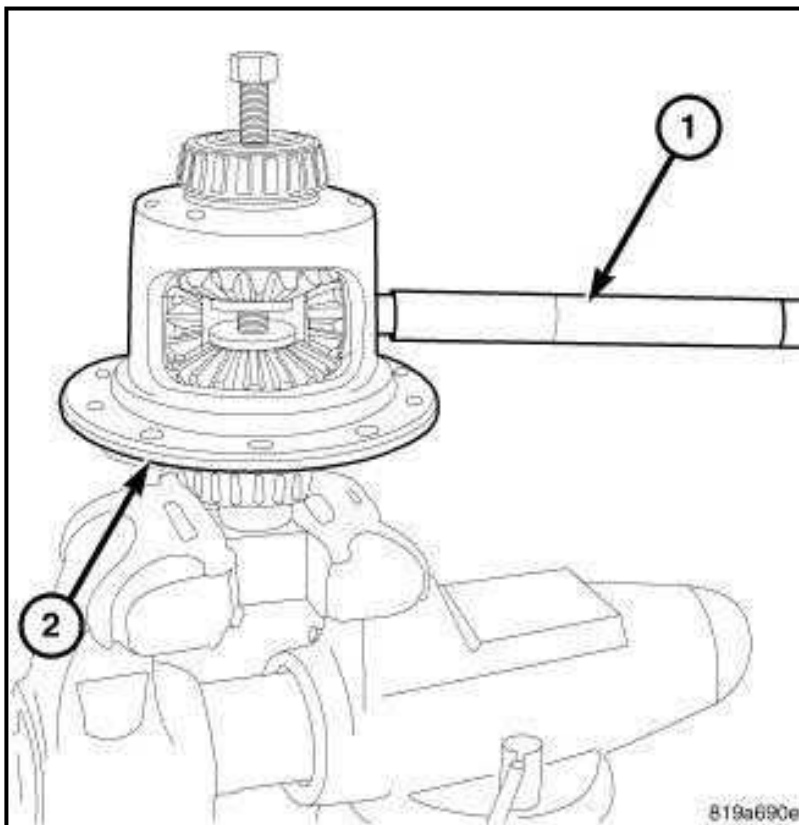


1 - Upper Disc	3 - Forcing Screw
2 - Upper Side Gear	4 - Lower Disc

6. Lubricate and install the disc with threaded hole from the (special tool #C-4487, Trac-Lok Axle Tool) into upper side gear. Thread forcing screw from the (special tool #C-4487, Trac-Lok Axle Tool) into

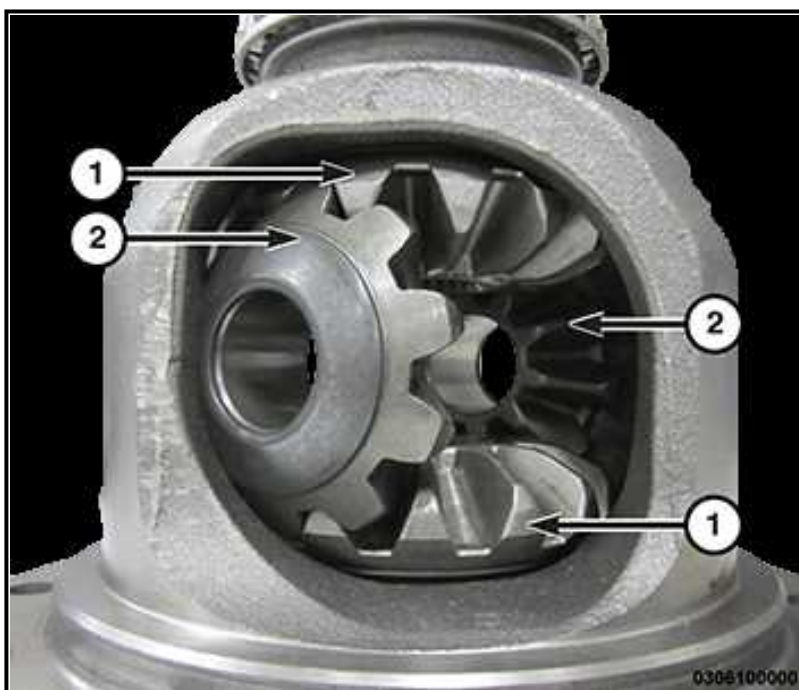
upper disc until it contacts the lower disc.

NOTE: The slot in the threaded upper disc can be used to prevent it from turning using a screwdriver.



1 - Turning Bar
2 - Differential Case

7. Tighten the forcing screw to compress the Belleville springs in the clutch packs. Insert the turning bar from the (special tool #C-4487, Trac-Lok Axle Tool) into the pinion mate shaft hole in the differential case.

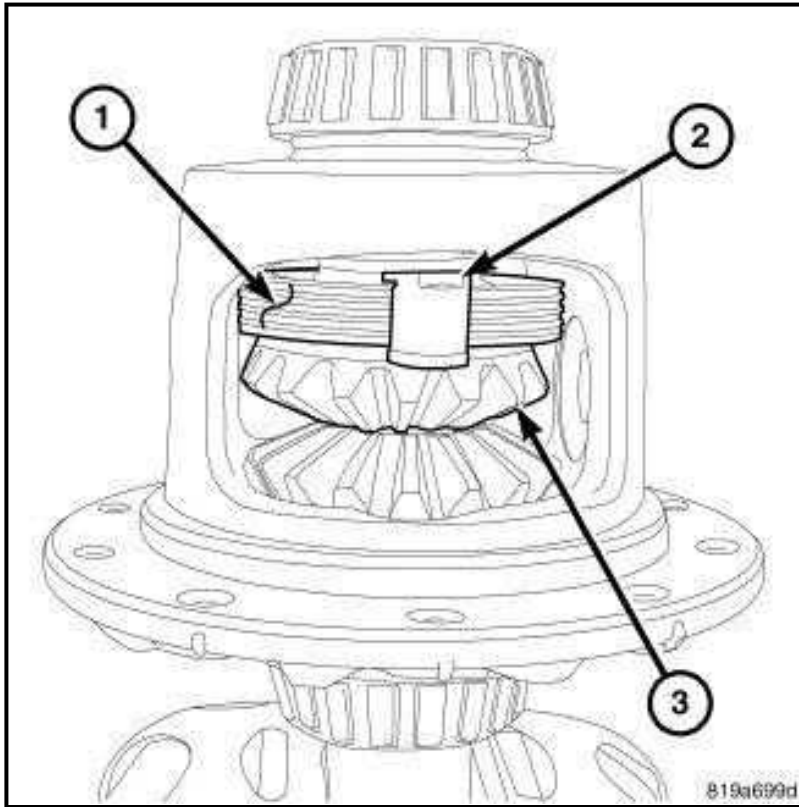


1 - Differential Side Gears

2 - Pinion Gears

8. Rotate the differential case with the turning bar until the pinion gears and washers can be removed.

NOTE: Loosen the forcing screw in small increments to relieve the clutch pack tension if the differential case can not be rotated.



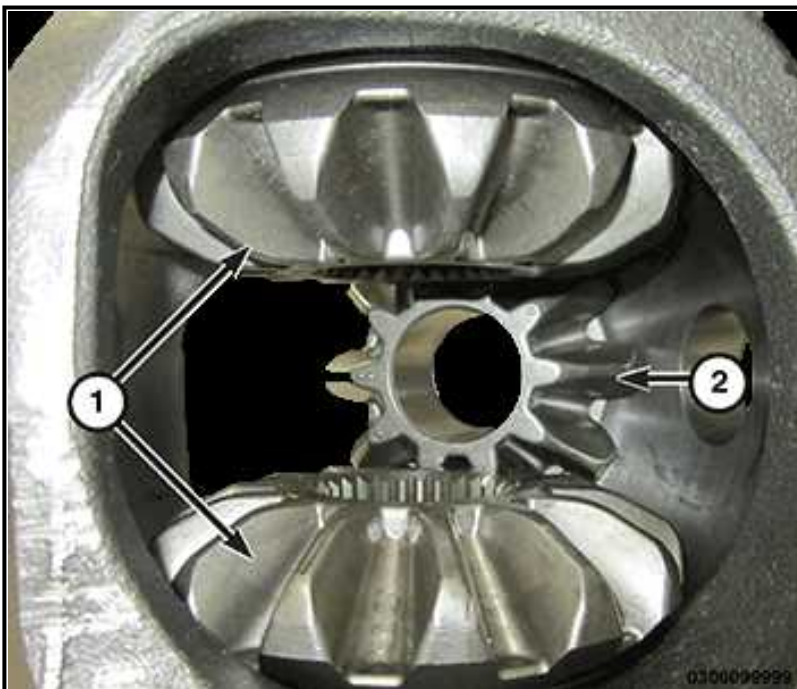
1 - Upper Clutch Pack

2 - Clutch Pack Retainers

3 - Upper Side Gear

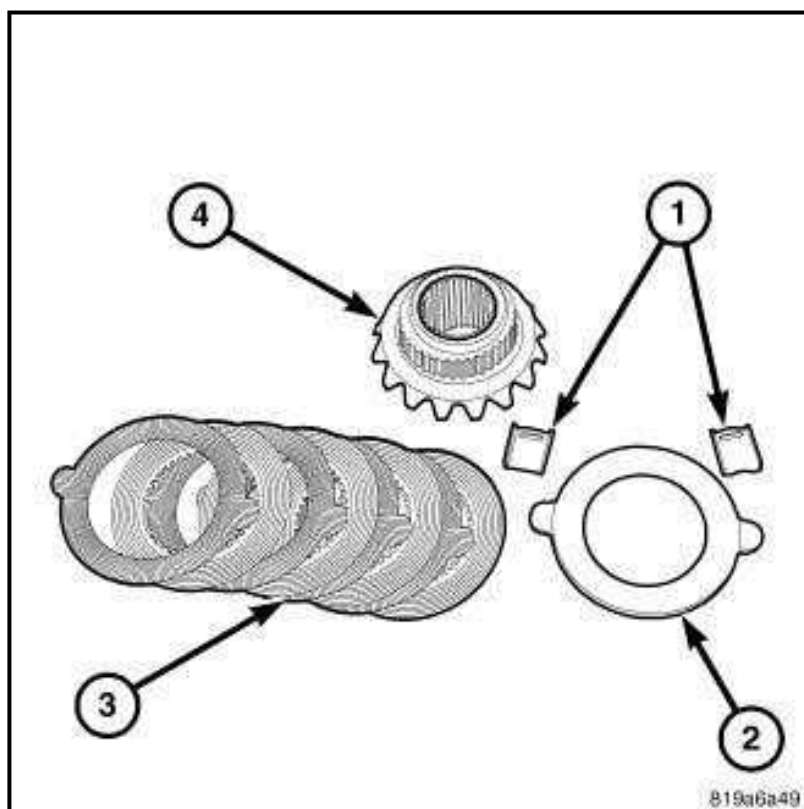
9. Remove the forcing screw, step plate and threaded adapter.

10. Remove the upper clutch pack, clutch pack retainers and the upper side gear from the differential case.



1 - Differential Side Gears
2 - Differential Pinion Gears

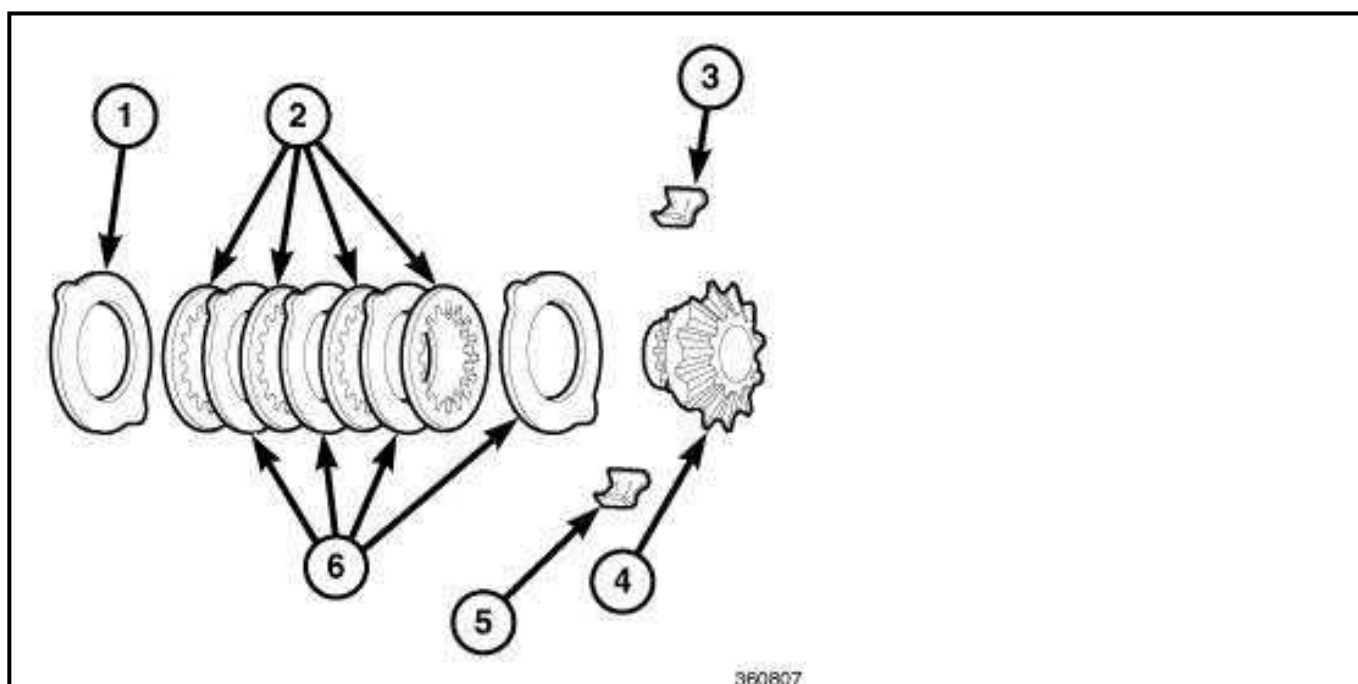
11. Remove the lower clutch pack, clutch pack retainers and lower side gear from the differential case.



1 - Clutch Pack Retainers	3 - Clutch Pack
2 - Belleville Spring	4 - Side Gear

12. Remove the clutch pack retainers, clutch pack Belleville spring and the side gear. Keep the plates in order during removal.

ASSEMBLY



1 - Belleville Spring	4 - Side Gear
-----------------------	---------------

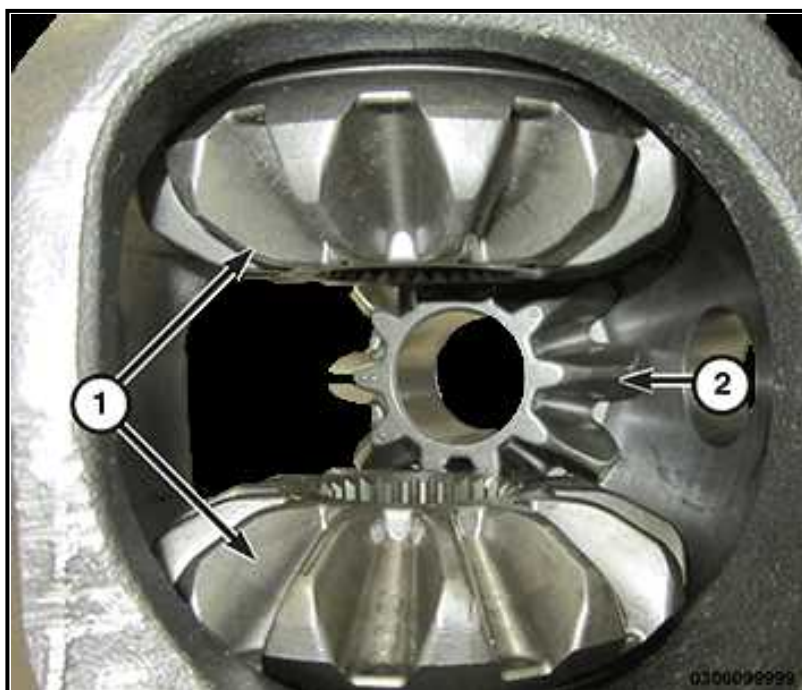
2 - Clutch Discs	5 - Retainer
3 - Retainer	6 - Plates

NOTE: New plates and discs with fiber coating (no grooves or lines) must be presoaked in friction modifier before assembly. Soak plates and discs for a minimum of 20 minutes.

1. Lubricate the components with gear lubricant.
2. Assemble the clutch discs, plates and Belleville spring into the packs and secure the disc packs with the retainers.

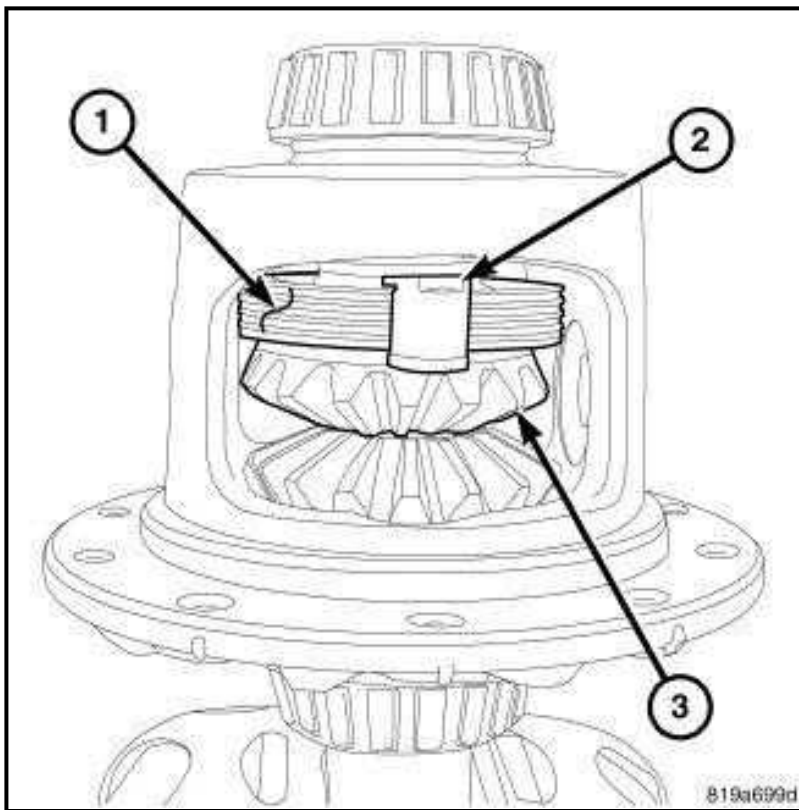
NOTE: The Belleville spring is positioned with the convex side against the differential case.

3. Position the assembled clutch disc packs on the side gear hubs.



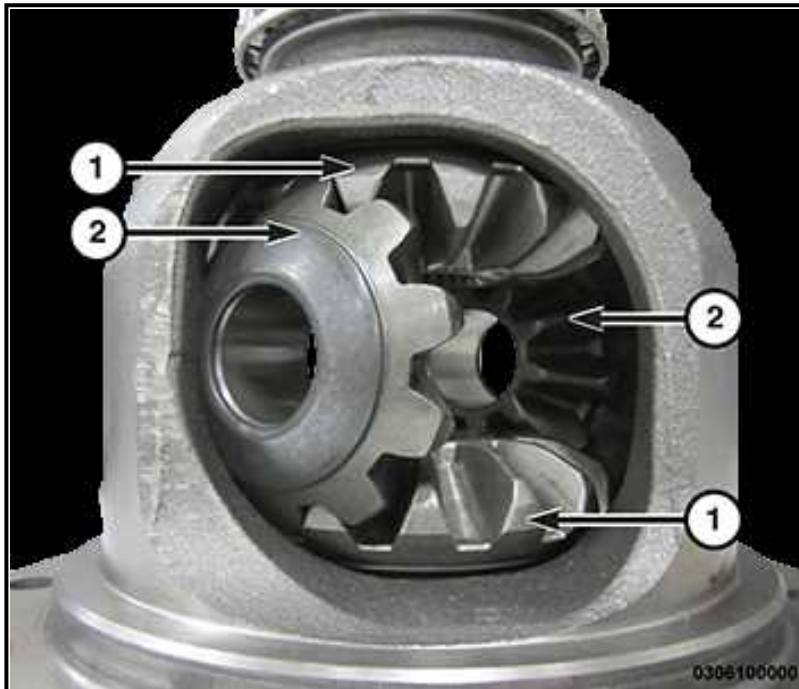
- | |
|-------------------------------|
| 1 - Differential Side Gears |
| 2 - Differential Pinion Gears |

4. Install the lower clutch pack and side gear in the differential case, with the retaining clips seated in the case pocket.



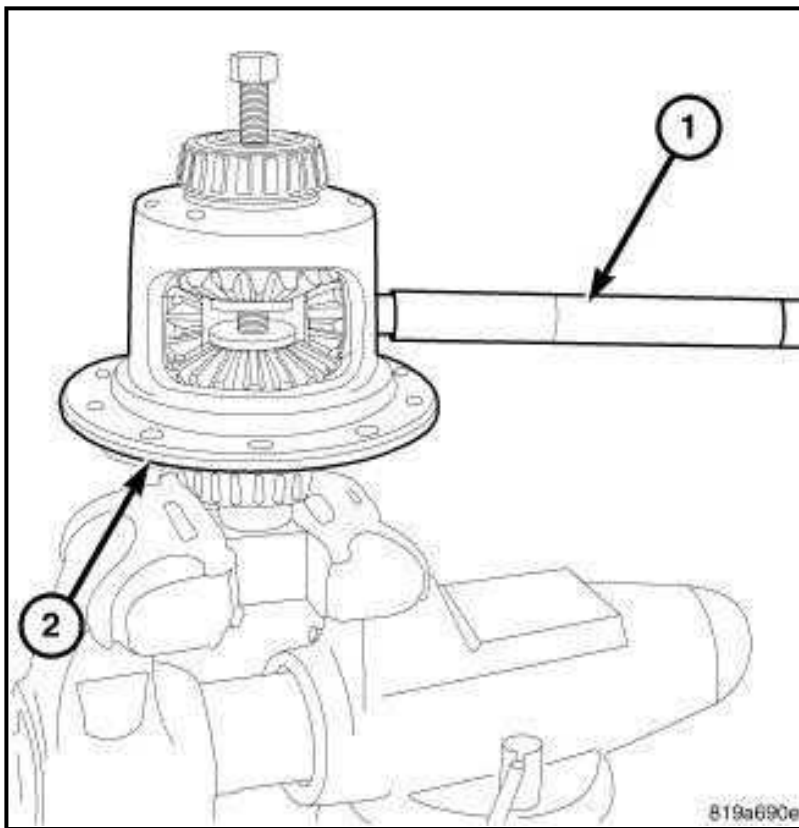
1 - Upper Clutch Pack
2 - Clutch Pack Retainers
3 - Upper Side Gear

5. Install the upper clutch disc pack retaining clips and the side gear in the differential case pocket.



1 - Differential Side Gears
2 - Differential Pinion Gears

6. Lubricated and install the discs into the side gears from the (special tool #C-4487, Trac-Lok Axle Tool). Install forcing screw from the (special tool #C-4487, Trac-Lok Axle Tool) and the threaded screw to compress the Belleville springs in the clutch packs.
7. Install the pinion gears in the side gears opposite of each other.

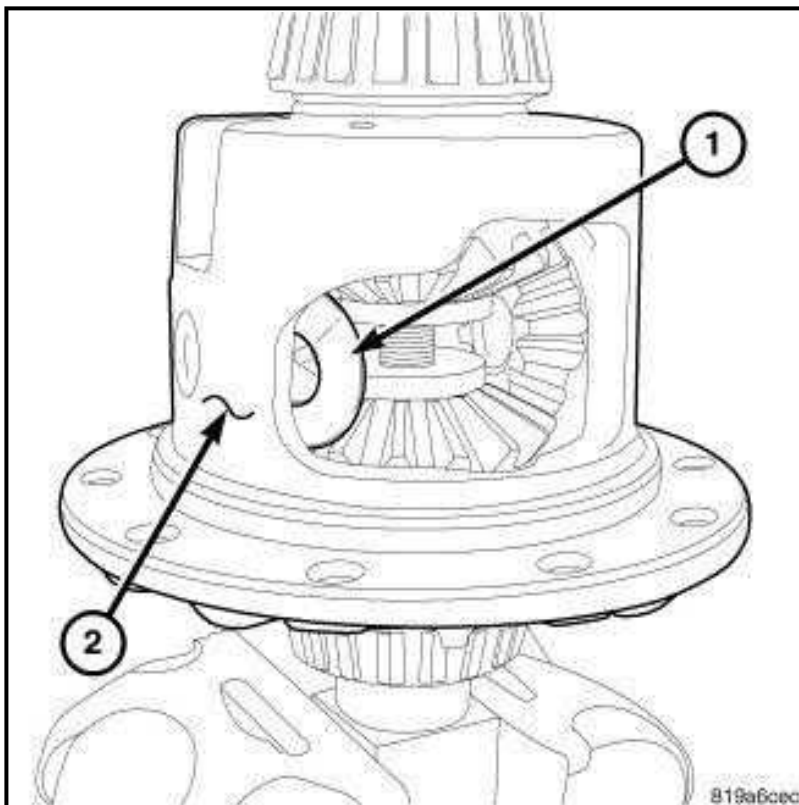


1 - Turning Bar

2 - Differential Case

8. Rotate the differential case with the turning bar from the (special tool #C-4487, Trac-Lok Axle Tool) until the pinion gears align with the mate shaft holes in the differential case.

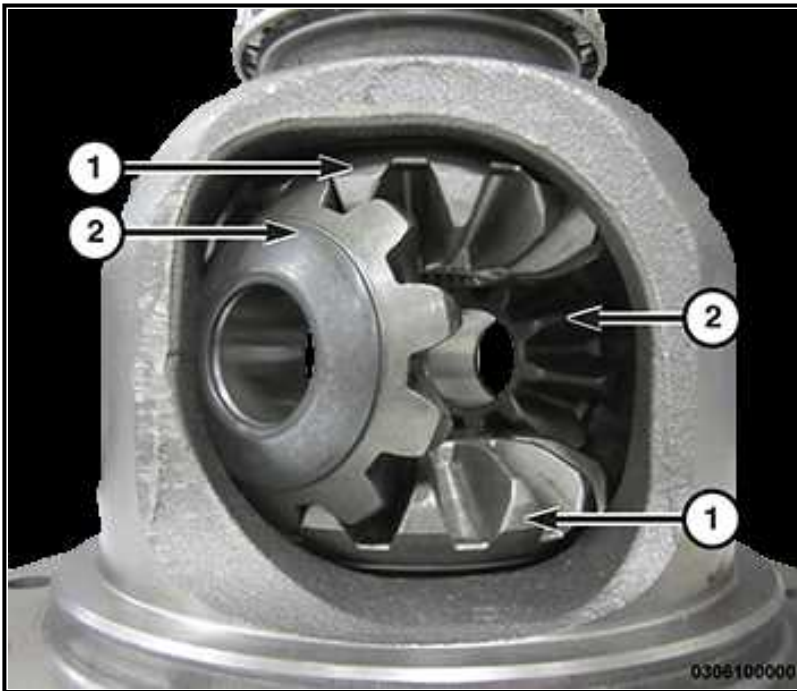
NOTE: Loosen the forcing screw in small increments to relieve the clutch pack tension if the differential case can not be rotated.



1 - Pinion Gear Thrust Washers

2 - Differential Case

9. Install the pinion gear thrust washers between the gear and the differential case. Align the washers with the mate shaft hole in the case.



1 - Differential Side Gears

2 - Differential Pinion Gears

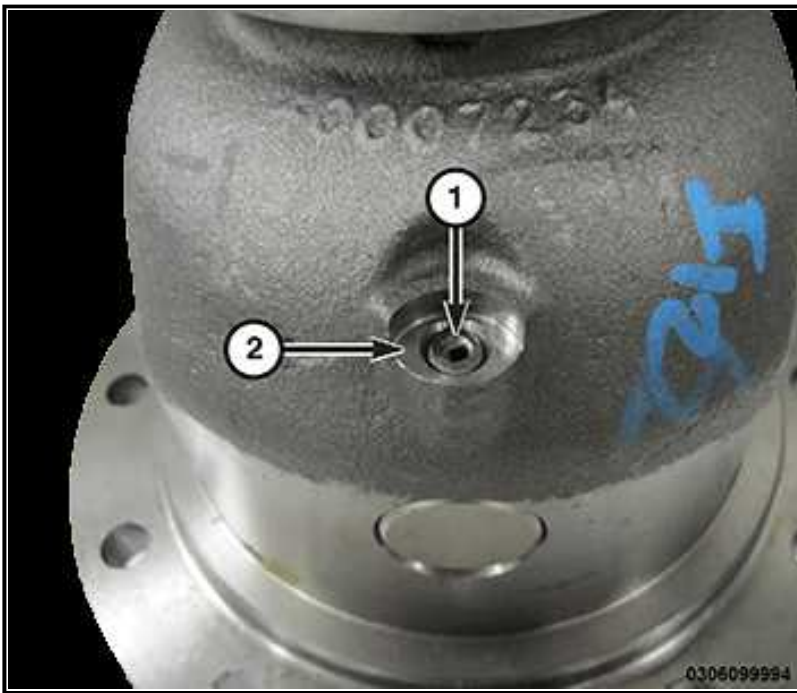
10. Remove the forcing screw upper disc from the side gear.
11. Remove the lower disc from the side gear.



1 - Roll Pin Hole

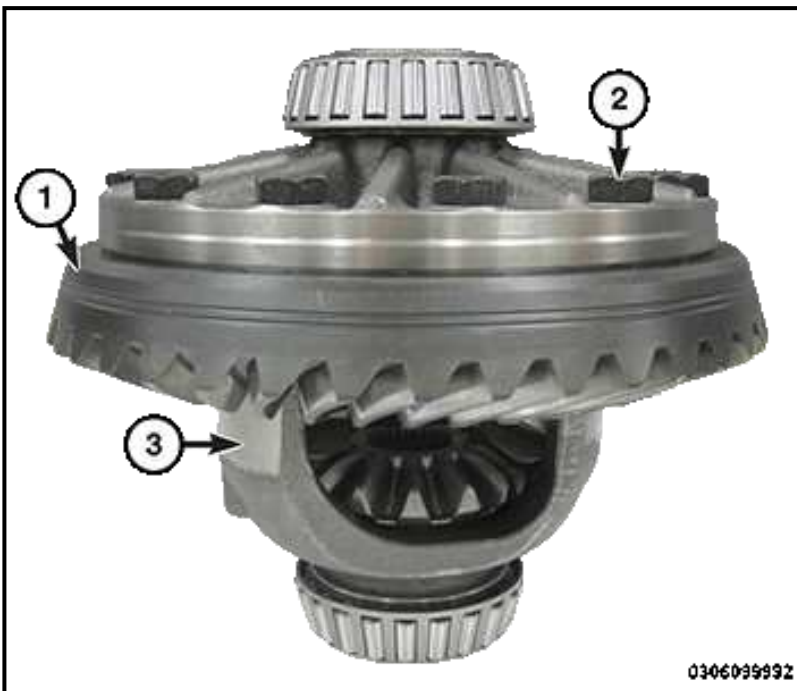
2 - Pinion Mate Shaft

12. Install the pinion mate shaft in the differential case.



- | |
|-----------------------|
| 1 - Roll Pin |
| 2 - Differential Case |

13. Install the pinion mate shaft roll pin.



- | |
|-----------------------|
| 1 - Ring Gear |
| 2 - Ring Gear Bolts |
| 3 - Differential Case |

14. Install the ring gear with **NEW** ring gear bolts to the case assembly and tighten to the proper torque specification.

15. Lubricate all the differential components with gear lubricant.

2021 GENERAL INFORMATION

Differential Cover - Gladiator

REMOVAL AND INSTALLATION

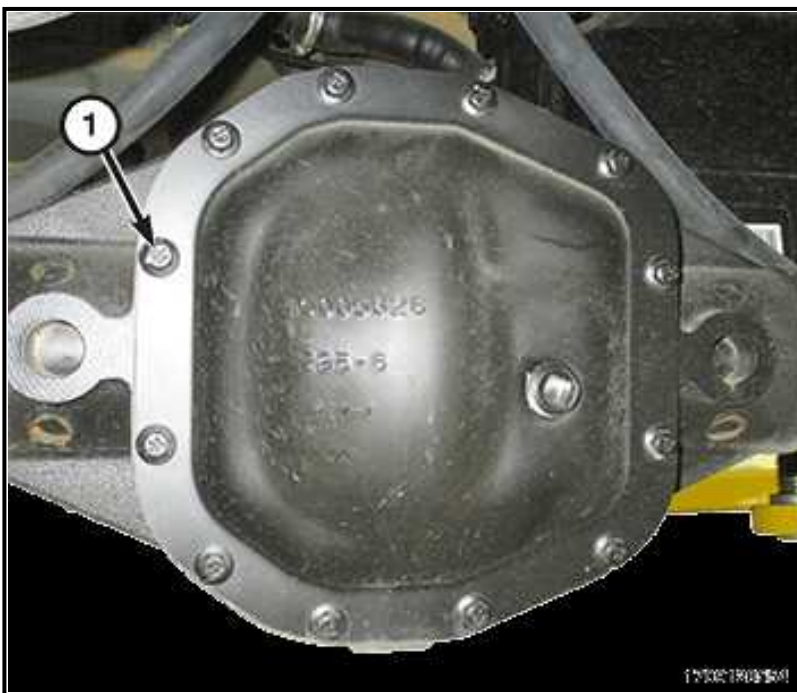
DIFFERENTIAL COVER - M210

REMOVAL

1. Raise and support the vehicle. Refer to [HOISTING, STANDARD PROCEDURE](#) .
2. Remove the differential drain plug located on the side of the axle housing and drain the fluid.
3. Install the differential drain plug.

TORQUE SPECIFICATIONS

4. Remove the differential fill plug.

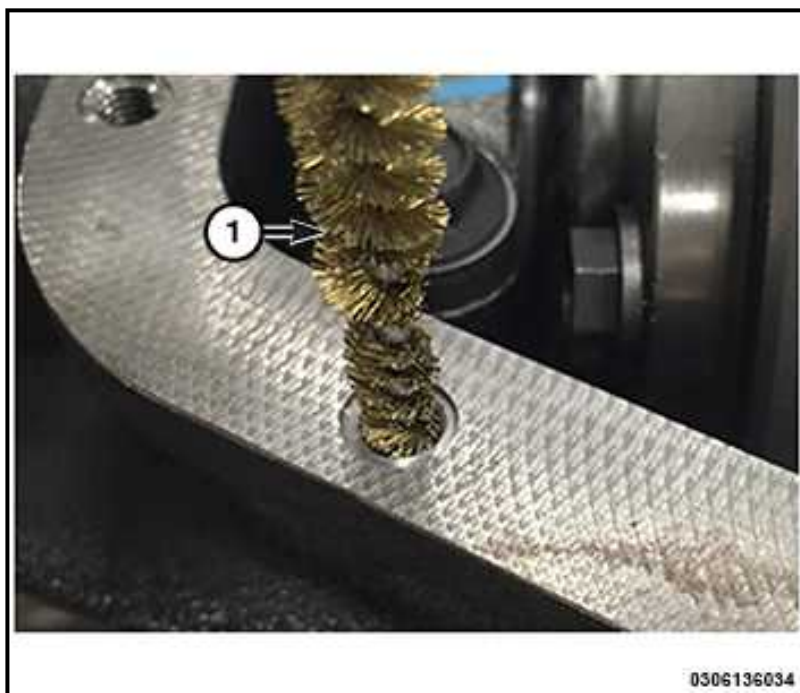


1 - Fill Plug

5. Remove the differential cover bolts.
6. Remove the differential cover.

CLEANING:

- Do not use Scotch-Brite™ or other abrasive surface preparation methods. Clean the surface with brake clean or equivalent alcohol based cleaners.



1 - Copper Brush

- Use a copper brush to remove any Loctite™ out of the carrier bolt holes then use brake clean to clean the bores. Use compressed air to ensure each bolt hole is dry and no brake clean remains.

INSTALLATION

During installation, torque the fasteners to the specifications in the torque table(s) below.

Follow the removal procedure in reverse for general reassembly of the components on the vehicle. The steps listed below are calling out specific procedures that should be followed during installation.

- The differential cover must be torque within 8 minutes to ensure a proper seal of the cover and gasket.
- The differential cover bolts must be tightened in the sequence shown in the torque table below.

TORQUE SPECIFICATIONS

FRONT AXLE - M210

DESCRIPTION	SPECIFICATIONS	COMMENT
Bearing Cap Bolts	108 N.m (80 Ft. Lbs.)	-
Differential Cover Bolts	Torque Procedure: 1. Tighten to 20 N.m (15 Ft. Lbs.) 2. Rotate additional 20B°	Tightening Sequence
Differential Drain Plug	34 N.m (25 Ft. Lbs.)	-
Differential Fill Plug	34 N.m (25 Ft. Lbs.)	-
Front Axle Disconnect Skid Plate Bolts	42 N.m (31 Ft. Lbs.)	-
Front Axle Disconnect Bolts	18 N.m (13 Ft. Lbs.)	Do not reuse these fasteners. If removed, a NEW fastener must be installed and tightened to specifications.
Pinion Flange Nut	217 N.m (160 Ft. Lbs.)	Do not reuse these fasteners. If removed, a NEW fastener must be

DESCRIPTION	SPECIFICATIONS	COMMENT
		installed and tightened to specifications.
Ring Gear Bolts	136 N.m (100 Ft. Lbs.)	Do not reuse these fasteners. If removed, a NEW fastener must be installed and tightened to specifications.

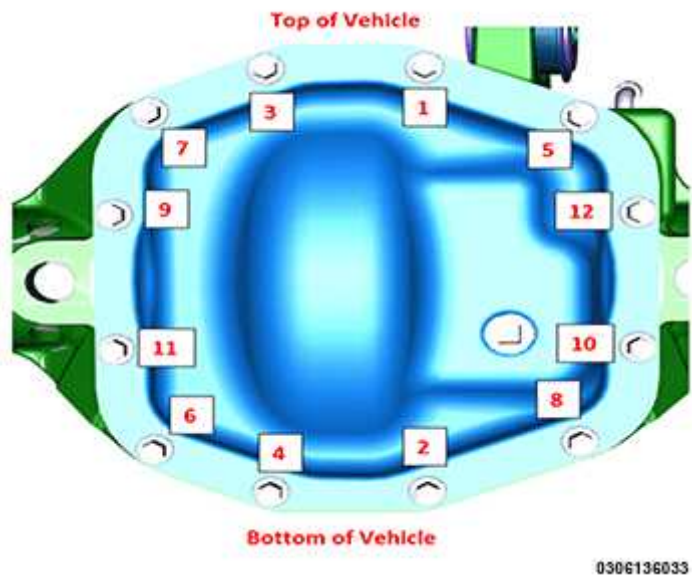
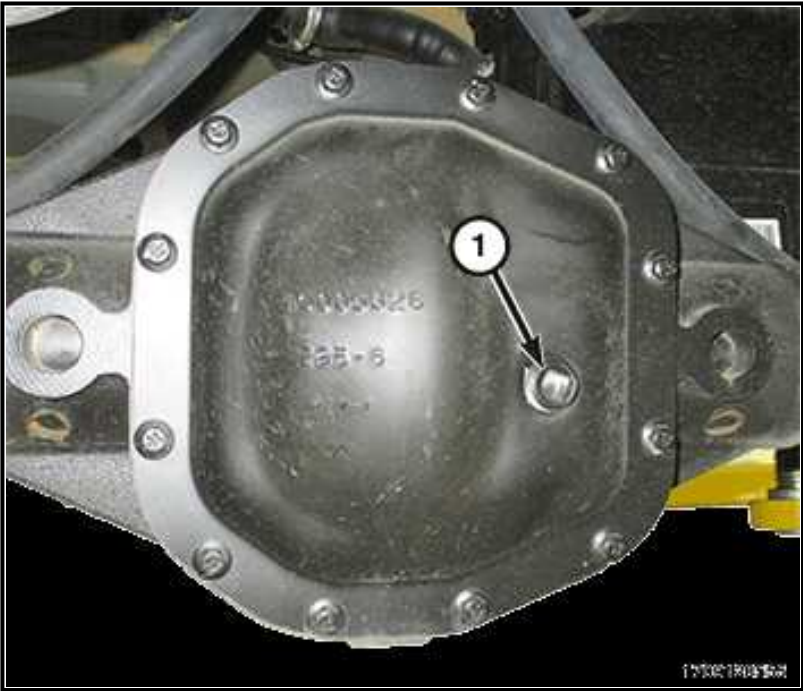


Fig. 1: Differential Cover Bolts Tightening Sequence
 Courtesy of CHRYSLER GROUP, LLC

DIFFERENTIAL COVER - M220

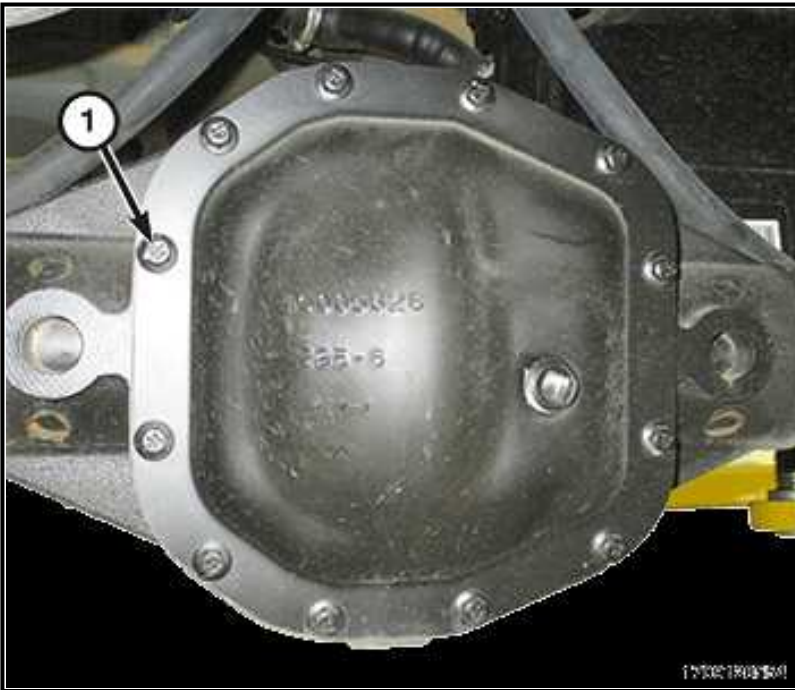
REMOVAL

- 1. Raise and support the vehicle
- Refer to [HOISTING, STANDARD PROCEDURE](#) .



1 - Fill Plug

2. Remove the differential drain plug located on the bottom of the axle housing and drain the fluid.
3. Install the differential drain plug.
4. Install the differential fill plug.

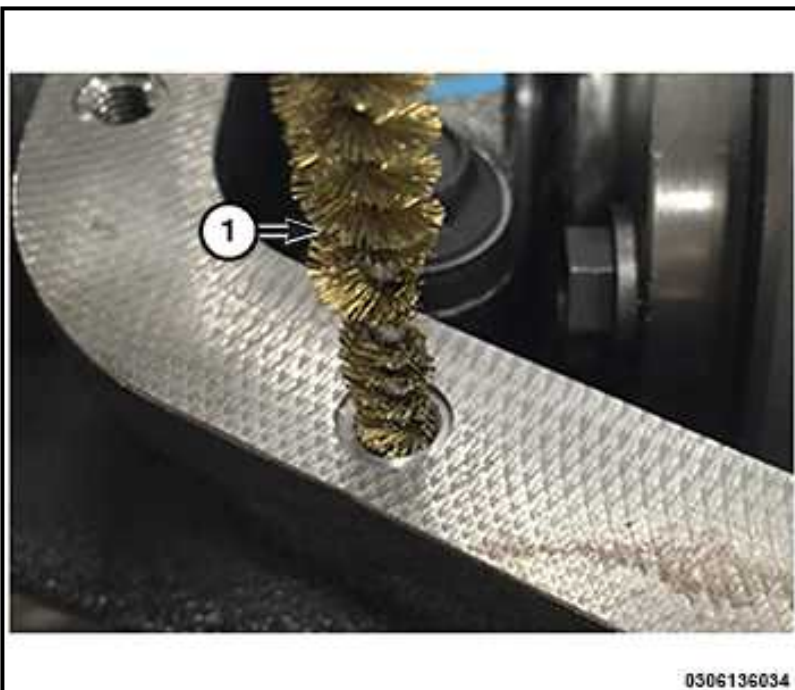


1 - Fill Plug

5. Remove the differential cover bolts.
6. Remove the differential cover.

CLEANING:

- **Do not use Scotch-Brite™ or other abrasive surface preparation methods. Clean the surface with brake clean or equivalent alcohol based cleaners.**



1 - Copper Brush

- Use a copper brush to remove any Loctite™ out of the carrier bolt holes then use brake clean to clean the bores. Use compressed air to ensure each bolt hole is dry and no brake clean remains.

INSTALLATION

During installation, torque the fasteners to the specifications in the torque table(s) below.

Follow the removal procedure in reverse for general reassembly of the components on the vehicle. The steps listed below are calling out specific procedures that should be followed during installation.

- The differential cover must be torque within 8 minutes to ensure a proper seal of the cover and gasket.
- The differential cover bolts must be tightened in the sequence shown in the torque table below.

TORQUE SPECIFICATIONS

REAR AXLE - M220

DESCRIPTION	SPECIFICATIONS	COMMENT
Axle Retainer Nuts	80 N.m (59 Ft. Lbs.)	-
Bearing Cap Bolts	95 N.m (70 Ft. Lbs.)	-
Differential Cover Bolts	41 N.m (30 Ft. Lbs.)	Do not reuse these fasteners. If removed, a NEW fastener must be installed and tightened to specifications.
Drain Plug	34 N.m (25 Ft. Lbs.)	-
Fill Plug	34 N.m (25 Ft. Lbs.)	-
Pinion Nut	488 N.m (360 Ft. Lbs.)	Do not reuse these fasteners. If removed, a NEW fastener must be installed and tightened to specifications.
Ring Gear Bolts	Torque Procedure: 1. Tighten to 100 N.m (74 Ft. Lbs.) 2. Rotate additional 57.5B°	Do not reuse these fasteners. If removed, a NEW fastener must be installed and tightened to specifications.
Rear Axle Vent Fitting	22 N.m (17 Ft. Lbs.)	-

2021 GENERAL INFORMATION

Differential Diagnosis And Testing - Gladiator

DIAGNOSIS AND TESTING

DIAGNOSIS AND TESTING - DIFFERENTIAL TRAC-LOKB®

A common problem of the Trac-LokB® differential is a chatter noise when turning corners. Before removing the unit for repair, drain, flush and refill the axle with the specified lubricant. Add a container of MoparB® Limited Slip Additive after repair service or during a lubricant change.

After changing the lubricant, drive the vehicle and make 10 to 12 slow, figure-eight turns. This maneuver will pump lubricant through the clutches. This will correct the condition in most instances. If the chatter persists, clutch damage could have occurred.

The differential can be tested without removing the differential case by measuring rotating torque. Verify brakes are not dragging during this measurement.

1. Place blocks in the front and rear of both front wheels.
2. Raise one rear wheel until it is completely off the ground.
3. Engine off, transmission in neutral, and parking brake off.
4. Remove tire and wheel assembly and install Torque Check Tool (special tool #6790, Tool, Trac-Lok Torque) (1) or equivalent tool to studs.
5. Use torque wrench on torque check tool to rotate wheel and read rotating torque.
6. If rotating torque is less than 41 N.m (30 ft. lbs.) or more than 271 N.m (200 ft. lbs.) on either wheel the unit must be replaced.

DIAGNOSIS AND TESTING - DIFFERENTIAL - TRU-LOK

The electronic control module for the electronically locking differentials detects faults from input signal/messages, sensors, solenoids, and drivers/relays and report the corresponding Diagnostic Trouble Code (DTC).

The following description outlines the lighting strategy for the axle lock switch:

The FRONT AXLE LED will:

- Turn ON SOLID when the front axle is locked
- Turn ON BLINKING when the front axle is attempting to lock
- Turn ON BLINKING when a lock front axle request is received but conditions to lock are not correct
- Turn OFF when the axle is UNLOCKED
- Turn ON FAST BLINKING when there is a fault detected for the front axle

The REAR AXLE LED will:

- Turn ON SOLID when the rear axle is locked
- Turn ON BLINKING when the rear axle is attempting to lock
- Turn ON BLINKING when a lock rear axle request is received but conditions to lock are not correct
- Turn OFF when the axle is UNLOCKED
- Turn ON FAST BLINKING when there is a fault detected for the rear axle

INDICATOR SWITCH

Ohmmeter set on continuity: One lead on each connector terminal

- Switch Plunger IN Locker Not Engaged - No Continuity
 - Switch Plunger OUT Locker Engaged - Continuity
-

2021 GENERAL INFORMATION

Differential Gear, Ring and Pinion - Gladiator

REMOVAL AND INSTALLATION

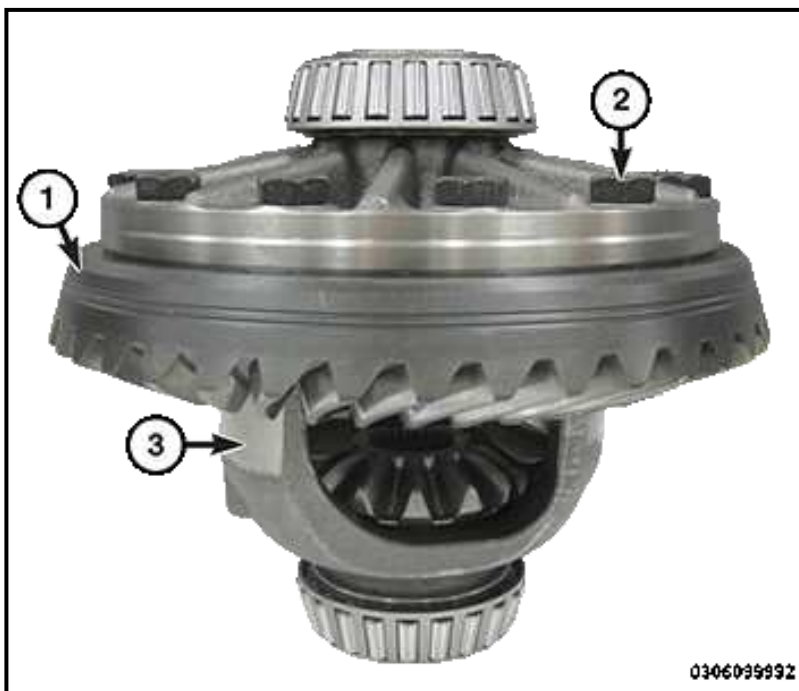
RING AND PINION GEARS - M210 FRONT AXLE

REMOVAL

1. Remove the differential case from the differential housing

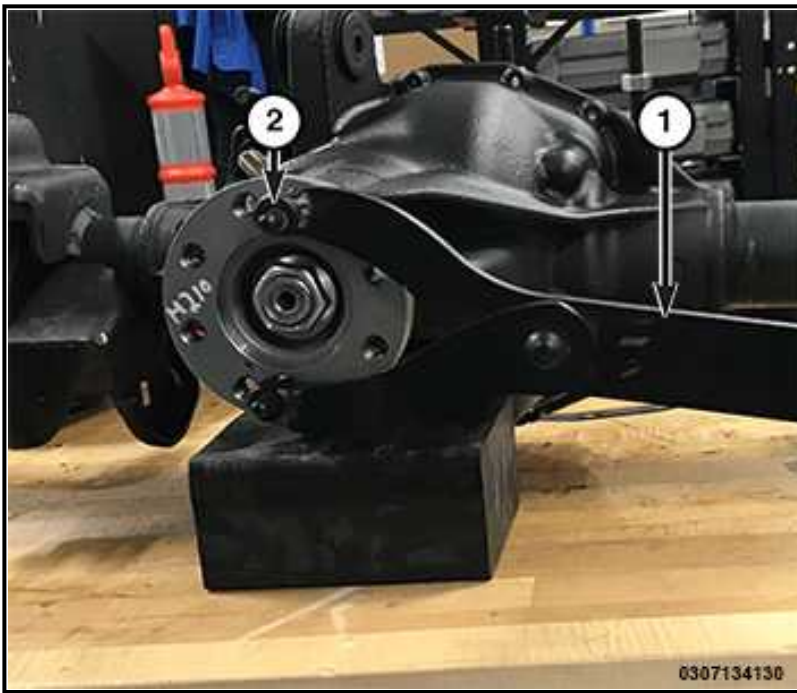
Refer to [REMOVAL AND INSTALLATION](#) .

NOTE: The ring and pinion gears are serviced as a matched set. Never replace one gear without replacing the other gear.



1 - Ring Gear
2 - Ring Gear Bolts
3 - Differential Case

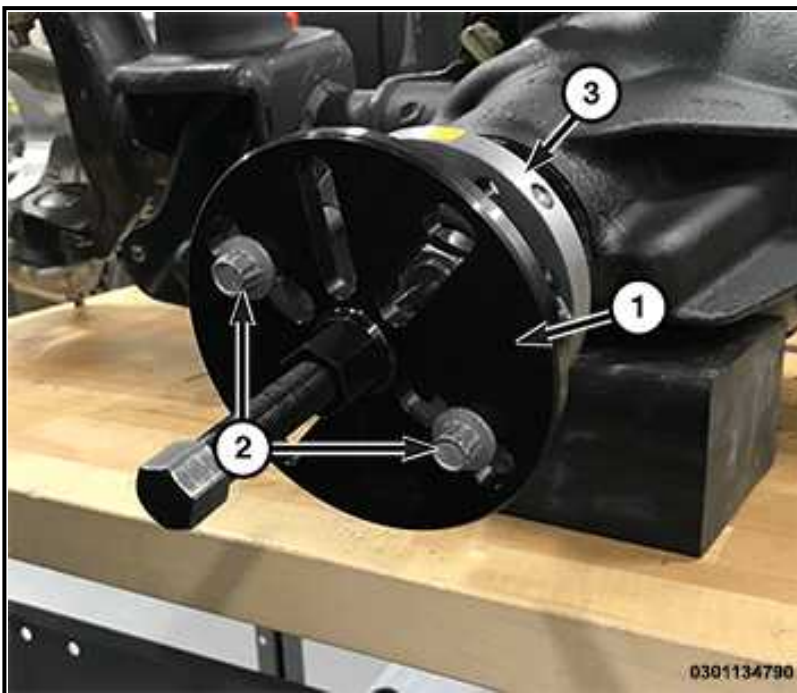
2. If equipped, remove the TRU-LOK actuator. Refer to [REMOVAL AND INSTALLATION](#) .
3. Remove the ring gear bolts and remove the ring gear from the differential case.
4. Remove the TRU-LOK indicator switch from the differential housing. Refer to [REMOVAL AND INSTALLATION](#) .



1 - Flange Holder Tool

2 - Pinion Flange

5. Hold the pinion flange using the (special tool #C-3281, Holder, Flange) and remove the pinion nut.



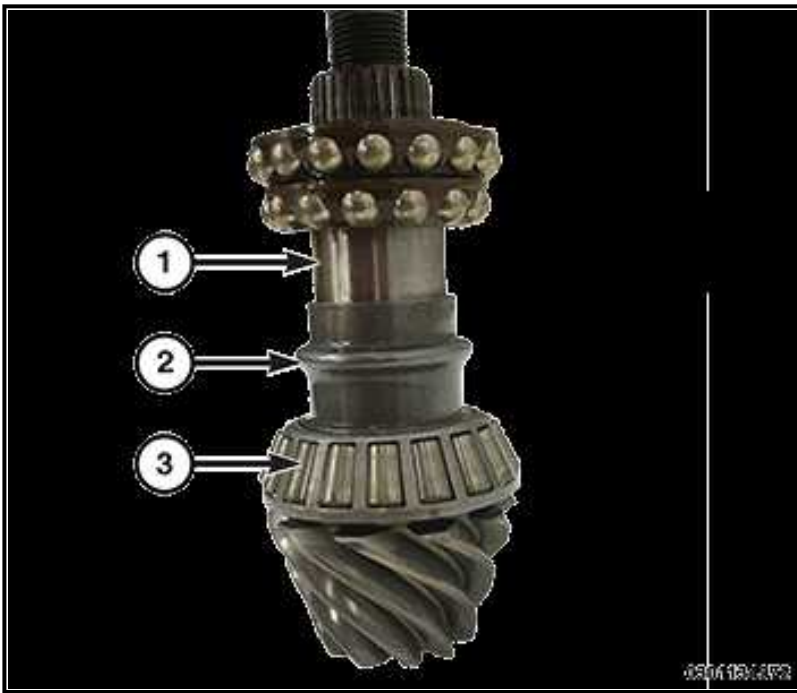
1 - Companion Flange Puller

2 - Driveshaft Bolts

3 - Pinion Flange

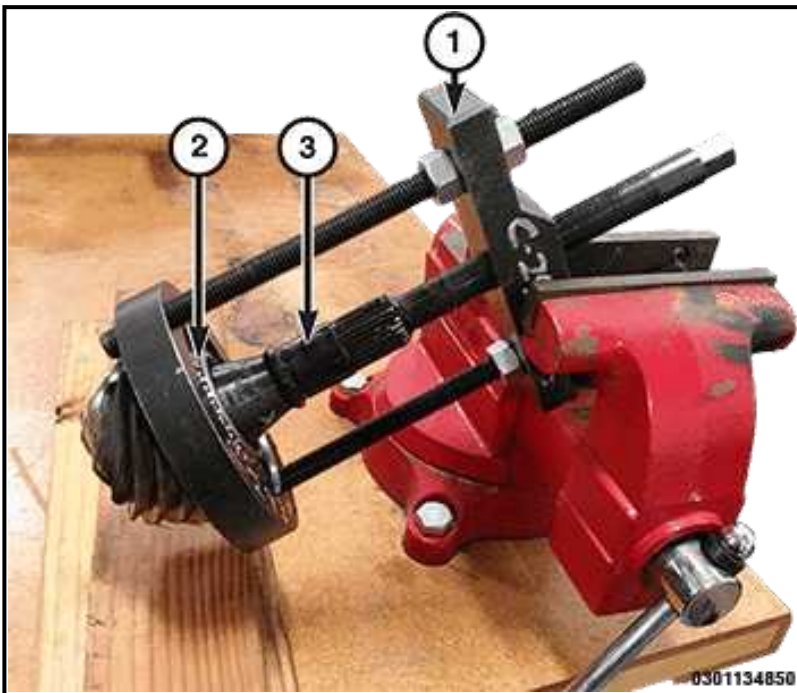
6. Remove the pinion flange using the (special tool #C-452, Puller, Companion Flange).

7. Remove the pinion gear from the axle housing with dead blow hammer.



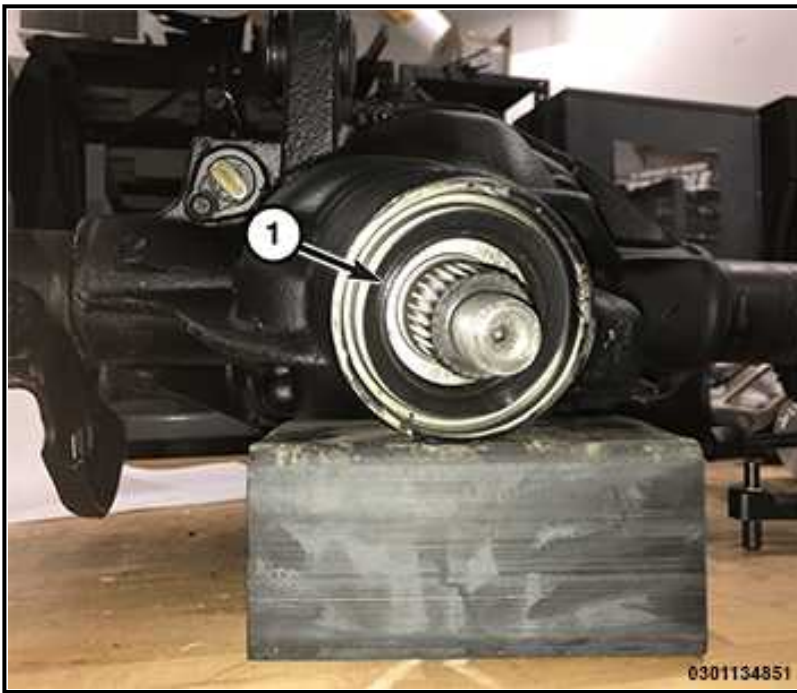
1 - Pinion Gear Shaft
2 - Collapsible Spacer
3 - Rear Pinion Bearing

8. Remove the collapsible spacer from the pinion gear shaft.



1 - Puller Press
2 - Pinion Shaft
3 - Rear Pinion Bearing

9. Remove the rear pinion bearing from the pinion shaft using the (special tool #C-293-PA, Puller, Press) and (special tool #C-293-47, Block Set, Puller).



1 - Pinion Seal

10. Remove the pinion seal.

NOTE: Differential housing shown with pinion gear installed, pinion gear will have been removed prior to this step.



1 - Front Pinion Bearing

2 - Pinion Shaft

11. Remove the front pinion bearing.

NOTE: Differential housing shown with pinion gear installed, pinion gear will have been removed prior to this step.

12. Remove the front pinion bearing cup using a hammer and a brass drift.

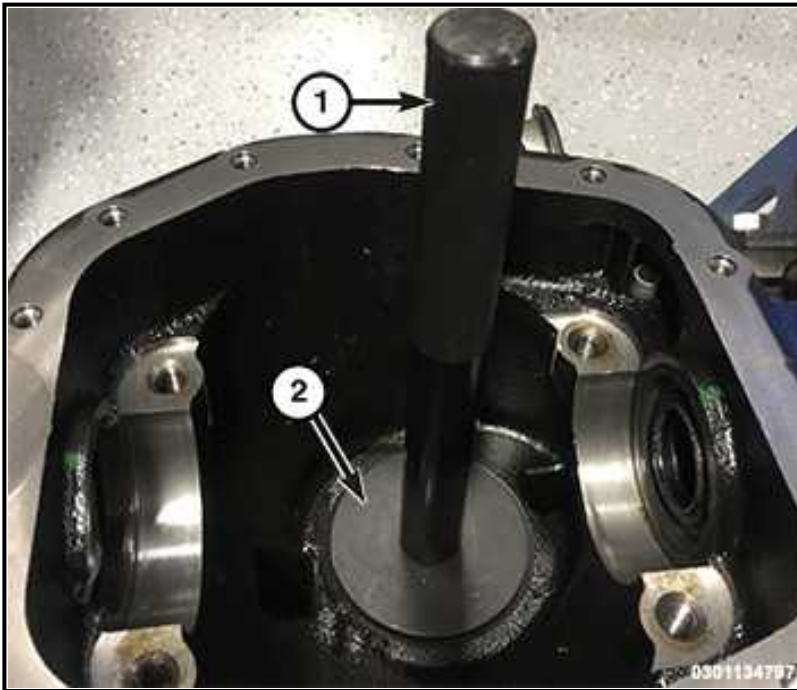
13. Remove the rear pinion bearing cup using a hammer and a brass drift.

14. Remove the selectable washer from under the rear bearing cup.

INSTALLATION

During installation, torque the fasteners to the specifications in the torque table(s) below.

1. Install the selectable washer in the differential housing before installing the rear pinion bearing cup.



1 - Driver Handle
2 - Bearing Cup Installer

2. Install the rear pinion bearing cup using the (special tool #D-111, Installer, Bearing Cup) and the (special tool #C-4171, Driver Handle, Universal).



1 - Bearing Cup Installer
2 - Driver Handle

3. Install the front pinion bearing cup using the (special tool #8960, Installer, Bearing Cup) and the (special tool #C-4171, Driver Handle, Universal).

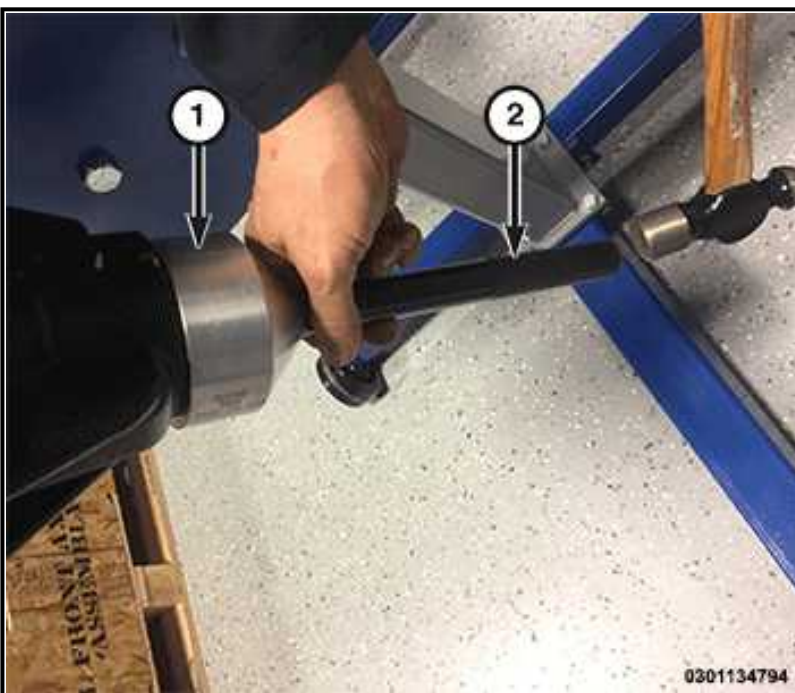


1 - Front Pinion Bearing

2 - Pinion Shaft

4. Install the pinion front bearing.

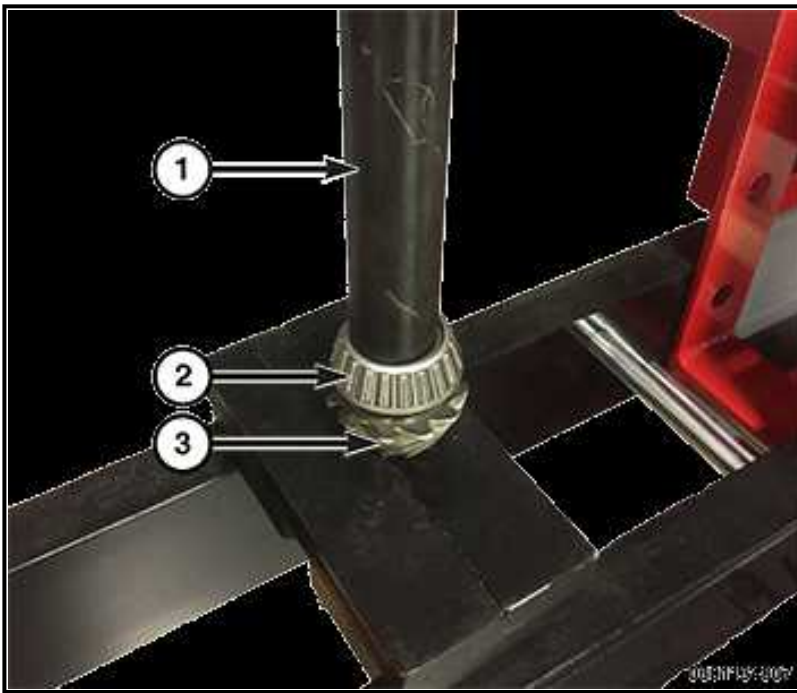
NOTE: Differential housing shown with pinion gear installed, pinion gear will not have been installed prior to this step.



1 - Seal Installer

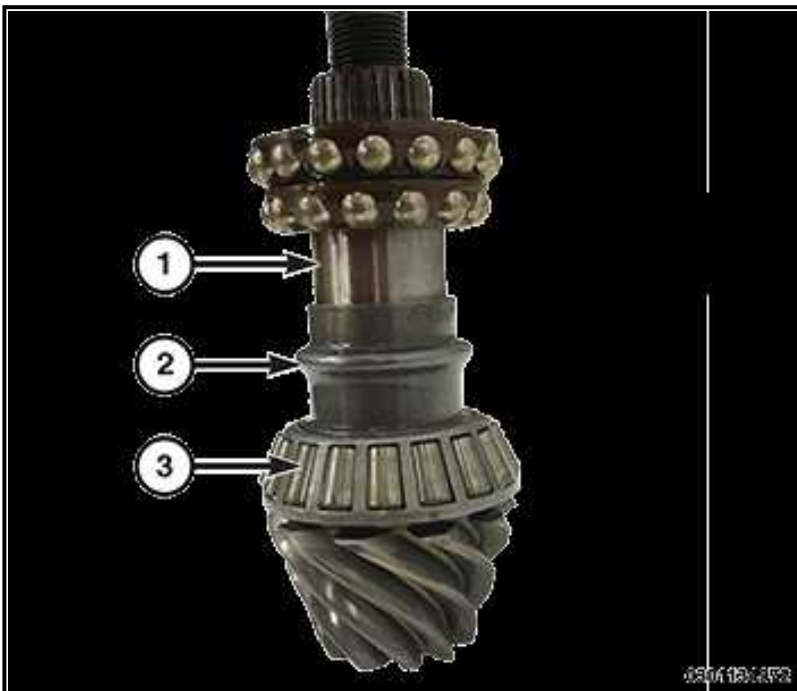
2 - Driver Handle

5. Apply a light coating of gear lubricant on the pinion seal lip. Install the pinion seal using the (special tool #9684, Installer, Seal) and the (special tool #C-4171, Driver Handle, Universal).



1 - Bearing Installer
2 - Rear Pinion Bearing
3 - Pinion Gear

6. Install the rear pinion bearing on the pinion gear using the (special tool #C-3095-A, Installer, Bearing) and a press.



1 - Pinion Gear Shaft
2 - Collapsible Spacer
3 - Rear Pinion Bearing

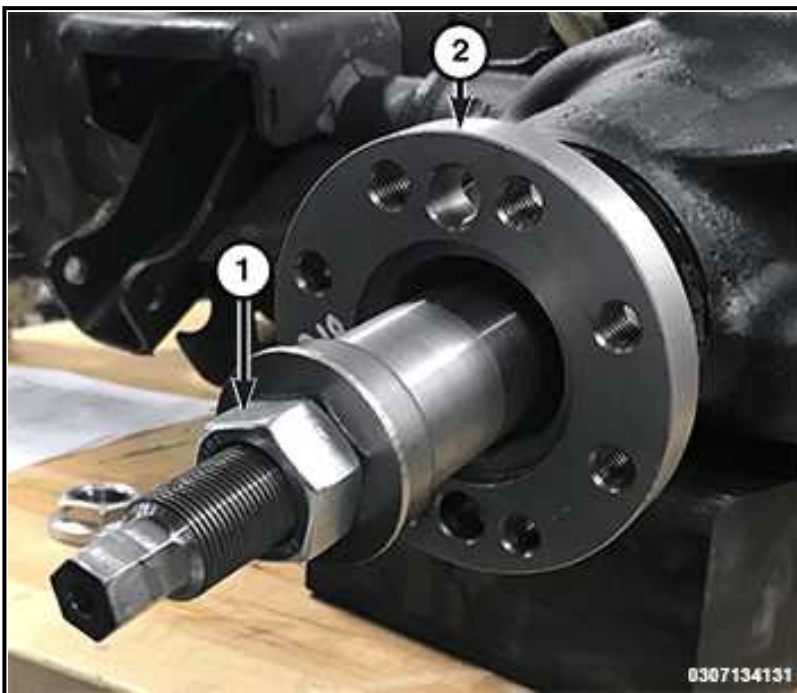
7. Install a **NEW** collapsible spacer on the pinion gear shaft.



1 - Front Pinion Bearing

2 - Pinion Shaft

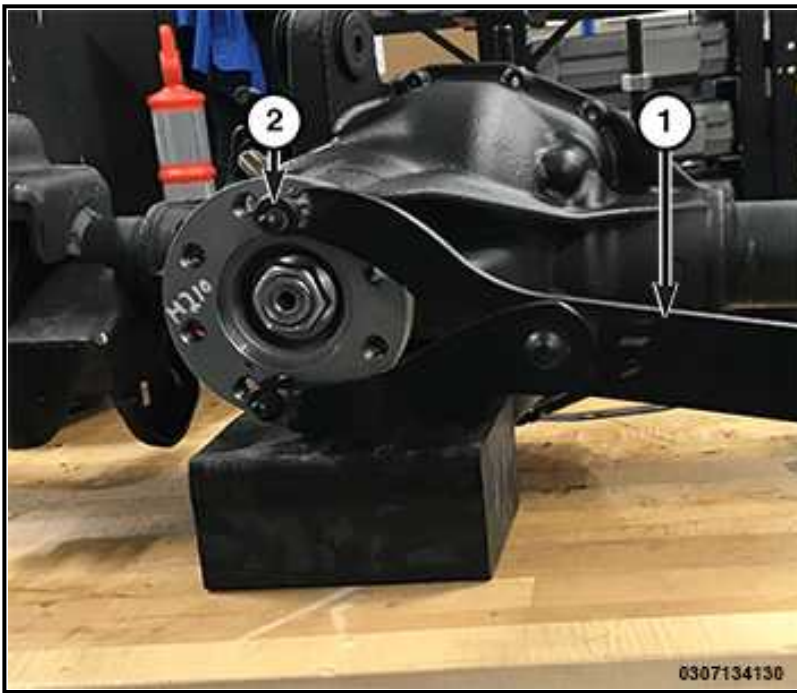
8. Install the pinion gear through the axle housing and front pinion bearing.



1 - Pinion Flange

2 - Pinion Flange Installer

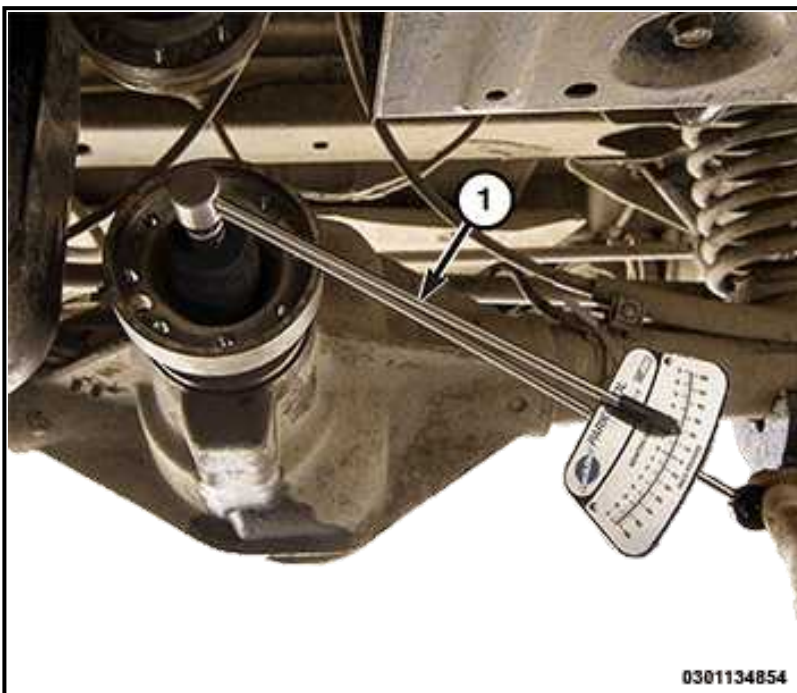
9. Install the pinion flange using the (special tool #2054200030, Installer, Pinion Flange).



1 - Flange Holder Tool

2 - Pinion Flange

10. Install a **NEW** pinion flange nut on the pinion gear. Hold the pinion flange using the (special tool #C-3281, Holder, Flange) and tighten nut to the proper torque specification.

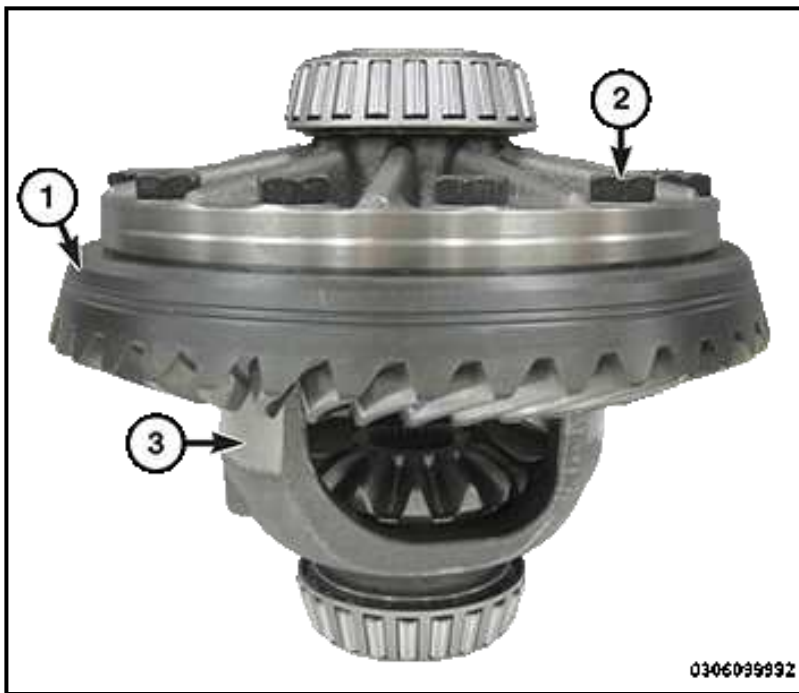


1 - Inch Pound Torque Wrench

11. Measure Pinion Torque To Rotate (PTTR) after each 6.8 N.m (5 Ft. Lbs.) increment with an inch pound torque wrench.

PTTR is:

- **New Bearings:** 1.57 - 2.92 N.m (14 - 26 In. Lbs.)



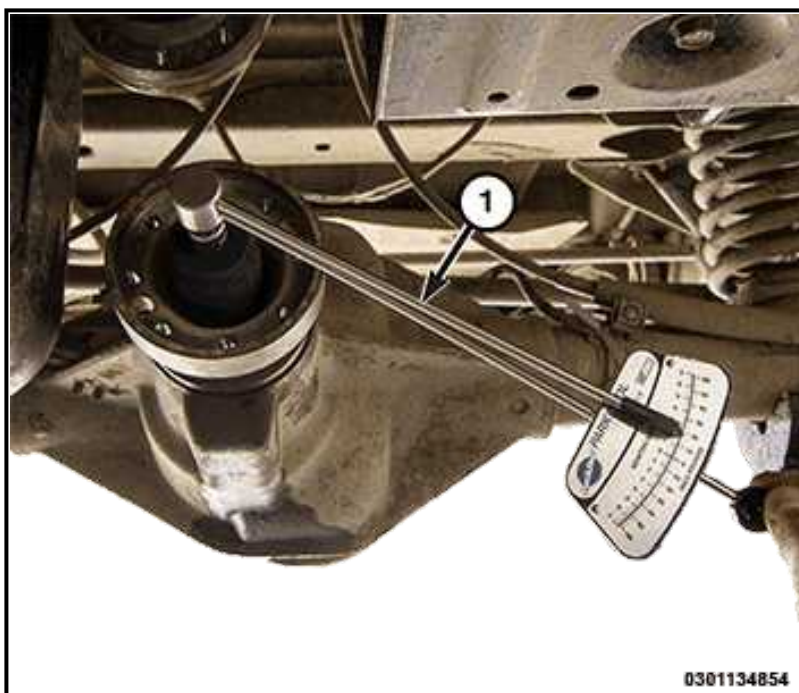
1 - Ring Gear
2 - Ring Gear Bolts
3 - Differential Case

12. Install the ring gear with **NEW** ring gear bolts and alternately tighten to the proper torque specification.

CAUTION: Never reuse the ring gear bolts. Failure to follow these instruction may result in damage.

13. Install the Tru-Lok indicator switch into the differential housing. Refer to [REMOVAL AND INSTALLATION](#) .

14. Install the differential case into the axle housing. Refer to [REMOVAL AND INSTALLATION](#) .



1 - Inch Pound Torque Wrench

15. Measure differential Total Torque To Rotate (TTTR) with an inch pound torque wrench before installing the axle shaft. This will verify differential bearing preload.

Total Torque To Rotate is: Pinion Torque To Rotate plus 0.45 - 0.95 N.m (4 - 8 In. Lbs.).

16. Fill the differential with the proper fluid. Refer to **CAPACITIES AND RECOMMENDED FLUIDS, SPECIFICATIONS**.

TORQUE SPECIFICATIONS

FRONT AXLE - M210

DESCRIPTION	SPECIFICATIONS	COMMENT
Bearing Cap Bolts	108 N.m (80 Ft. Lbs.)	-
Differential Cover Bolts	Torque Procedure: 1. Tighten to 20 N.m (15 Ft. Lbs.) 2. Rotate additional 20B°	Tightening Sequence
Differential Drain Plug	34 N.m (25 Ft. Lbs.)	-
Differential Fill Plug	34 N.m (25 Ft. Lbs.)	-
Front Axle Disconnect Skid Plate Bolts	42 N.m (31 Ft. Lbs.)	-
Front Axle Disconnect Bolts	18 N.m (13 Ft. Lbs.)	Do not reuse these fasteners. If removed, a NEW fastener must be installed and tightened to specifications.
Pinion Flange Nut	217 N.m (160 Ft. Lbs.)	Do not reuse these fasteners. If removed, a NEW fastener must be installed and tightened to specifications.
Ring Gear Bolts	136 N.m (100 Ft. Lbs.)	Do not reuse these fasteners. If removed, a NEW fastener must be installed and tightened to specifications.

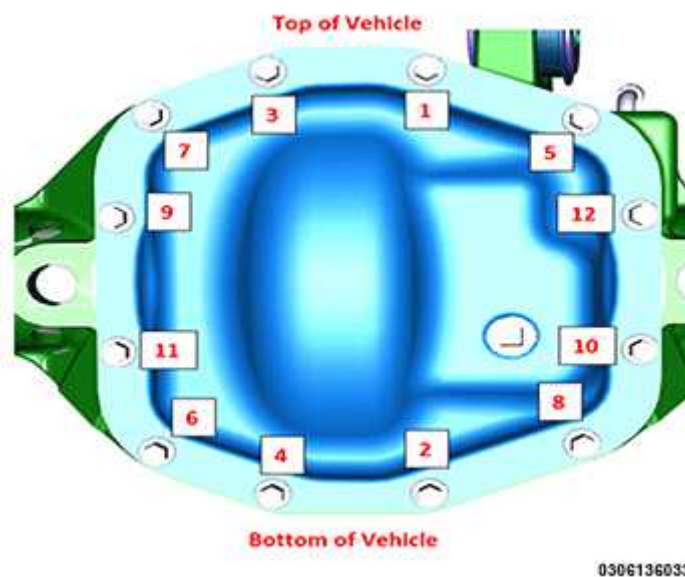


Fig. 1: Differential Cover Bolts Tightening Sequence

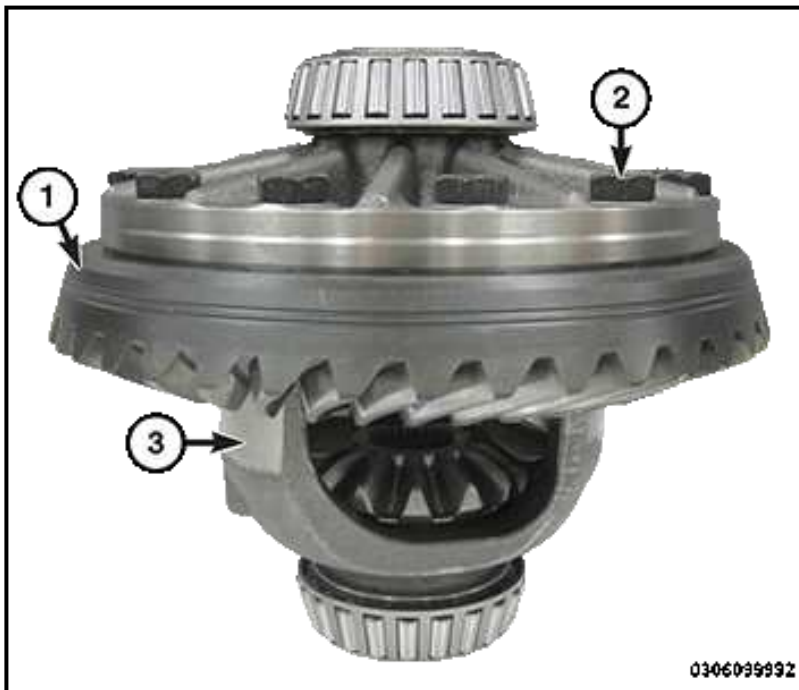
Courtesy of CHRYSLER GROUP, LLC

RING AND PINION GEARS - M220 REAR AXLE

REMOVAL

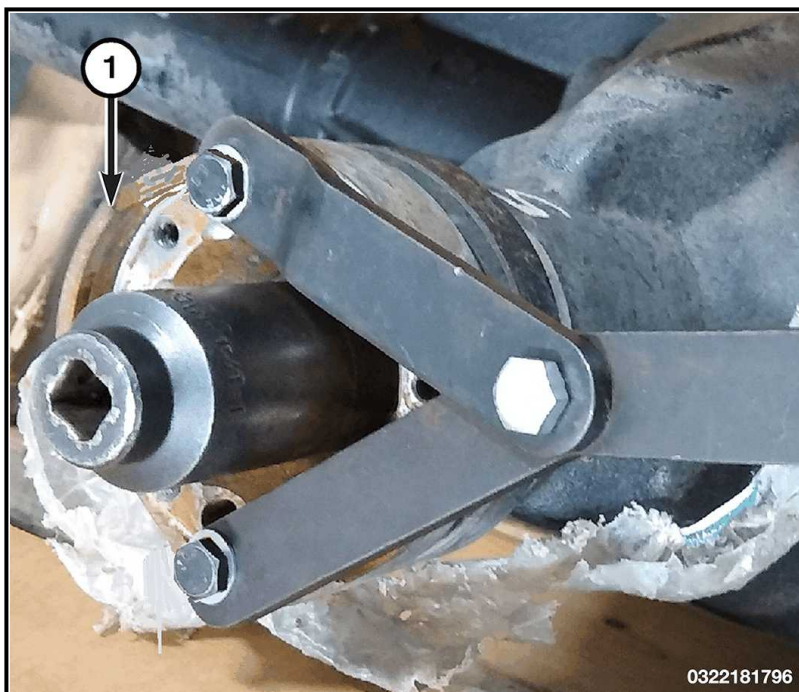
NOTE: The ring gear and pinion are serviced as a matched set. Never replace one without replacing the other.

1. Remove the differential case assembly from the differential housing. Refer to [REMOVAL AND INSTALLATION](#).
2. If equipped, remove the TRU-LOK actuator. Refer to [REMOVAL AND INSTALLATION](#).



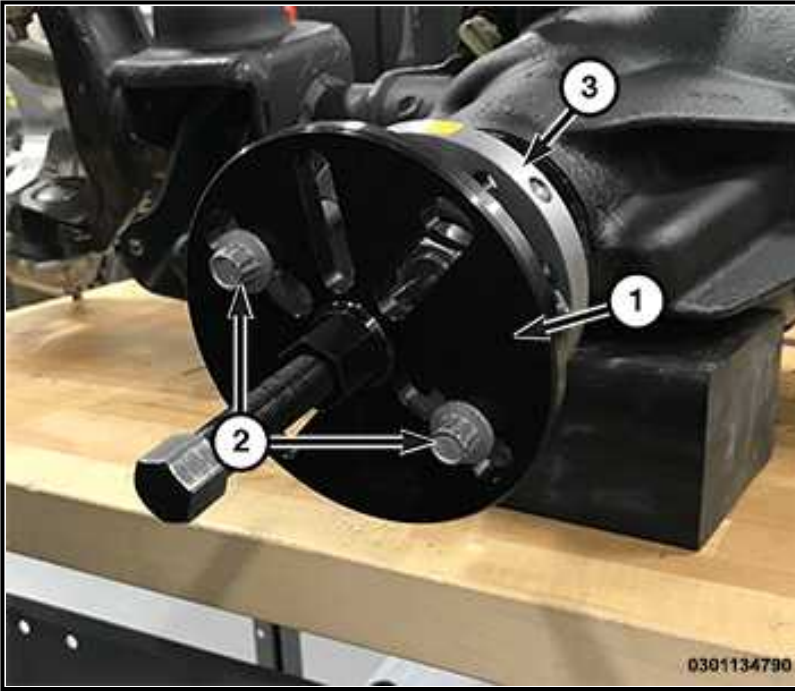
- | |
|-----------------------|
| 1 - Ring Gear |
| 2 - Ring Gear Bolts |
| 3 - Differential Case |

3. Remove the ring gear bolts and the ring gear from the differential case.



- | |
|-------------------|
| 1 - Pinion Flange |
|-------------------|

4. Hold the pinion flange using (special tool #6958, Wrench, Spanner) and remove the pinion nut and washer.

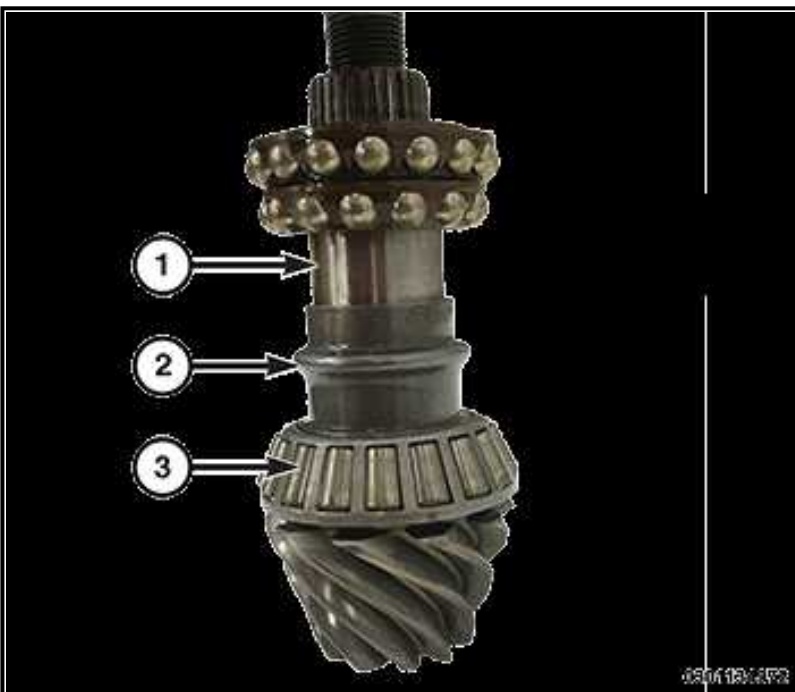


1 - Companion Flange Puller

2 - Driveshaft Bolts

3 - Pinion Flange

5. Remove the pinion flange using the (special tool #8992, Remover, Pinion Flange).
6. Remove the pinion gear from the housing using a dead blow hammer.

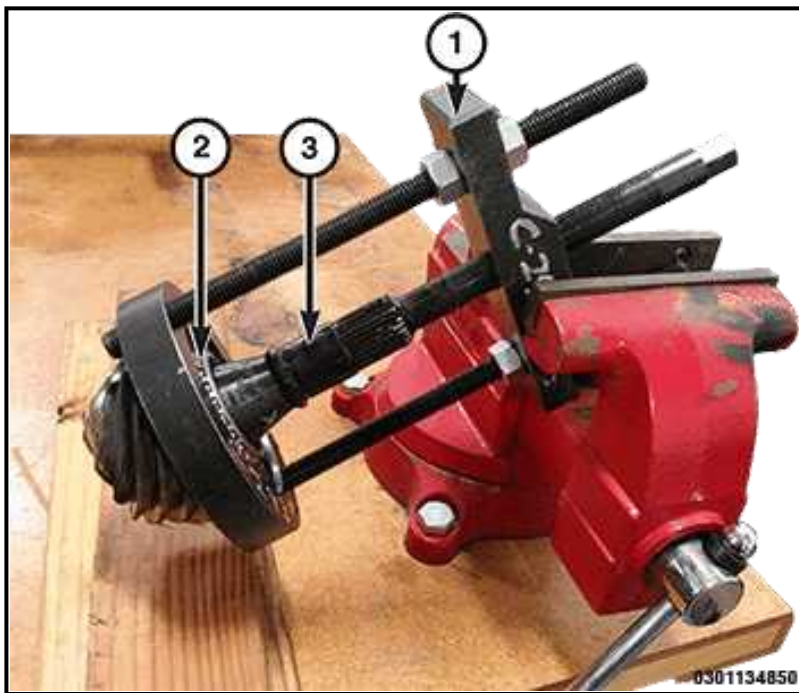


1 - Pinion Gear Shaft

2 - Collapsible Spacer

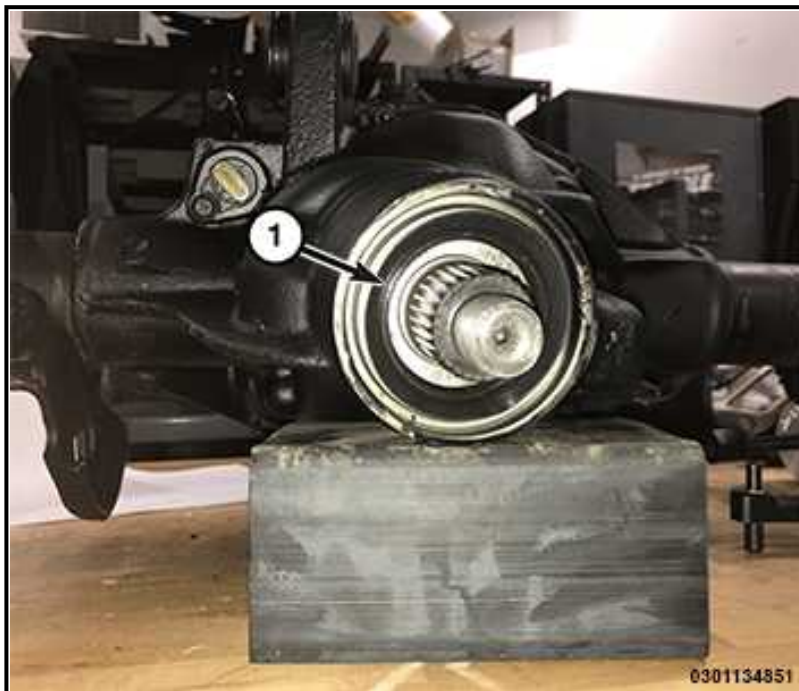
3 - Rear Pinion Bearing

7. Remove the collapsible spacer from the pinion gear shaft.



- | |
|-------------------------|
| 1 - Puller Press |
| 2 - Pinion Shaft |
| 3 - Rear Pinion Bearing |

8. Remove the rear pinion bearing from pinion gear shaft using the (special tool #C-293-PA, Puller, Press) and (special tool #C-293-37, Block Set, Puller).



- 1 - Pinion Seal

9. Remove the pinion seal.



1 - Front Pinion Bearing
2 - Pinion Shaft

10. Remove the front pinion bearing.

NOTE: Pinion gear shaft shown, pinion gear will have been removed in previous steps.

11. Remove the front and rear pinion bearing cups from the differential housing using a brass drift punch.

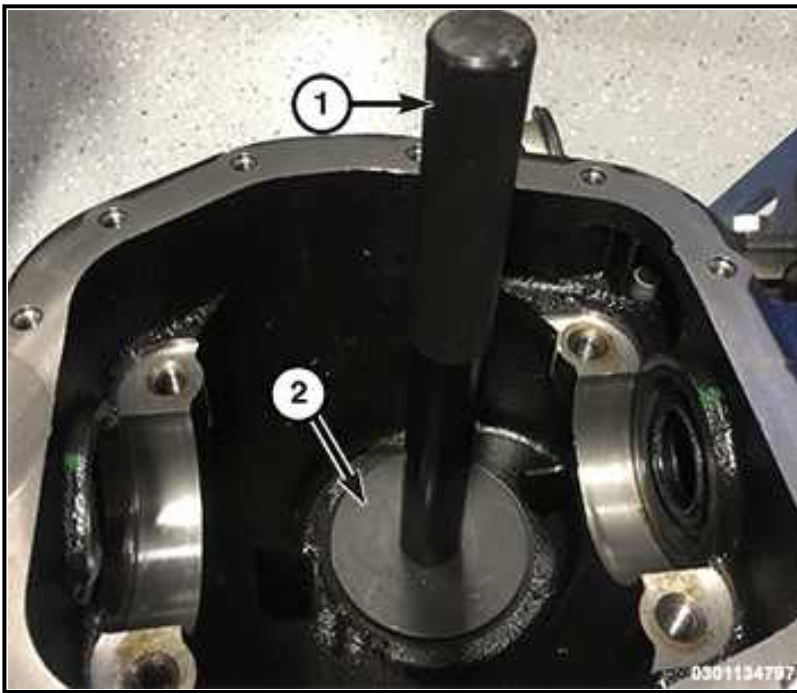
12. Remove the selectable washer from behind the rear pinion bearing cup.

INSTALLATION

During installation, torque the fasteners to the specifications in the torque table(s) below.

NOTE: If replacing the ring and pinion gears perform the pinion height, differential bearing preload, the backlash and gear contact adjustment procedures. Refer to **ADJUSTMENTS**.

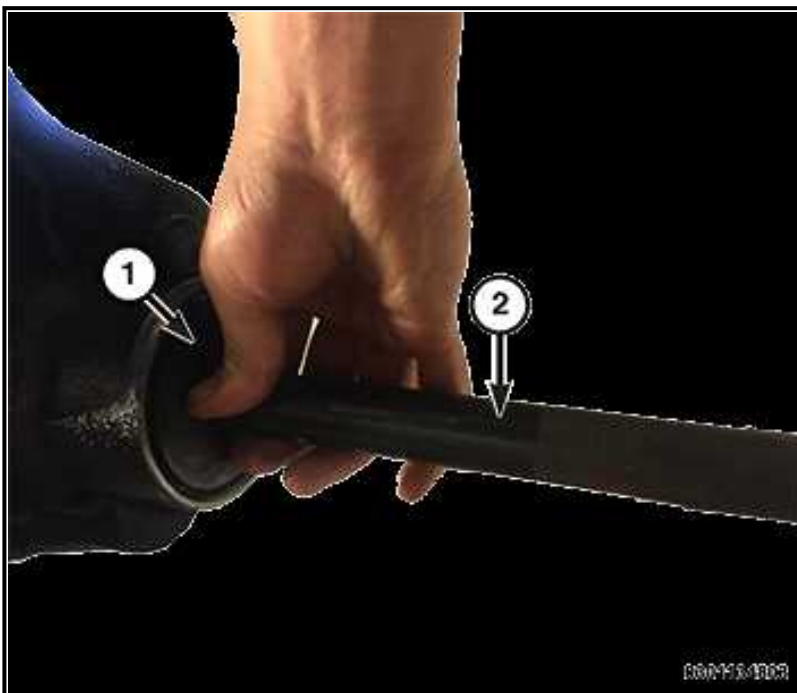
1. Install the selectable washer into the case before installing the rear bearing cup.



1 - Driver Handle

2 - Bearing Cup Installer

2. Install the rear bearing cup using the (special tool #D-111, Installer, Bearing Cup) and (special tool #C-4171, Driver Handle, Universal).



1 - Bearing Cup Installer

2 - Driver Handle

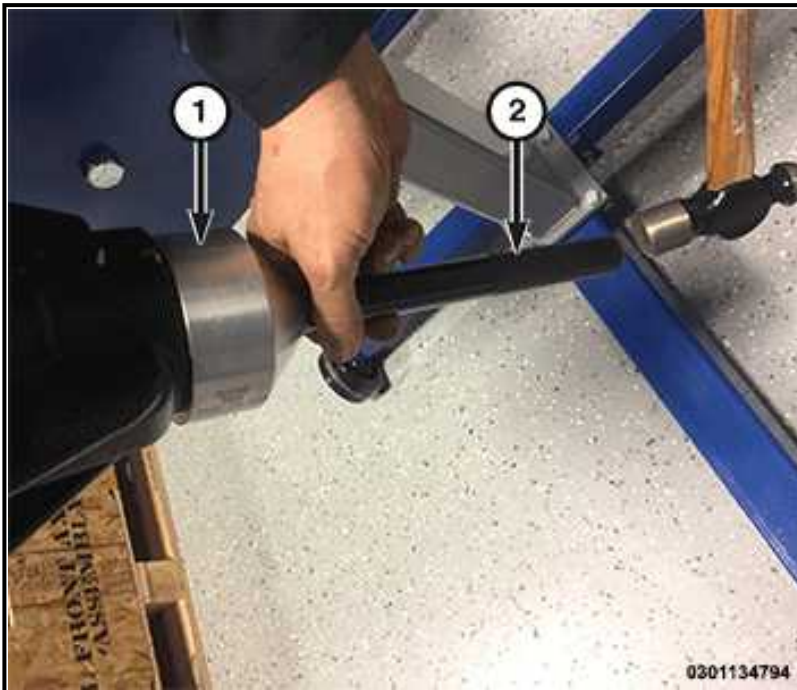
3. Install the front bearing cup using the (special tool #8960, Installer, Bearing Cup) and (special tool #C-4171, Driver Handle, Universal).



1 - Front Pinion Bearing

2 - Pinion Shaft

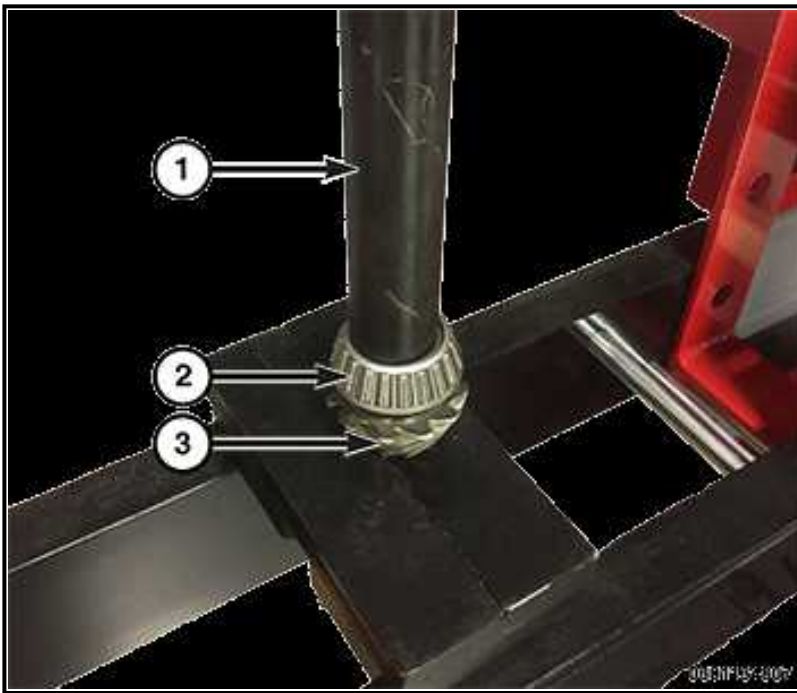
4. Install the front pinion bearing.



1 - Seal Installer

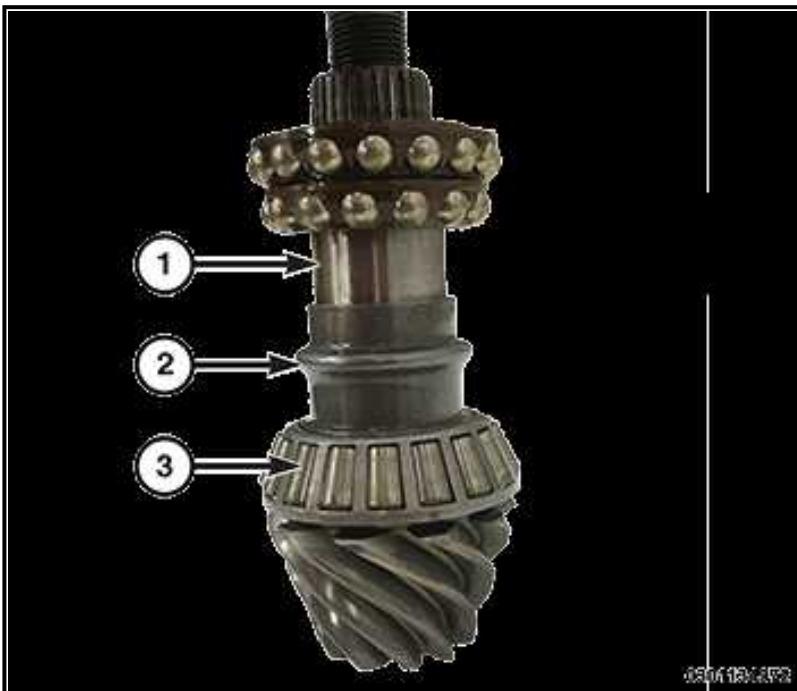
2 - Driver Handle

5. Apply a light coating of gear lubricant on the lip of the pinion seal. Install the pinion seal using the (special tool #9684, Installer, Seal) and (special tool #C-4171, Driver Handle, Universal).



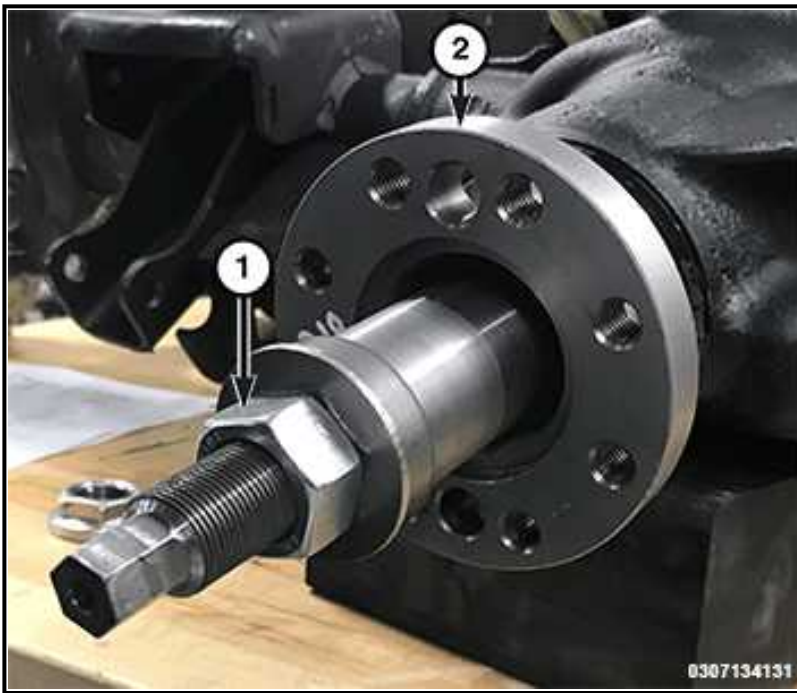
1 - Bearing Installer
2 - Rear Pinion Bearing
3 - Pinion Gear

6. Install the rear pinion bearing on the pinion gear using the (special tool #C-3095-A, Installer, Bearing) and a press.



1 - Pinion Gear Shaft
2 - Collapsible Spacer
3 - Rear Pinion Bearing

7. Install a **NEW** collapsible spacer on the pinion shaft.

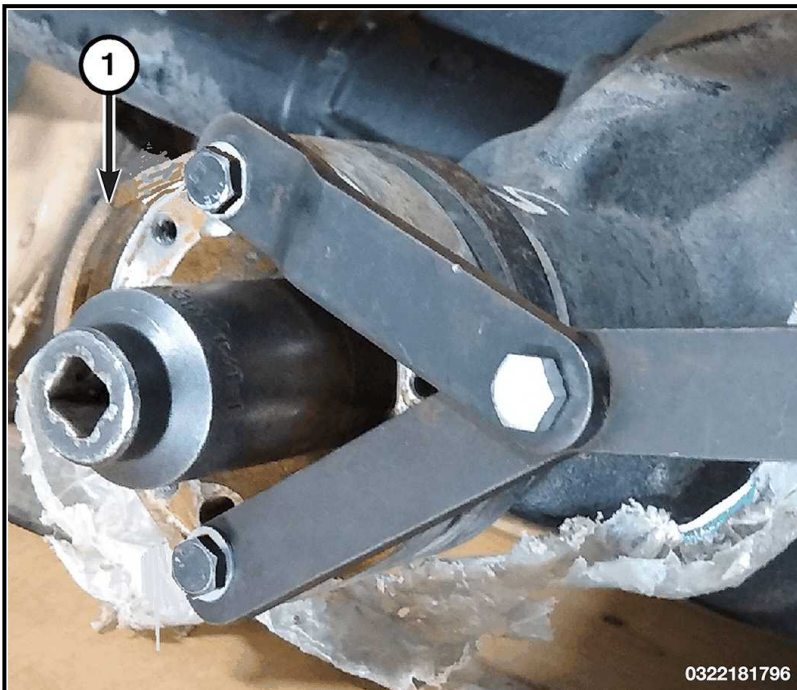


1 - Pinion Flange

2 - Pinion Flange Installer

8. Install the pinion gear into the differential housing.

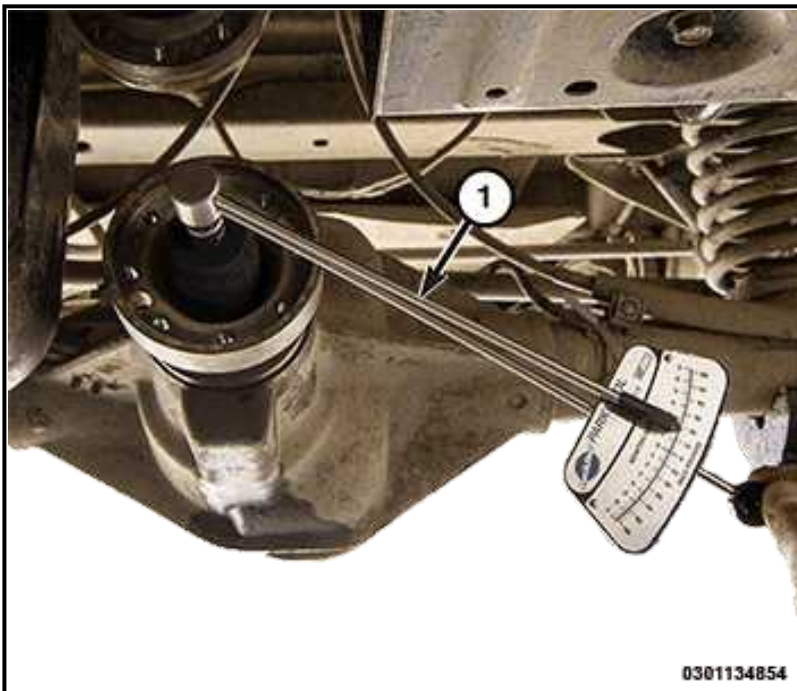
9. Install the pinion flange using the (special tool #2054200030, Installer, Pinion Flange).



1 - Pinion Flange

10. Install the pinion washer and a **NEW** pinion nut. Hold the pinion flange with (special tool #6958, Wrench, Spanner) and tighten the pinion nut to the proper torque specification.

11. Tighten the pinion nut in 6.8 N.m (5 Ft. Lbs.) increments until the Pinion Torque To Rotate (PTTR) specification is achieved.

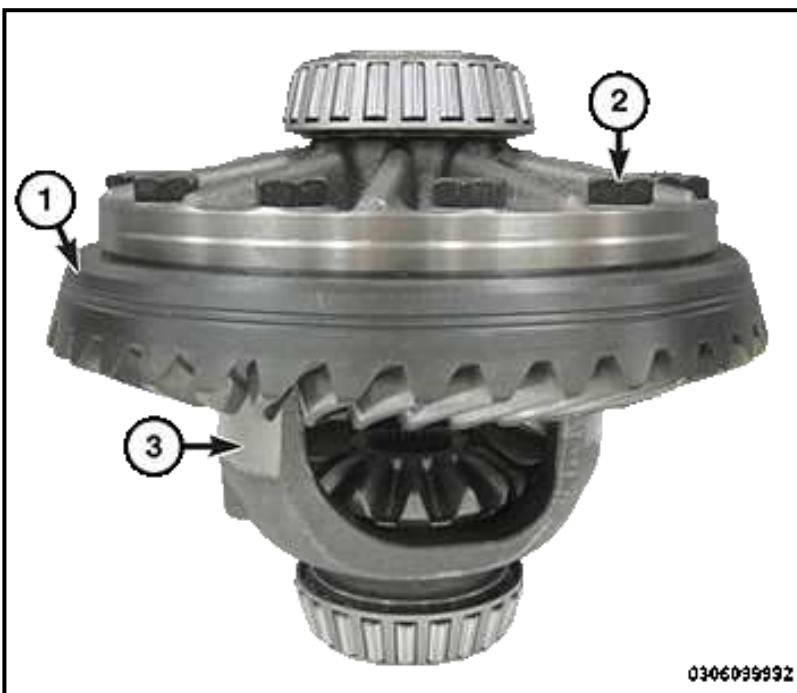


1 - Inch Pound Torque Wrench

12. Measure PTTR after each 6.8 N.m (5 Ft. Lbs.) increment with an inch pound torque wrench.

Pinion Torque To Rotate is:

- **NEW BEARINGS** 1.3 to 2.3 N.m (12 to 20 In. Lbs.)



1 - Ring Gear

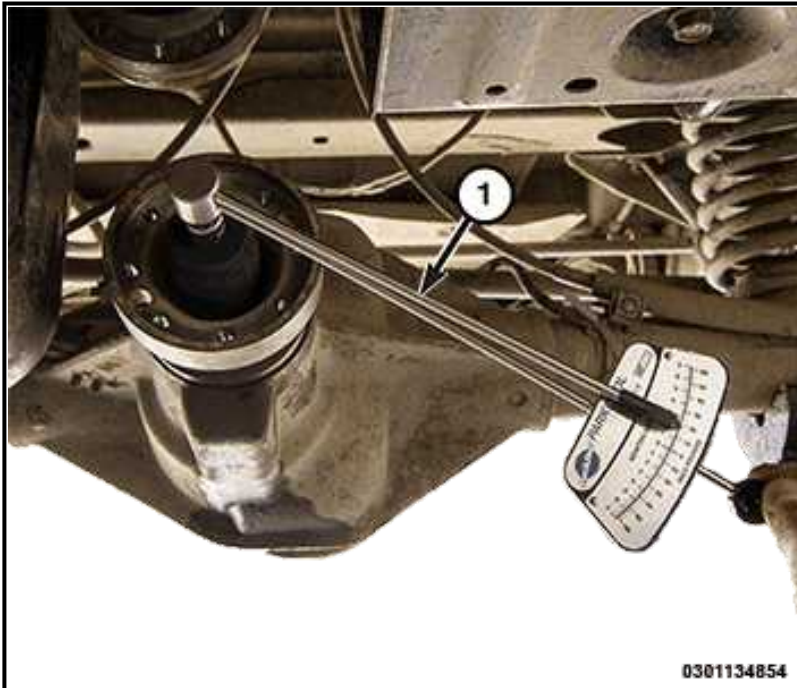
2 - Ring Gear Bolts

3 - Differential Case

CAUTION: Never reuse ring gear bolts, the bolts can fracture causing extensive damage. Failure to these instruction may result in damage.

13. Install the **NEW** ring gear bolts and alternately tighten to the proper torque specification.

14. For Tru-Loc equipped vehicles, install the Axle Locker Actuator. Refer to [REMOVAL AND INSTALLATION](#) .
15. Install differential case assembly in the differential housing. Refer to [REMOVAL AND INSTALLATION](#) .



1 - Inch Pound Torque Wrench

16. Measure the Total Torque To Rotate (TTTR) with an inch pound torque wrench (1) before installing the axle shafts.

Total Torque To Rotate is 1.8 - 5.8 N.m (16 - 51 In. Lbs.).

NOTE: If TTTR is too high, decrease the washer thickness equally from both sides of the differential and check TTTR again. If TTTR is too low, increase the washer thickness equally to both sides of the differential and check TTTR again.

TORQUE SPECIFICATIONS

REAR AXLE - M220

DESCRIPTION	SPECIFICATIONS	COMMENT
Axle Retainer Nuts	80 N.m (59 Ft. Lbs.)	-
Bearing Cap Bolts	95 N.m (70 Ft. Lbs.)	-
Differential Cover Bolts	41 N.m (30 Ft. Lbs.)	Do not reuse these fasteners. If removed, a NEW fastener must be installed and tightened to specifications.
Drain Plug	34 N.m (25 Ft. Lbs.)	-
Fill Plug	34 N.m (25 Ft. Lbs.)	-
Pinion Nut	488 N.m (360 Ft. Lbs.)	Do not reuse these fasteners. If removed, a NEW fastener must be installed and tightened to specifications.
Ring Gear Bolts	Torque Procedure:	Do not reuse these fasteners. If removed, a NEW fastener must be

DESCRIPTION	SPECIFICATIONS	COMMENT
	1. Tighten to 100 N.m (74 Ft. Lbs.) 2. Rotate additional 57.5B°	installed and tightened to specifications.
Rear Axle Vent Fitting	22 N.m (17 Ft. Lbs.)	-

2021 GENERAL INFORMATION

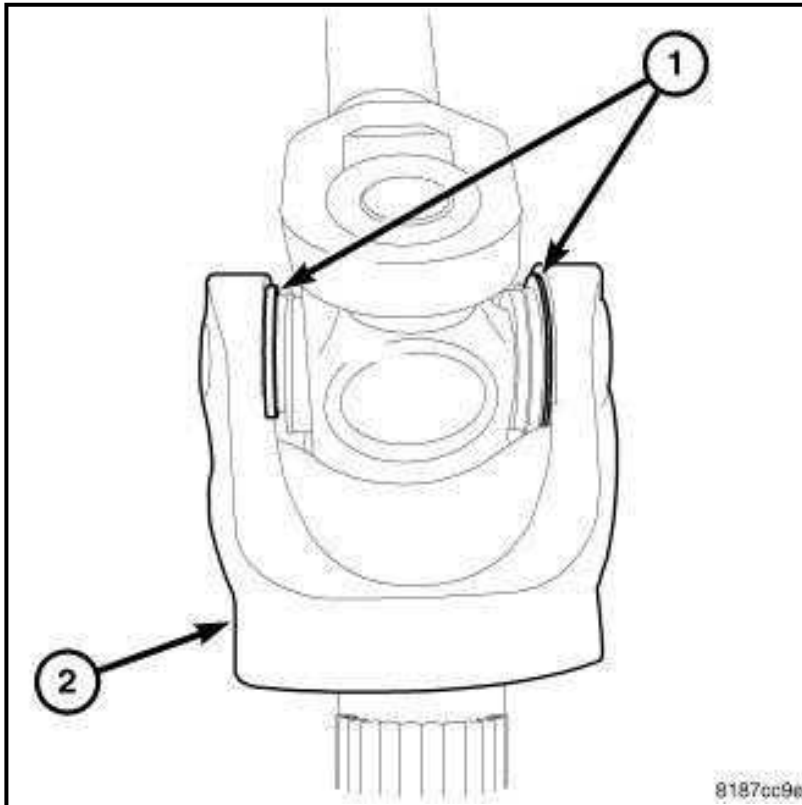
Front Axle U-Joints - Gladiator

REMOVAL AND INSTALLATION

FRONT AXLE SHAFT U-JOINT - M210

REMOVAL

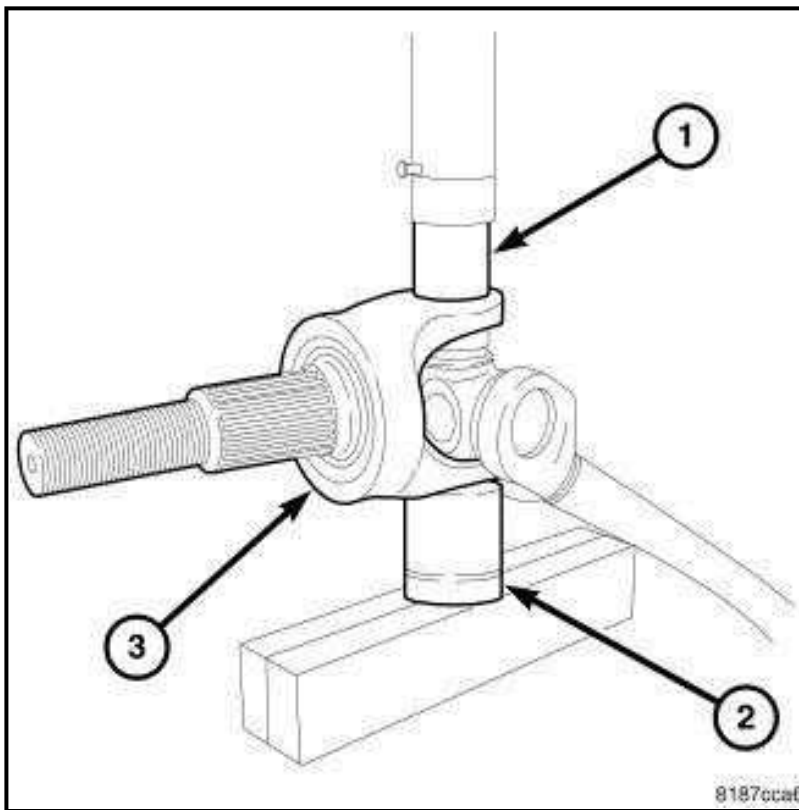
1. Remove the axle shaft. Refer to [REMOVAL AND INSTALLATION](#) .



1 - Bearing Cap C-clips
2 - Stub Shaft Yoke

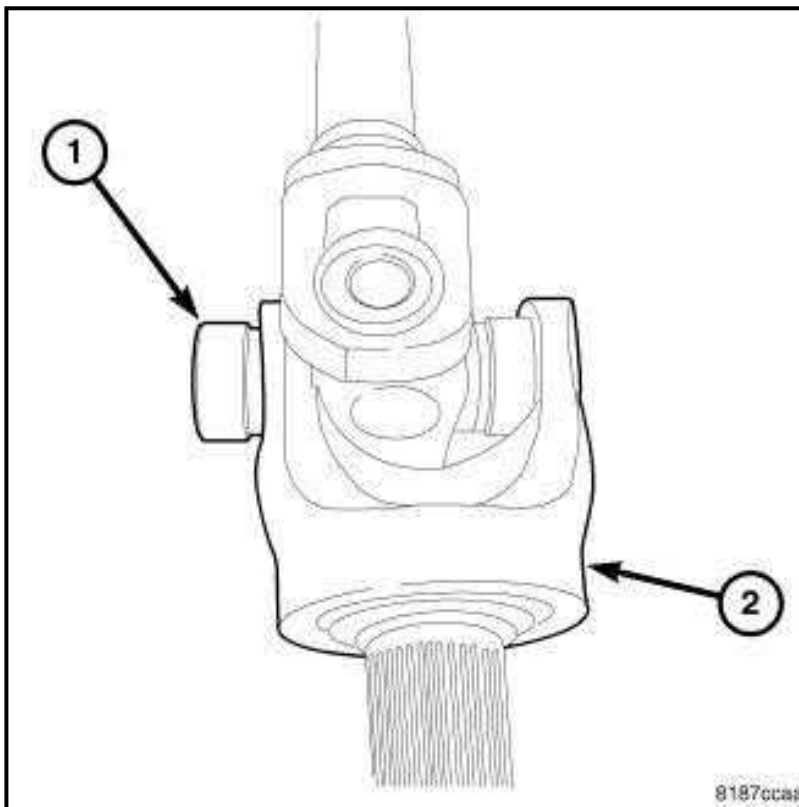
NOTE: Saturate the bearing caps with penetrating oil prior to removal.

2. Remove the bearing cap snap rings from the stub shaft yoke bearing caps.



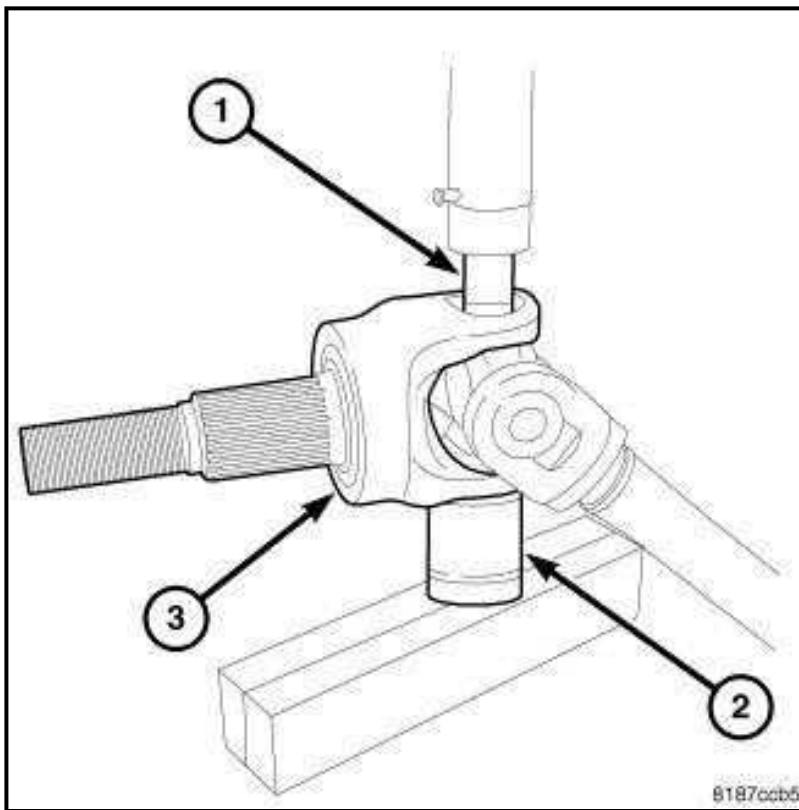
1 - Driver Socket
2 - Receiver Socket
3 - Stub Shaft Yoke

3. Position the receiver/socket and driver/socket on the stub shaft yoke in a press. Press the bearing cap into the receiver/socket.



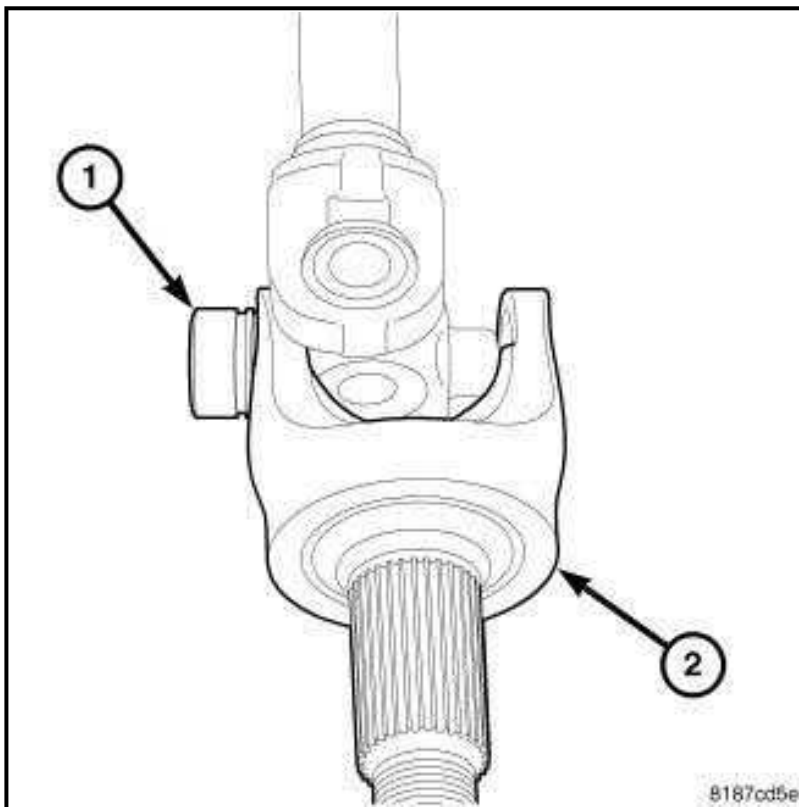
1 - Bearing Cap
2 - Stub Shaft Yoke

4. Remove the bearing cap from the stub shaft yoke.



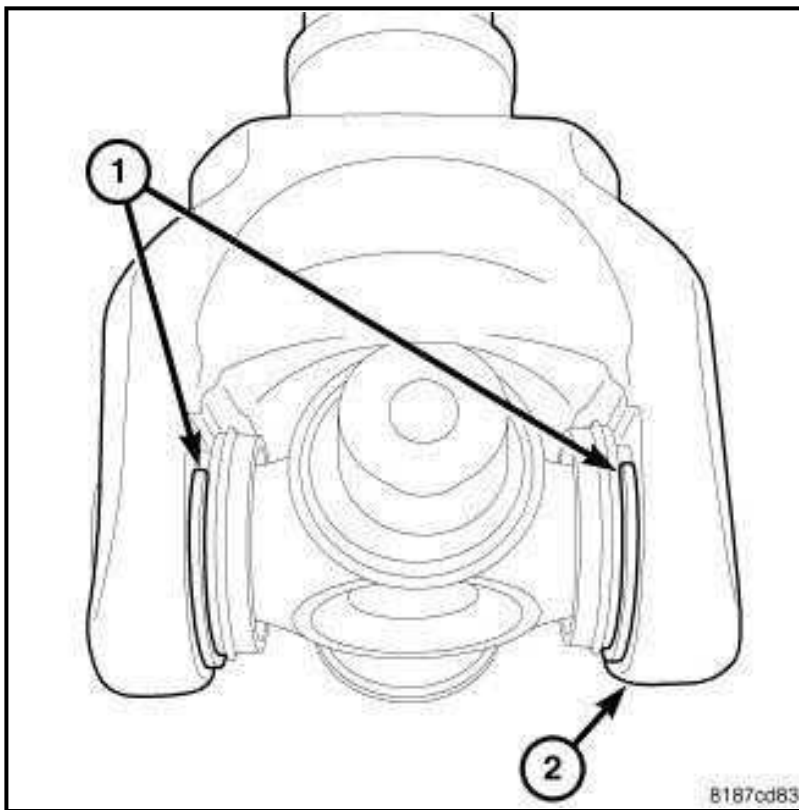
1 - Driver Socket
2 - Receiver Socket
3 - Stub Shaft Yoke

5. Position the receiver/socket under the stub shaft yoke bearing cap and driver/socket in the press. Press the bearing cap into the receiver/socket.



1 - Bearing Cap
2 - Shaft Yoke

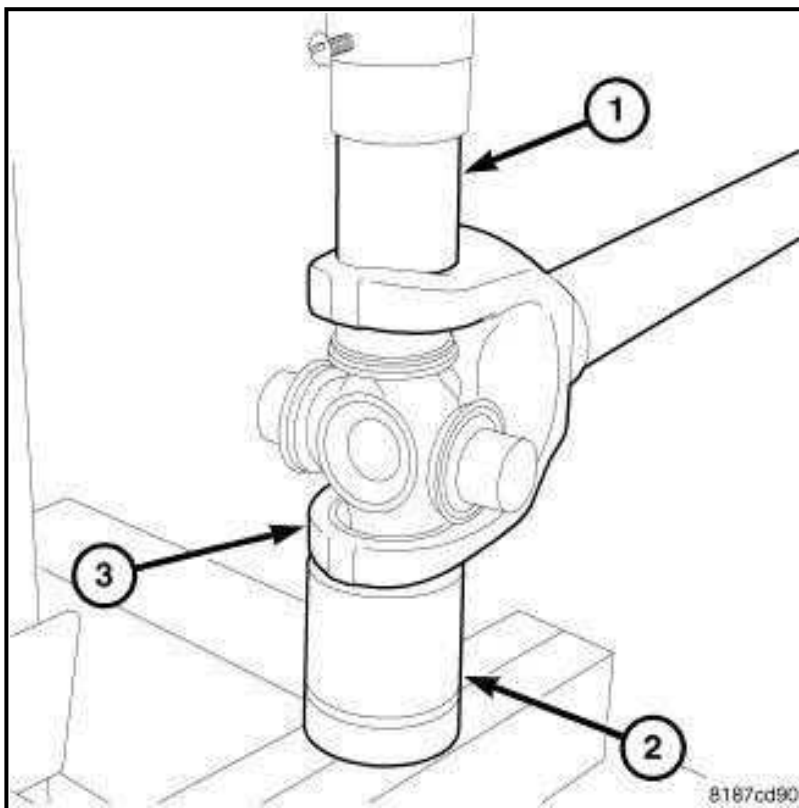
6. Remove the bearing cap from the stub shaft yoke. Then remove the stub shaft from the U-joint.



1 - Snap C-clips

2 - Shaft Yoke

7. Remove the C-clips from the shaft yoke bearing caps.

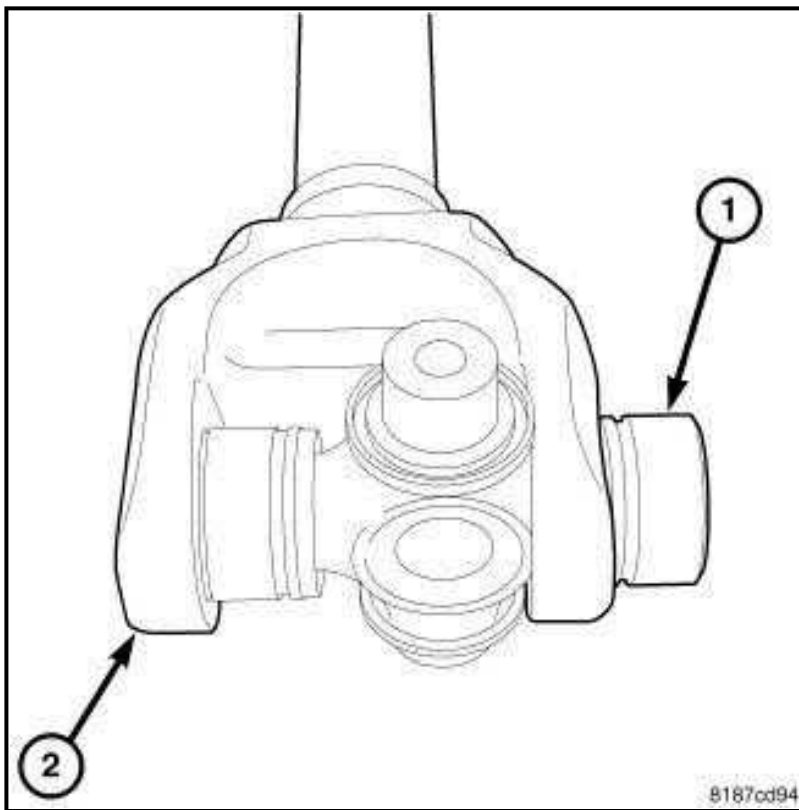


1 - Driver Socket

2 - Receiver Socket

3 - Shaft Yoke

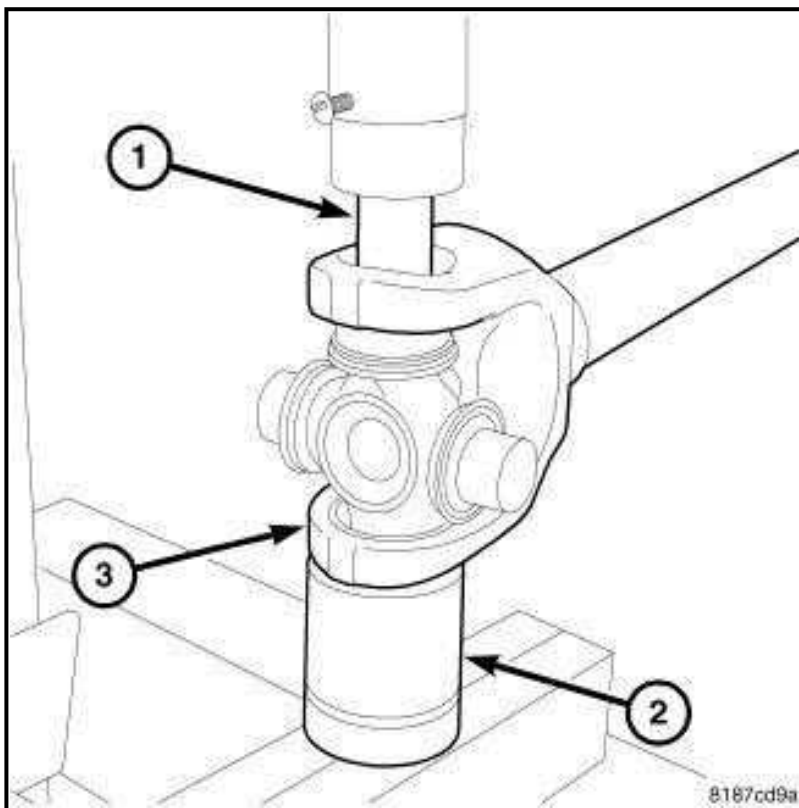
8. Position the receiver/socket and driver/socket on the shaft yoke in a press. Press the bearing cap into the receiver/socket.



1 - Bearing Cap

2 - Shaft Yoke

9. Remove the bearing cap from the shaft yoke.

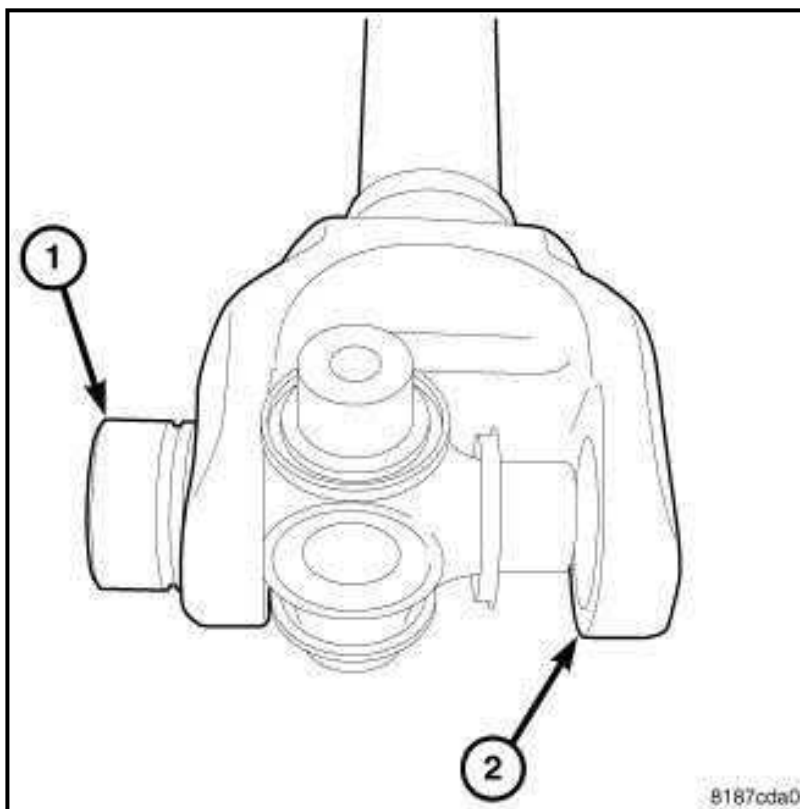


1 - Driver Socket

2 - Receiver Socket

3 - Shaft Yoke

10. Position the receiver/socket under the shaft yoke remaining bearing cap and driver/socket in a press. Press the bearing cap into the receiver/socket.

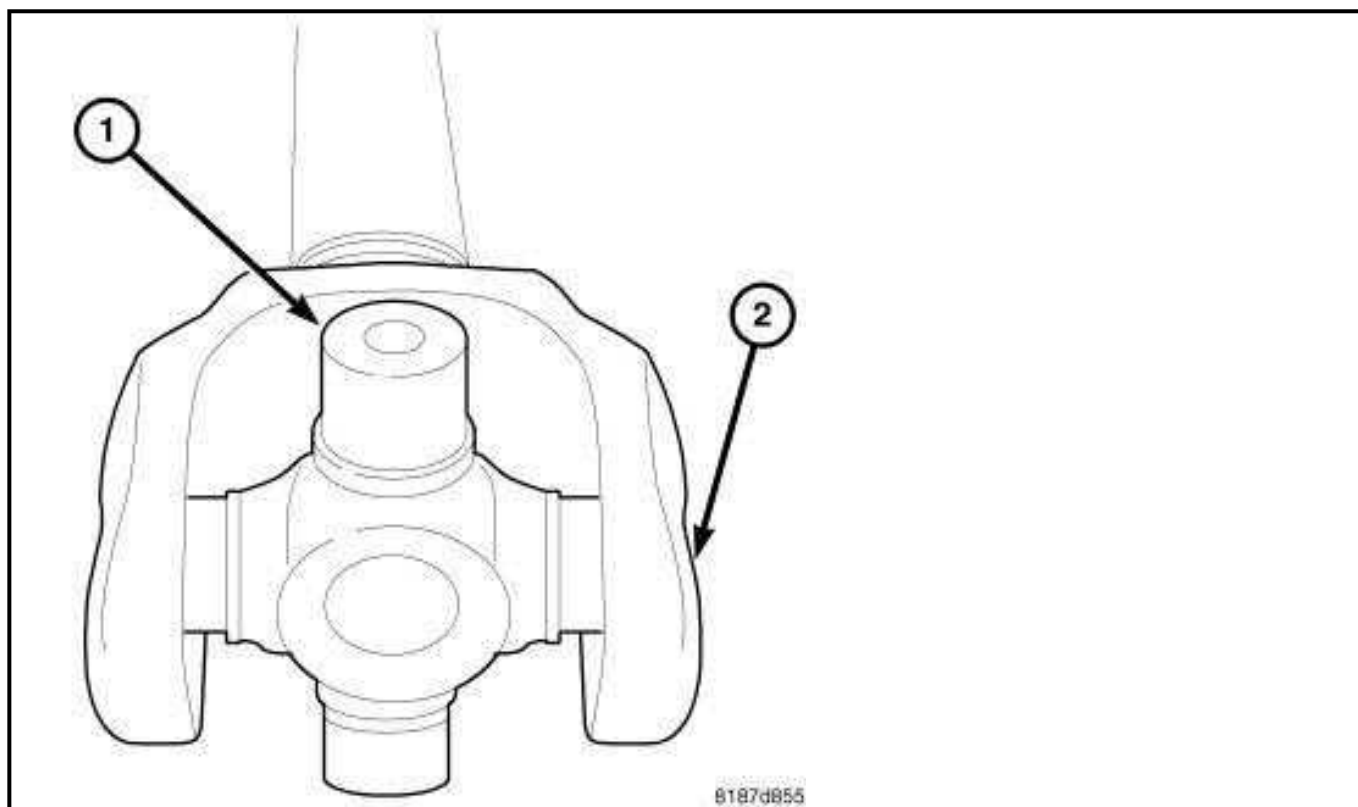


1 - Bearing Cap

2 - Shaft Yoke

11. Remove the bearing cap from the shaft yoke. Then remove the U-joint from the shaft yoke.

INSTALLATION

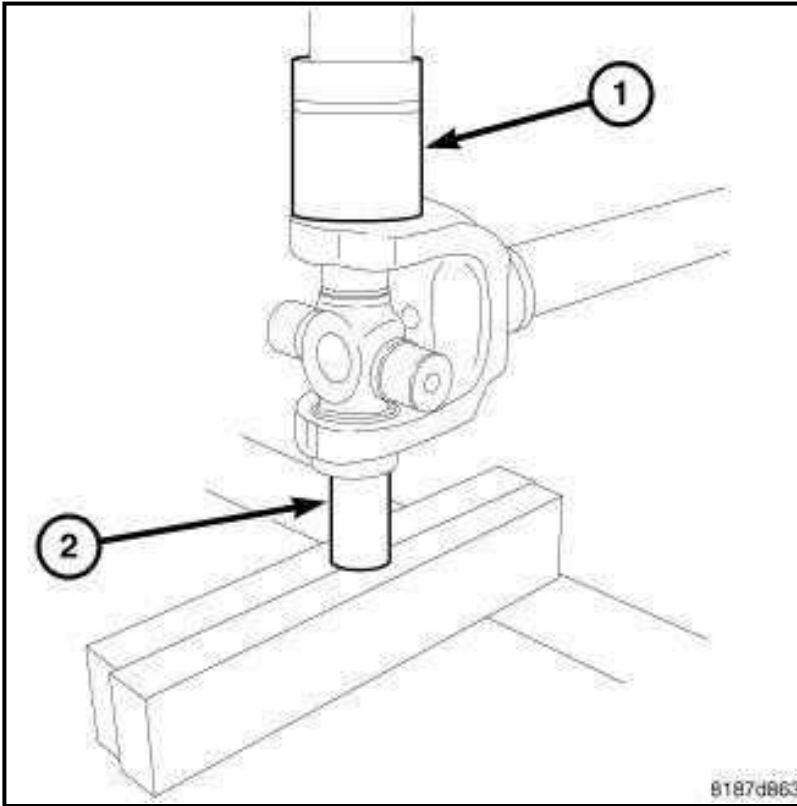


1 - U-joint

2 - Shaft Yoke

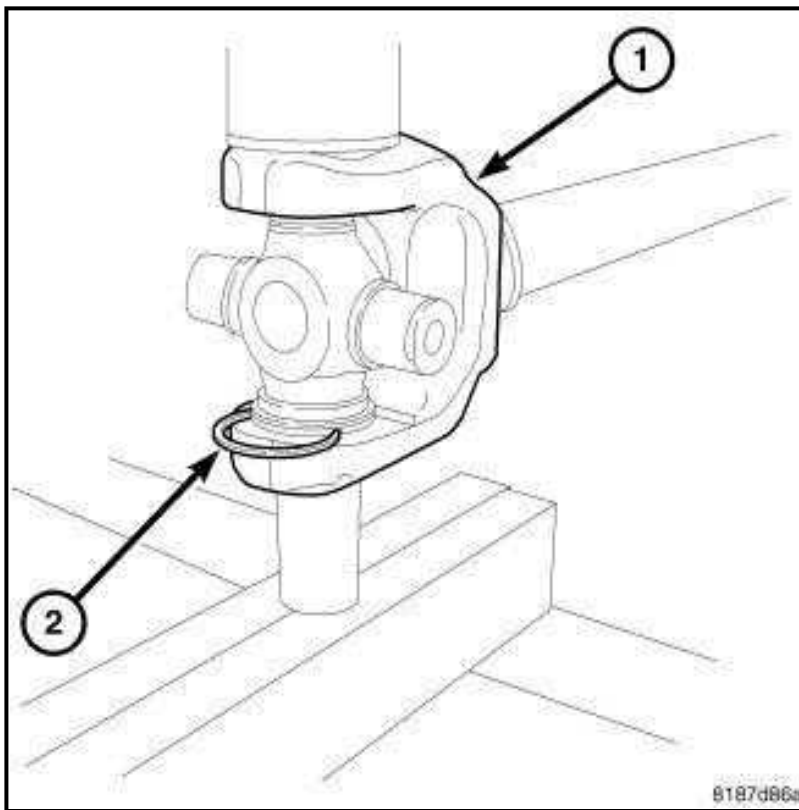
CAUTION: Keep cross and bearing cap straight during installation. Failure to follow these instruction will result in damage.

1. Pack the bearing caps 1/3 full of wheel bearing lubricant. Apply extreme pressure (EP), lithium-base lubricant to aid in installation.
2. Position the U-joint in the shaft yoke.



1 - Receiver Socket
2 - Driver Socket

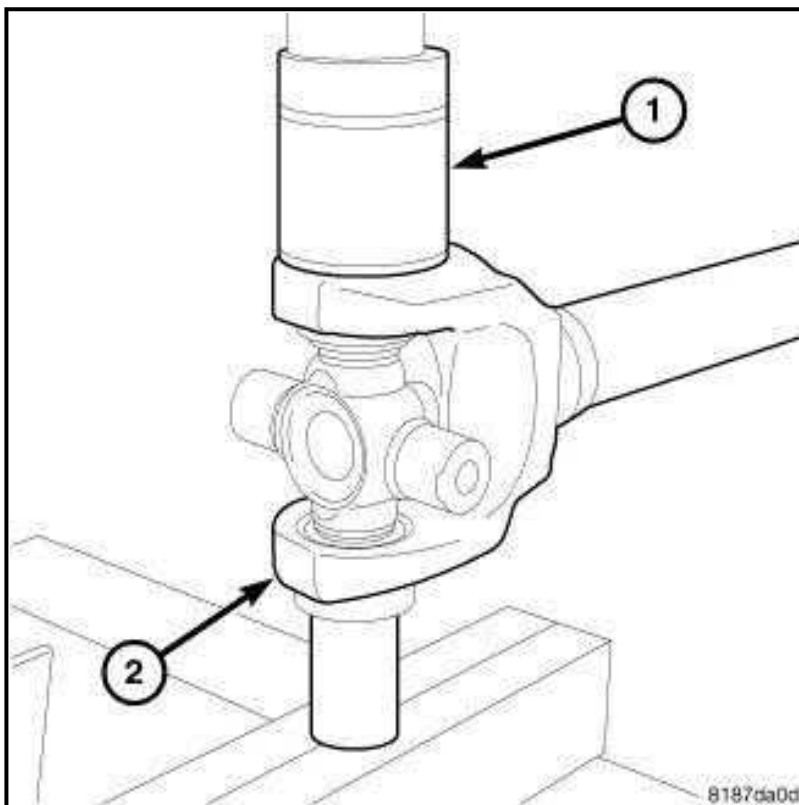
3. Tap the bearing cap into the yoke bores far enough to position the U-joint.
4. Position the receiver/socket on the shaft yoke and driver/socket on the bearing cap in a press.



1 - Shaft Yoke

2 - C-clip

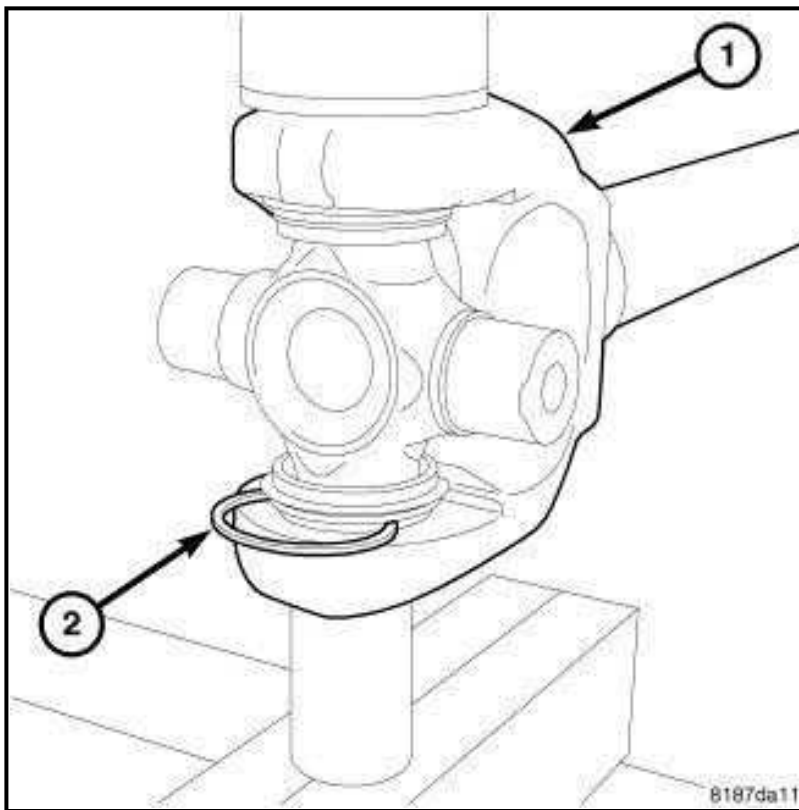
5. Press the bearing cap into the shaft yoke until the bearing cap snap ring groove is visible and install the snap ring.



1 - Receiver Socket

2 - Driver Socket

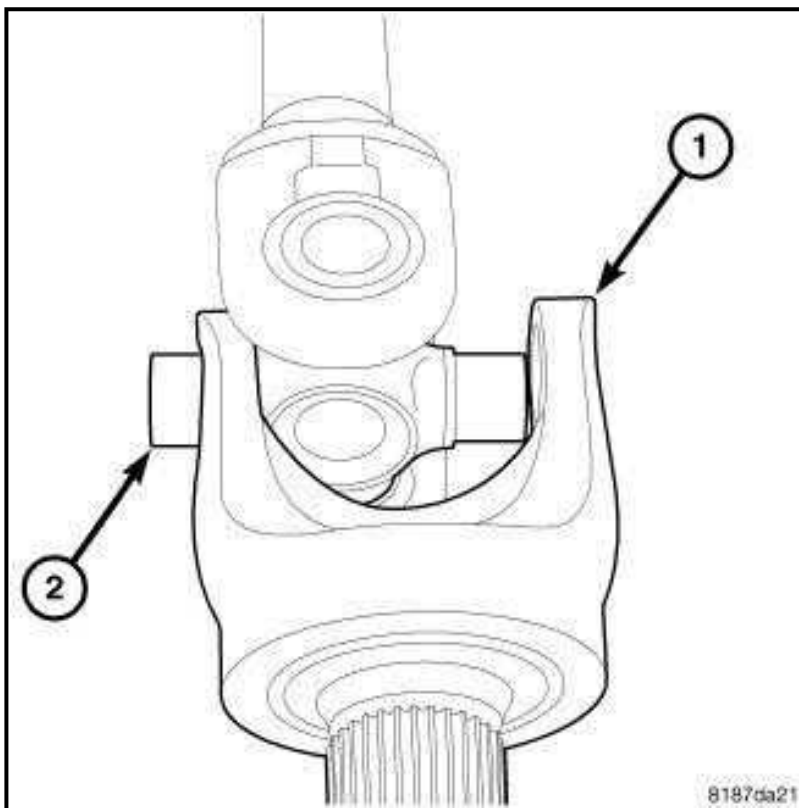
6. Position the receiver/socket (1) on the shaft yoke and driver/socket (2) on the bearing cap in a press.



1 - Shaft Yoke

2 - C-clip

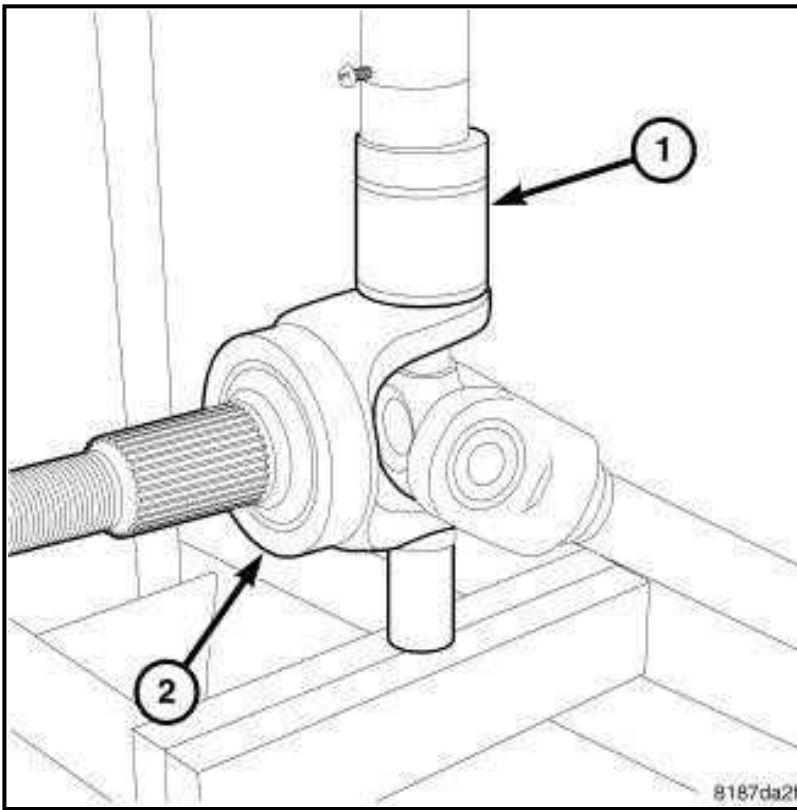
7. Press the bearing cap into the shaft yoke until the bearing cap C-clip groove is visible and then install the snap ring.



1 - Shaft Yoke

2 - U-joint

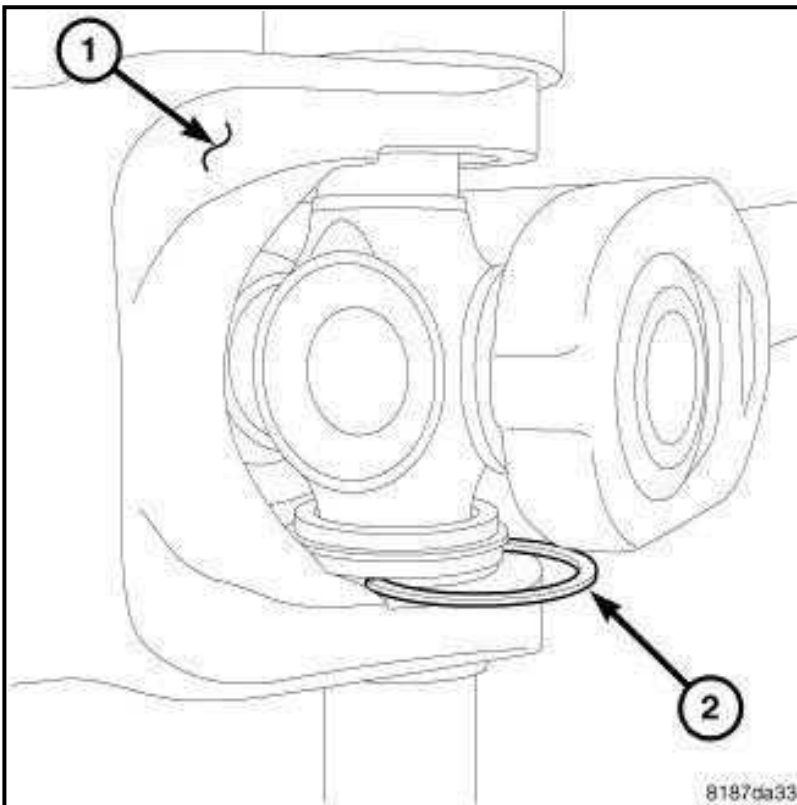
8. Install the stub shaft yoke on the U-joint.



1 - Receiver Socket

2 - Driver Socket

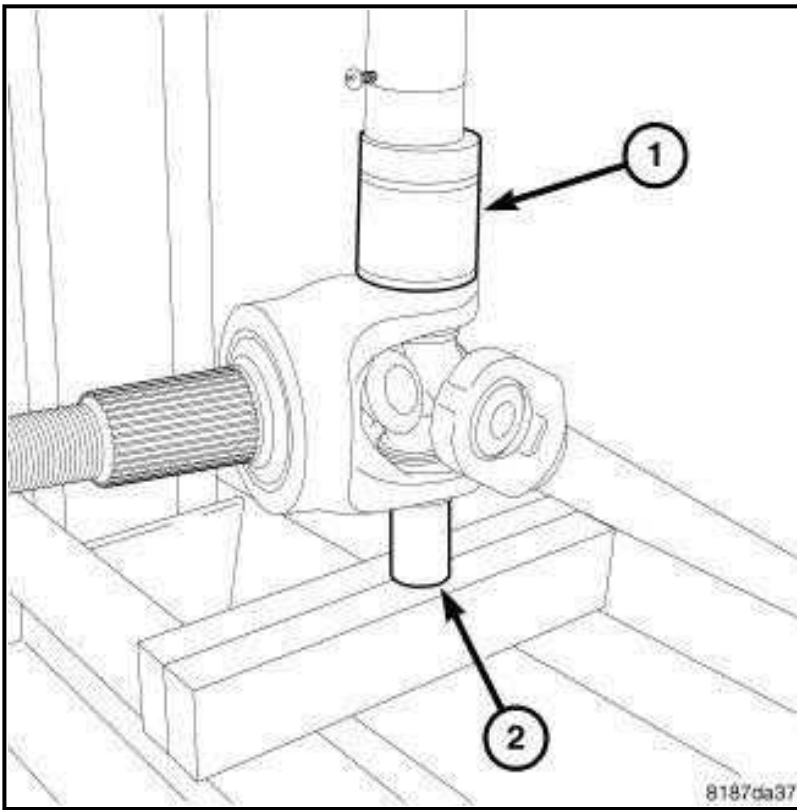
9. Tap the first bearing cap into the stub shaft yoke bore far enough to position U-joint.
10. Position the receiver/socket on the shaft yoke and driver/socket on the bearing cap in a press.



1 - Shaft Yoke

2 - C-clip

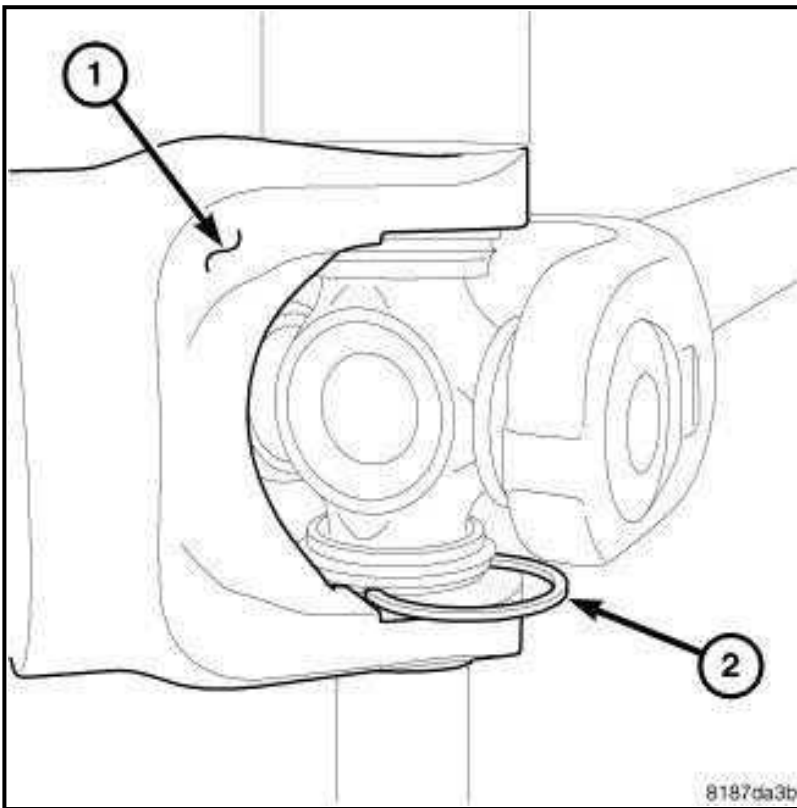
11. Press the bearing cap into the stub shaft yoke until the bearing cap C-clip groove is visible then install the C-clip into the groove.



1 - Receiver Socket

2 - Driver Socket

12. Position the receiver/socket on the stub shaft yoke and driver/socket on the bearing cap in a press.



1 - Shaft Yoke

2 - Snap Ring

13. Press the bearing cap into the stub shaft yoke until the bearing cap snap ring groove is visible then install the snap ring.

14. Install the axle shaft. Refer to [REMOVAL AND INSTALLATION](#) .

TORQUE SPECIFICATIONS

FRONT AXLE - M210

DESCRIPTION	SPECIFICATIONS	COMMENT
Bearing Cap Bolts	108 N.m (80 Ft. Lbs.)	-
Differential Cover Bolts	Torque Procedure: 1. Tighten to 20 N.m (15 Ft. Lbs.) 2. Rotate additional 20B°	Tightening Sequence
Differential Drain Plug	34 N.m (25 Ft. Lbs.)	-
Differential Fill Plug	34 N.m (25 Ft. Lbs.)	-
Front Axle Disconnect Skid Plate Bolts	42 N.m (31 Ft. Lbs.)	-
Front Axle Disconnect Bolts	18 N.m (13 Ft. Lbs.)	Do not reuse these fasteners. If removed, a NEW fastener must be installed and tightened to specifications.
Pinion Flange Nut	217 N.m (160 Ft. Lbs.)	Do not reuse these fasteners. If removed, a NEW fastener must be installed and tightened to specifications.
Ring Gear Bolts	136 N.m (100 Ft. Lbs.)	Do not reuse these fasteners. If removed, a NEW fastener must be installed and tightened to specifications.

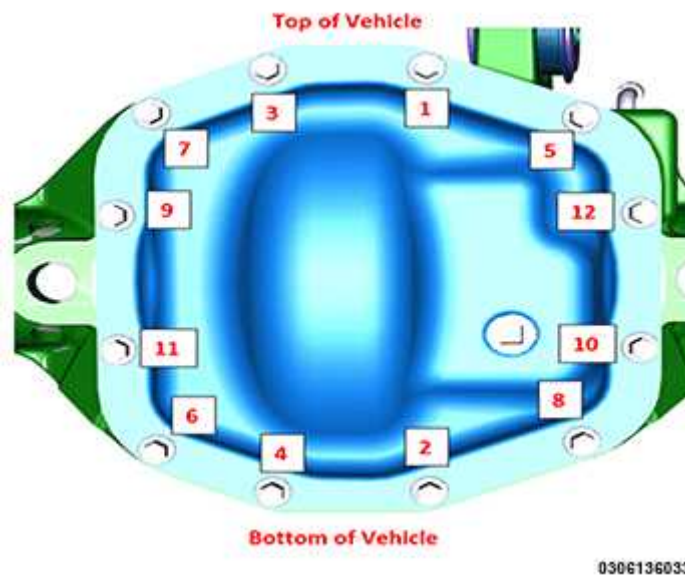


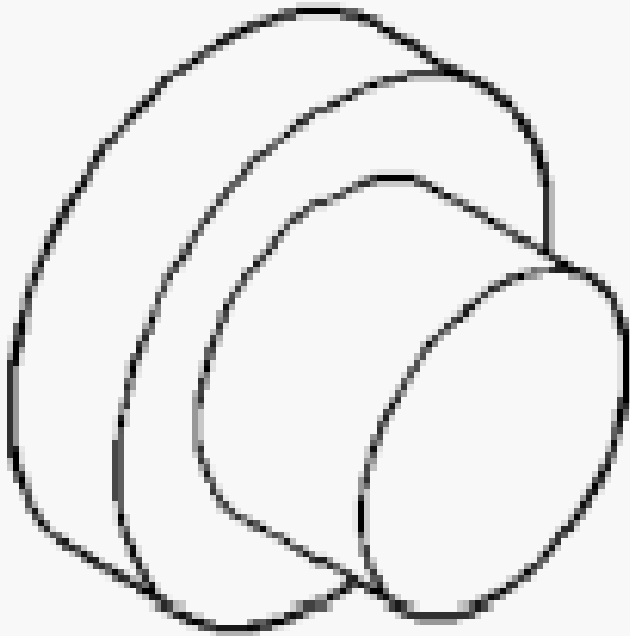
Fig. 1: Differential Cover Bolts Tightening Sequence
 Courtesy of CHRYSLER GROUP, LLC

2021 GENERAL INFORMATION

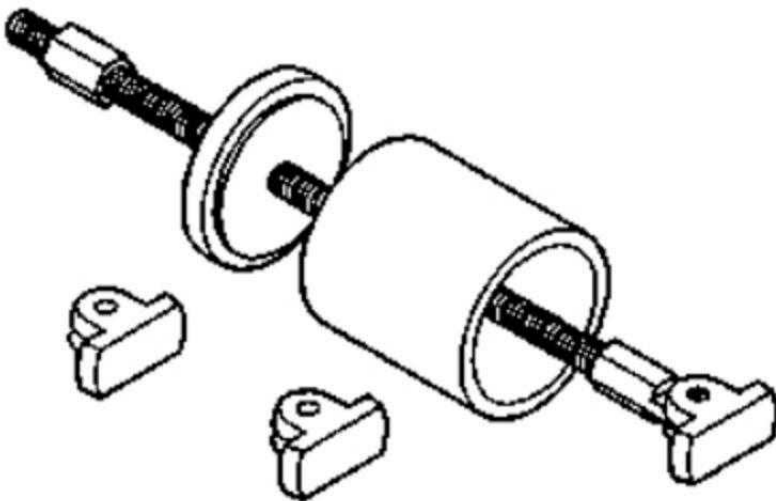
Special Tools - Gladiator

SPECIAL TOOLS

SPECIAL TOOLS - M210



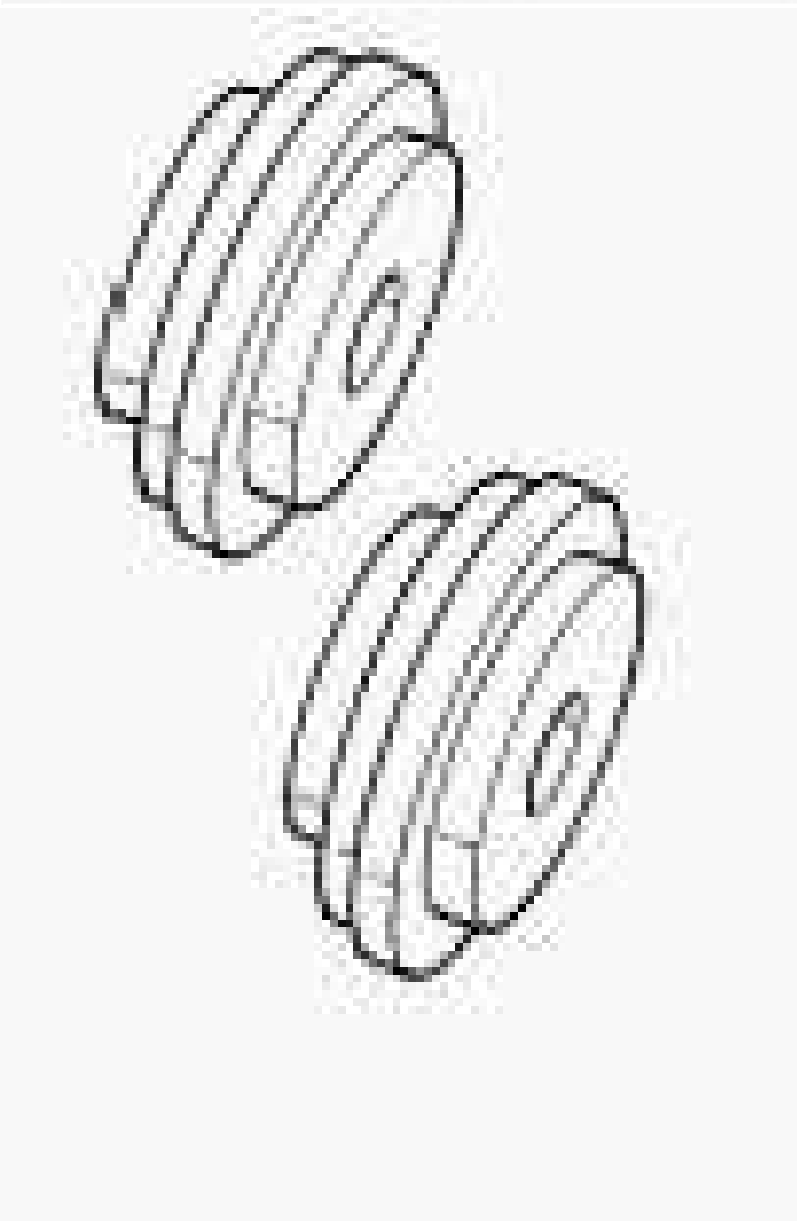
6055 - Thrust Button
(Originally Shipped In Kit Number(s)
6303, 6822.)



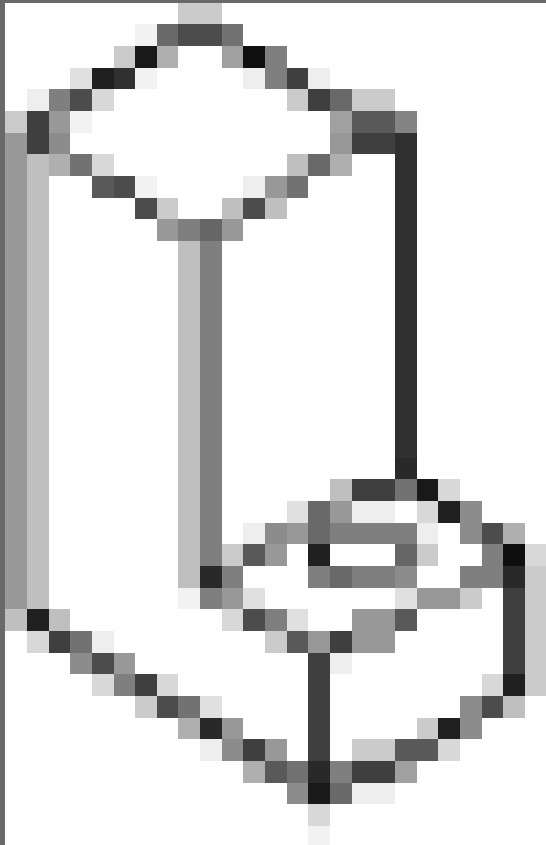
6310-5 - Head
(Originally Shipped In Kit Number(s).)



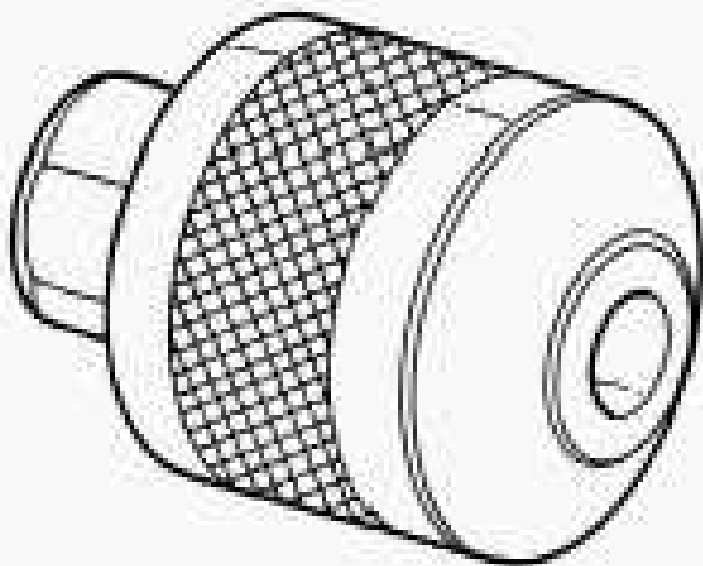
6310A-11 - Clevis, Bearing Intermediate
Shaft Remover



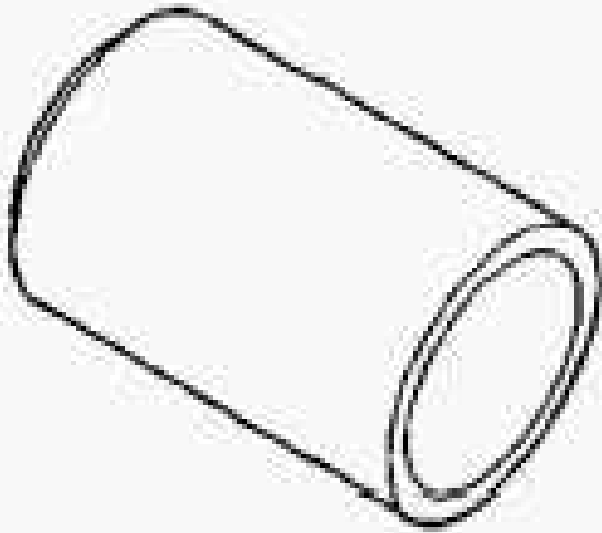
6732 - Set, Arbor Disc
(Originally Shipped In Kit Number(s)
6730.)



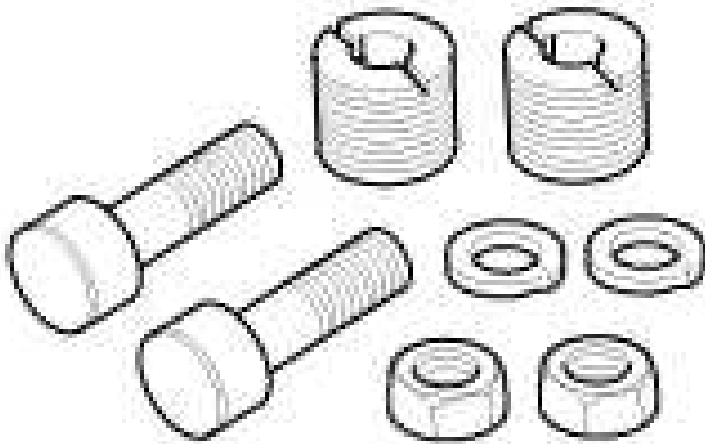
6739 - Block, Height
(Originally Shipped In Kit Number(s)
6730, 9516A-CAN, 9540, 9541.)



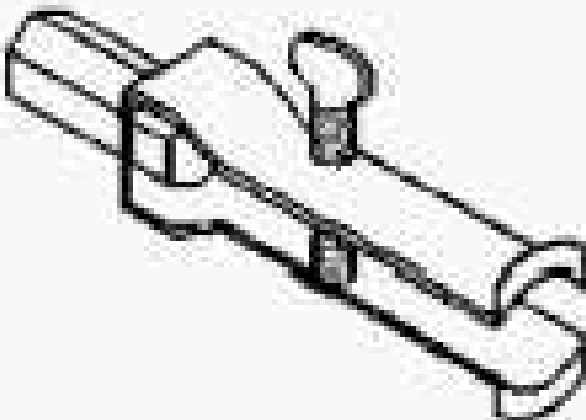
6740 - Cone
(Originally Shipped In Kit Number(s)
6730, 6731, 9516A-CAN, 9540, 9541.)



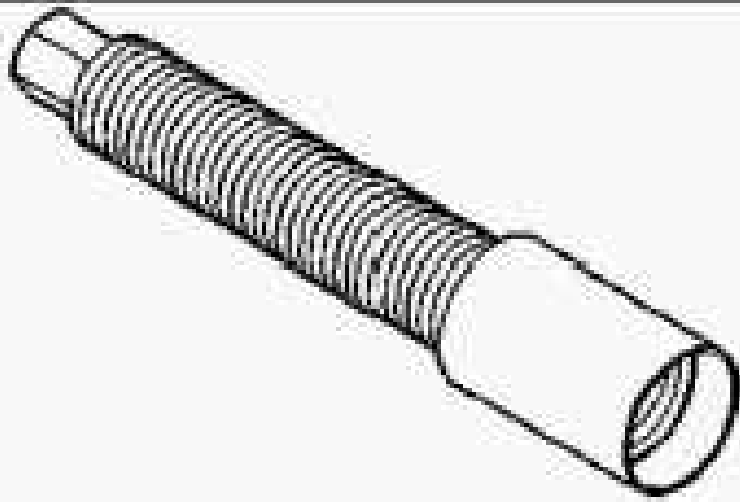
6761 - Installer, Ball Joint
(Originally Shipped In Kit Number(s)
6745, 8165CC.)



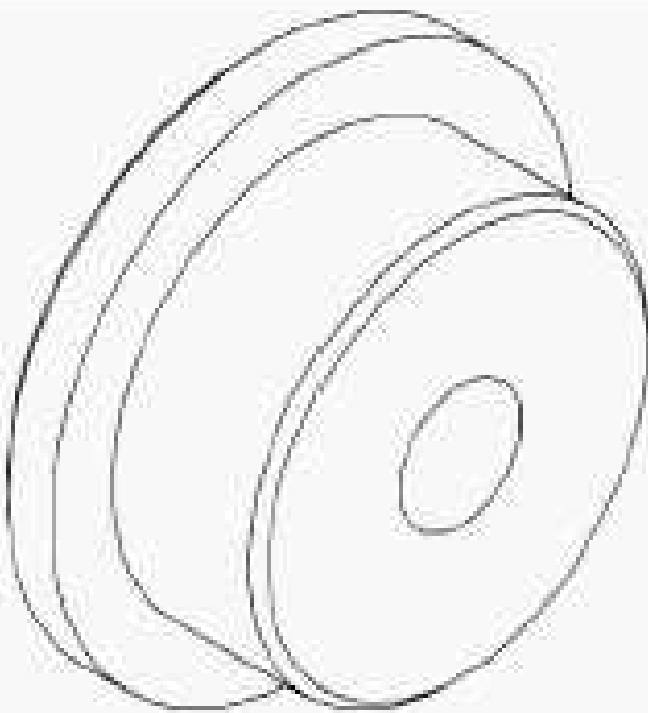
6987B - Adapter Kit, Axle Spreader
(Originally Shipped In Kit Number(s)
6980, 6994, 6995, 8653.)



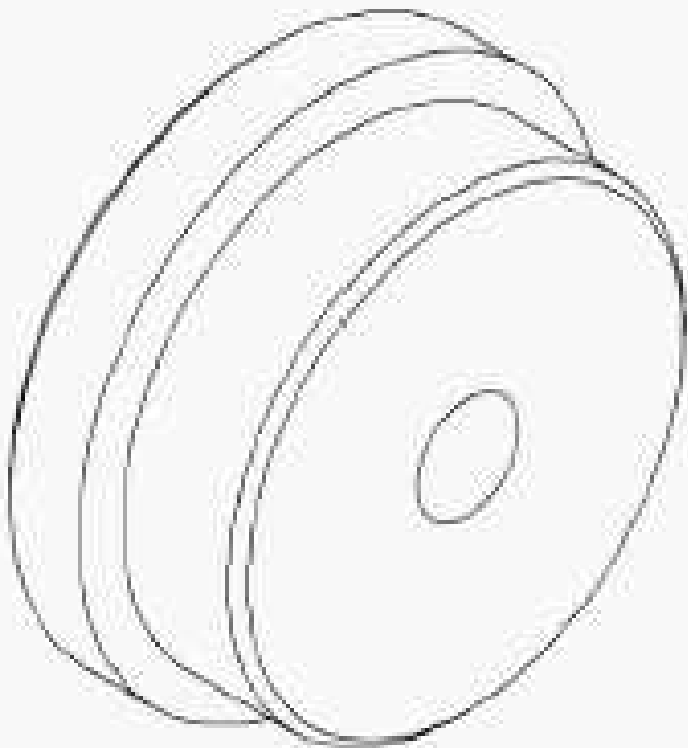
7794-A - Remover, Seal
(Originally Shipped In Kit Number(s)
6645.)



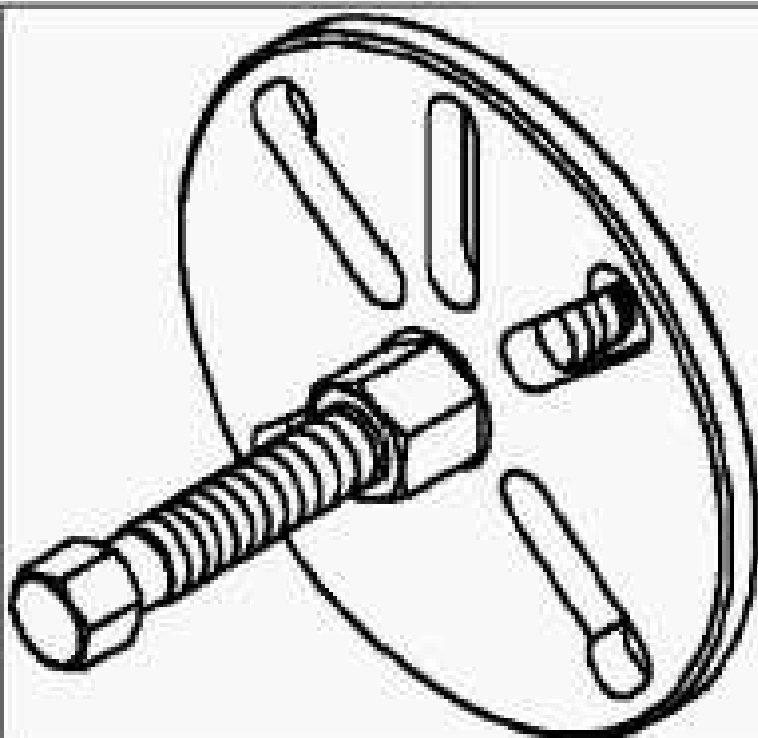
8112 - Screw
(Originally Shipped In Kit Number(s)
8163, 8163CC, 8164, 8164CC, 8165,
8165CC.)



8960 - Installer, Bearing Cup
(Originally Shipped In Kit Number(s)
8887, 8887CC.)



8961 - Installer, Bearing Cup
(Originally Shipped In Kit Number(s)
8887, 8887CC.)



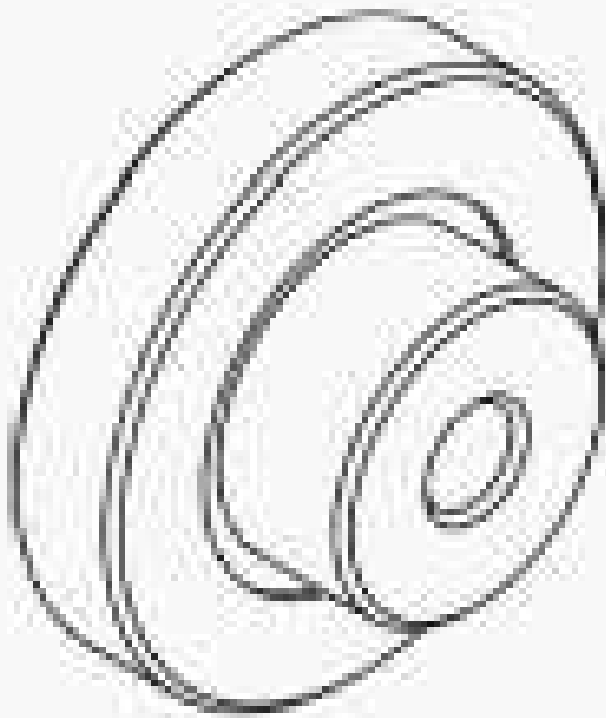
8992 - Remover, Pinion Flange
(Originally Shipped In Kit Number(s)
8999, 8999CC, 9299, 9299CC, 9299CC,
9300A-CAN.)



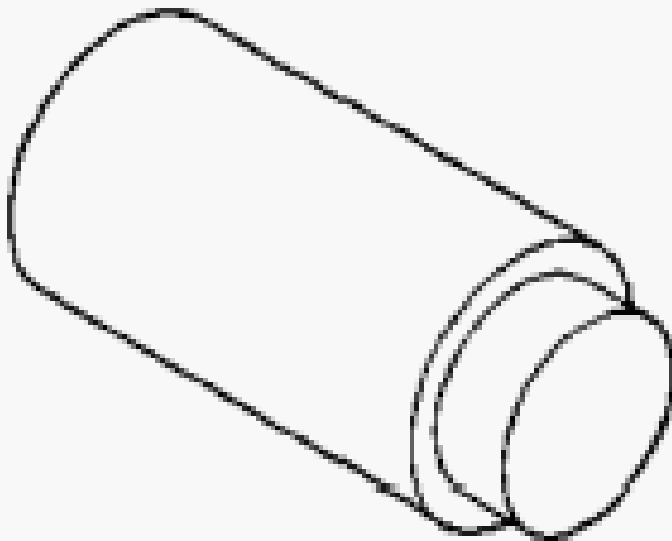
9676 - Adapter Plug
(Originally Shipped In Kit Number(s)
9675, 9685, 9695.)



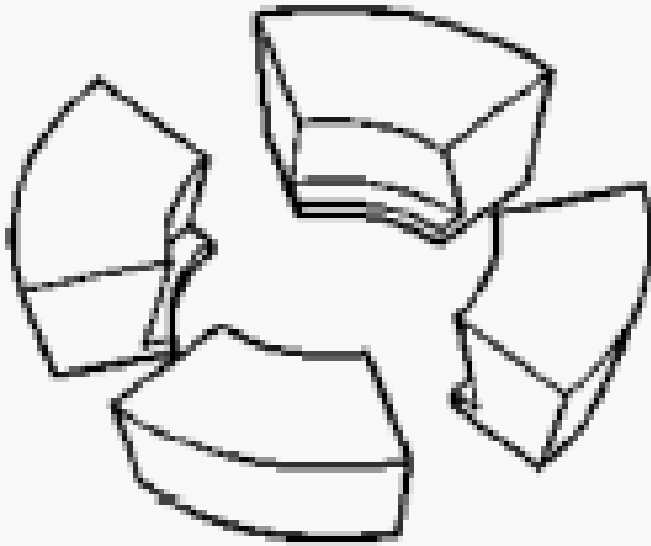
9684 - Installer, Seal
(Originally Shipped In Kit Number(s)
9656.)



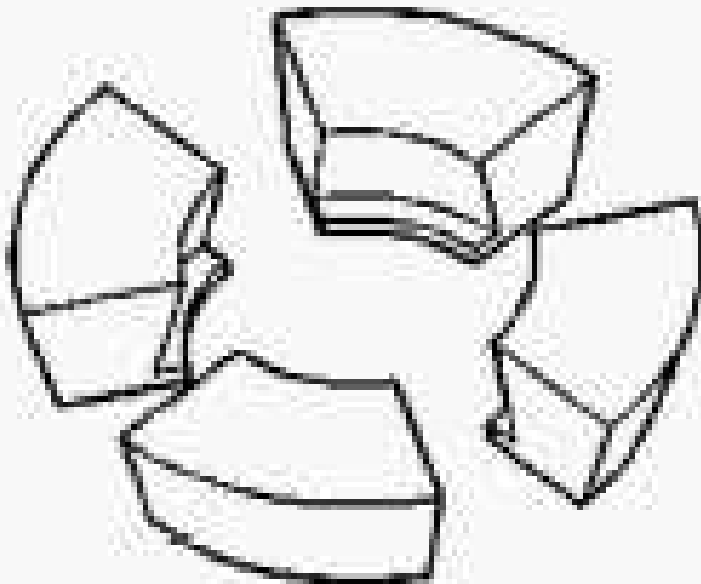
9946 - Gauge, Pinion Height
(Originally Shipped In Kit Number(s)
9945-SUP.)



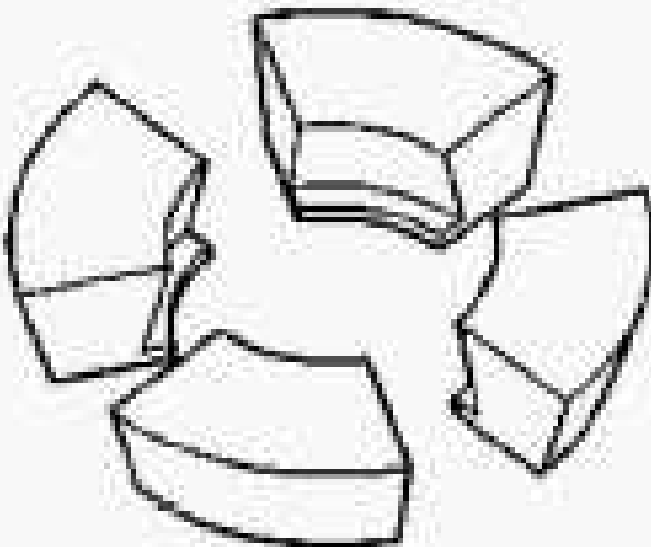
C-293-3 - Adapter, Bearing/Gear
(Originally Shipped In Kit Number(s)
8418, 8837, C-293-M, C-4246-AL, DD-
914-CLT-L.)



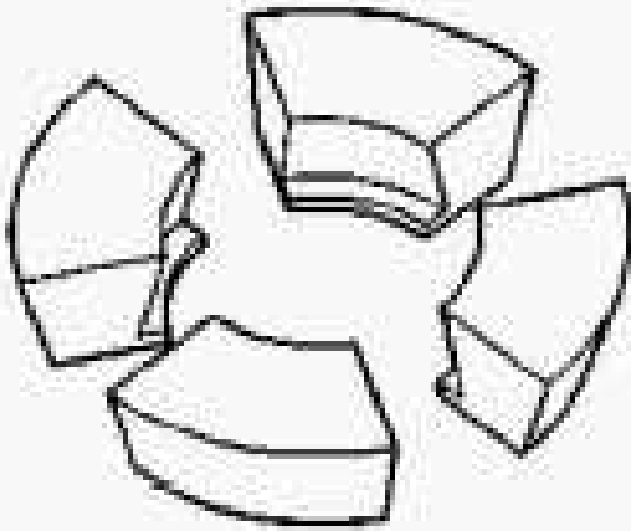
C-293-37 - Block Set, Puller
(Originally Shipped In Kit Number(s)
8418, 8562, C-293-M, DD-914-CLT-L.)



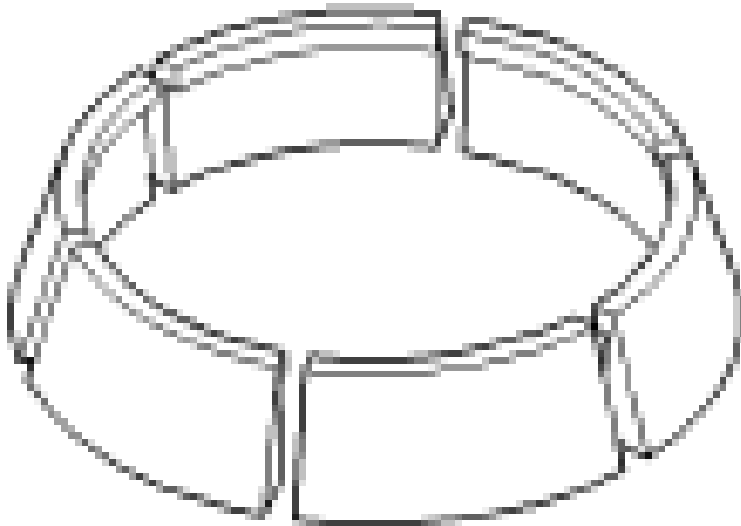
C-293-39 - Block Set, Puller
(Originally Shipped In Kit Number(s)
8418, C-293-M, DD-914-CLT-L.)



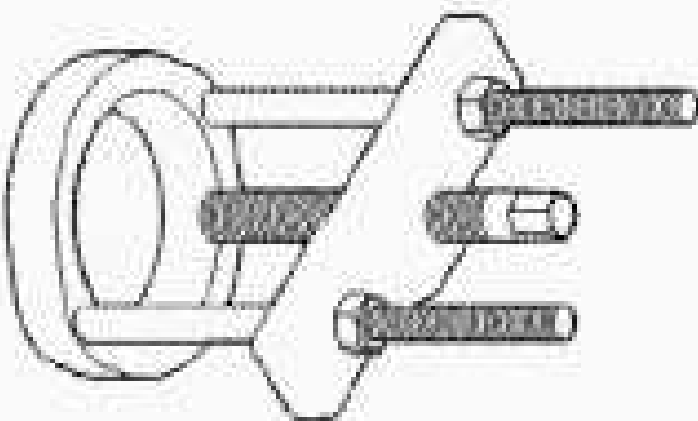
C-293-47 - Block Set, Puller
(Originally Shipped In Kit Number(s)
9975, C-293-M, DD-914-CLT-L.)



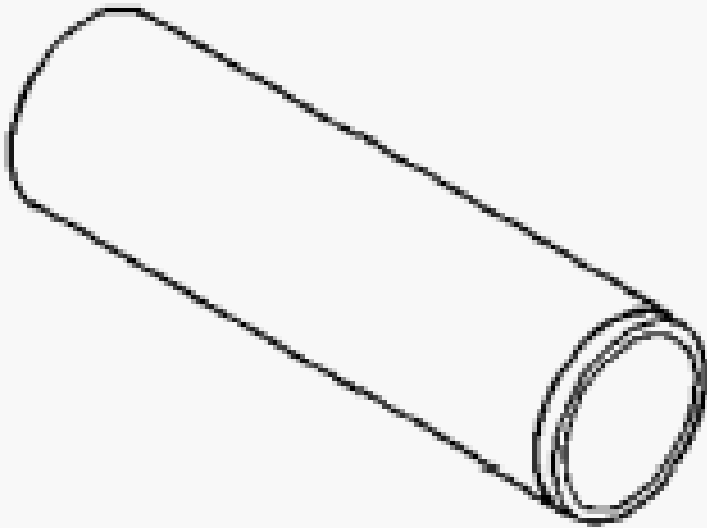
C-293-48 - Block Set, Puller
(Originally Shipped In Kit Number(s)
8418, 8837, C-293-M, DD-914-CLT-L.)



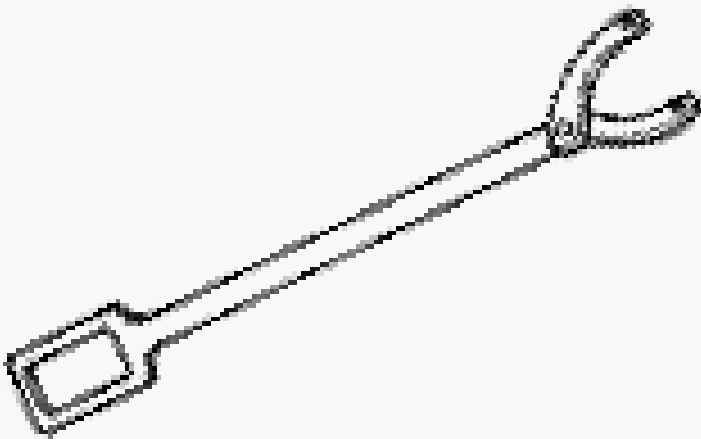
C-293-62 - Block Set, Puller



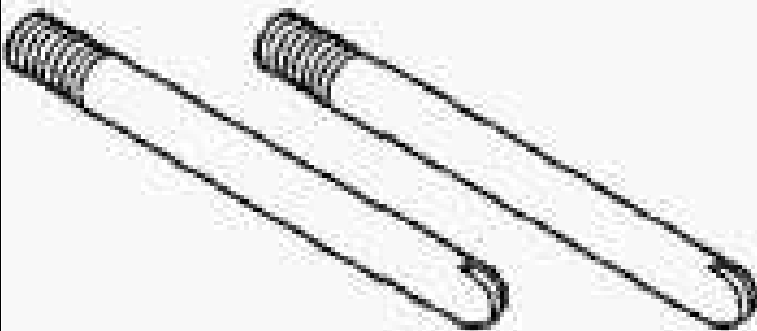
C-293-PA - Puller, Press
(Originally Shipped In Kit Number(s)
8418, 8837, C-293-M.)



C-3095-A - Installer, Bearing



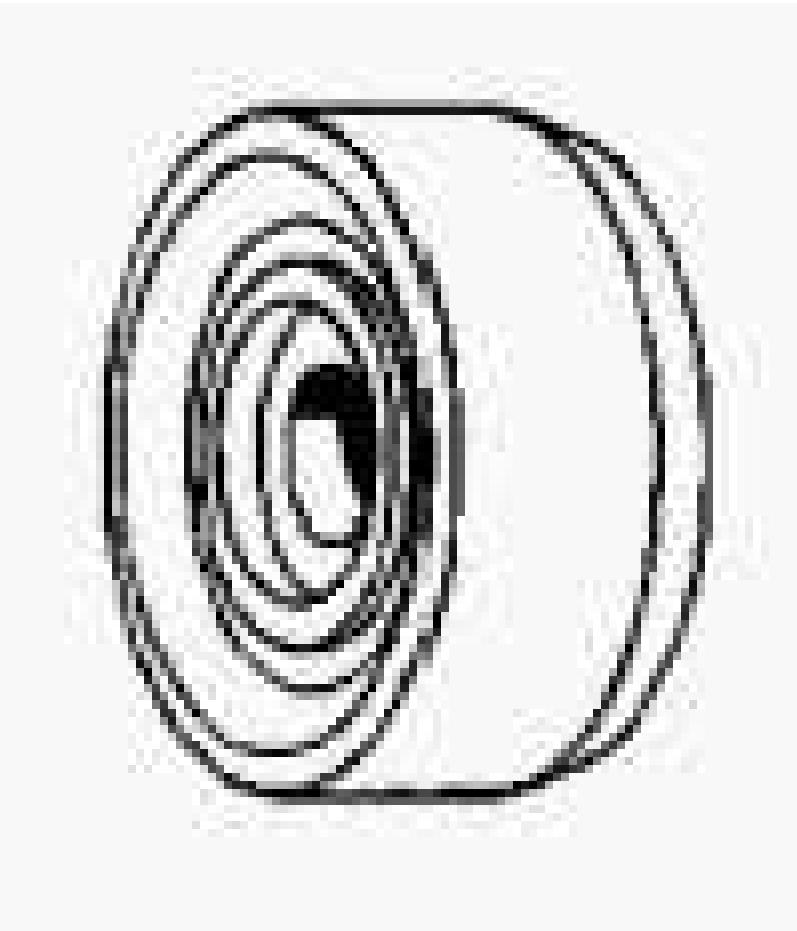
C-3281 - Holder, Flange
(Originally Shipped In Kit Number(s)
9202, 9202A-CAN, 9202CC, 9299,
9299CC, 9299CC, 9300A-CAN.)



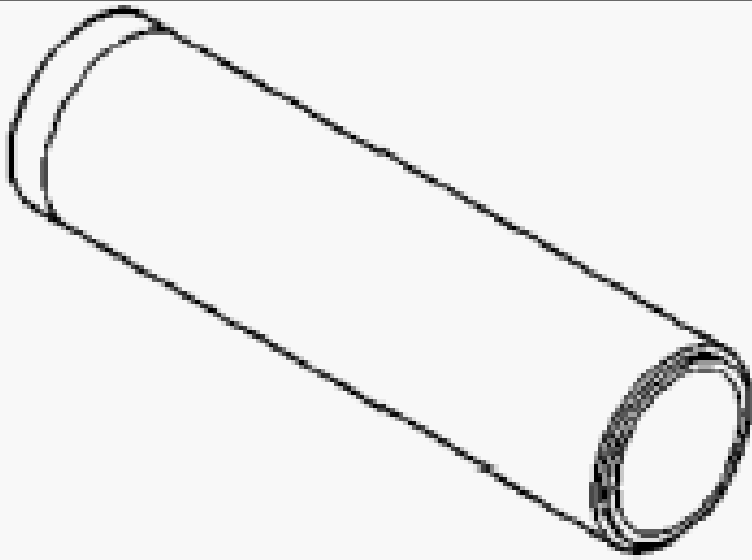
C-3288-B - Set, Alignment Pins
(Originally Shipped In Kit Number(s)
9975.)



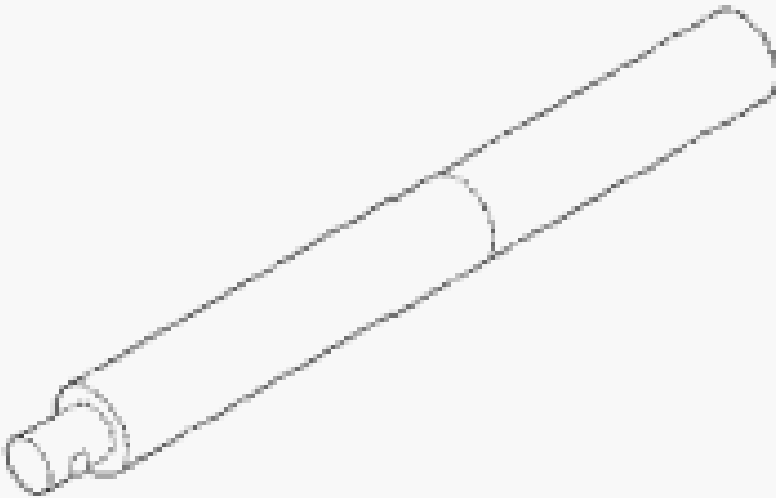
C-3339A - Set, Dial Indicator
(Originally Shipped In Kit Number(s)
9202.)



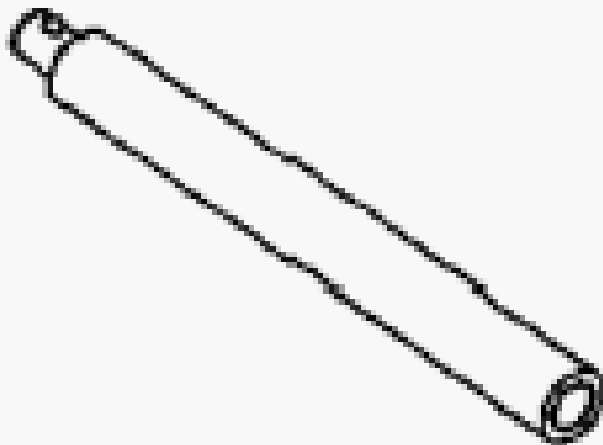
C-3716-A - Installer, Bearing
(Originally Shipped In Kit Number(s)
9975.)



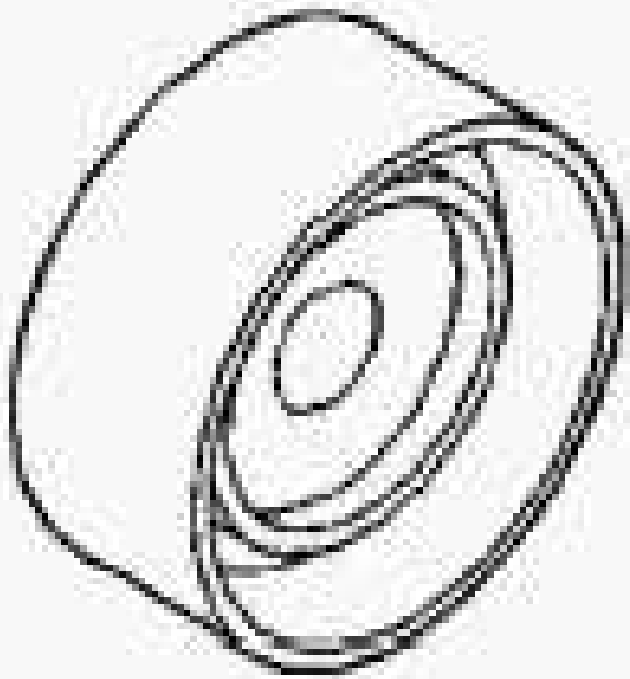
C-4040 - Installer, Bearing
(Originally Shipped In Kit Number(s)
9398.)



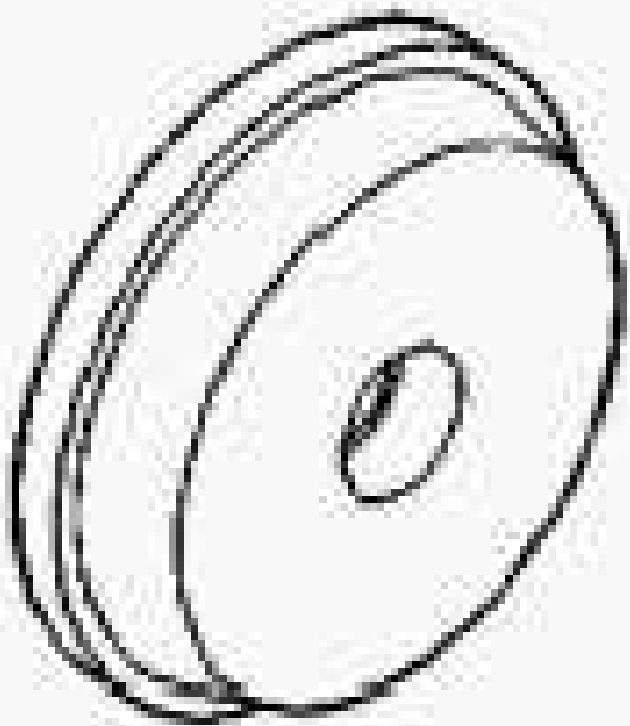
C-4171 - Driver Handle, Universal
(Originally Shipped In Kit Number(s)
9202, 9202A-CAN, 9202CC, 9299,
9299CC, 9299CC, 9300A-CAN.)



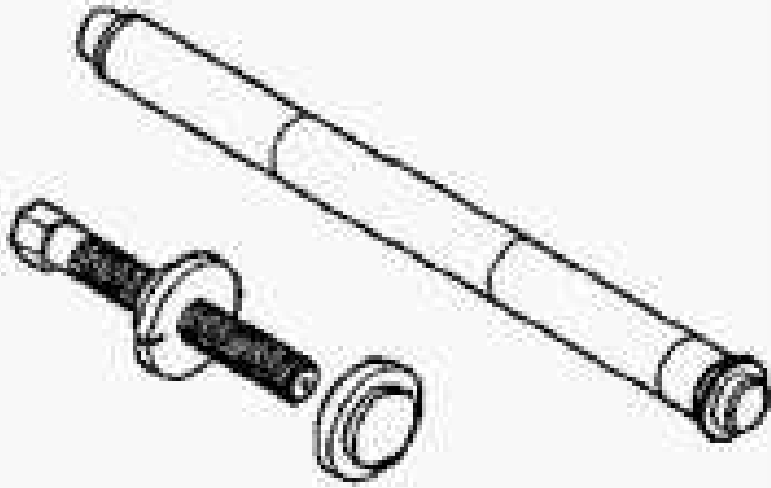
C-4171-2 - Extension, Drive Handle
(Originally Shipped In Kit Number(s)
6672, 8659.)



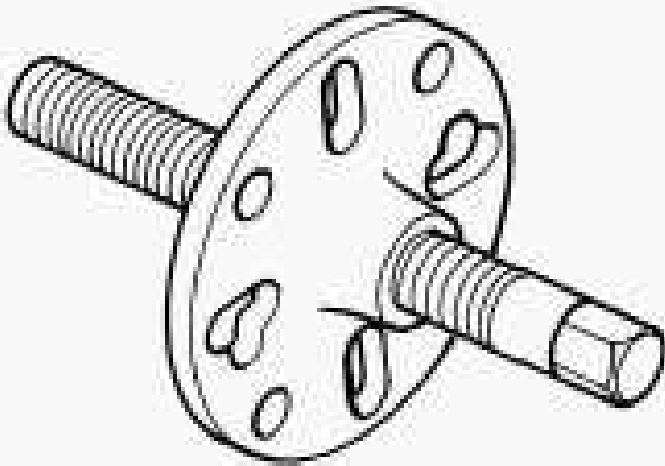
C-4213 - Installer, Bearing
(Originally Shipped In Kit Number(s)
9685, 9695, 9720-SUP, 9945-SUP2,
9995.)



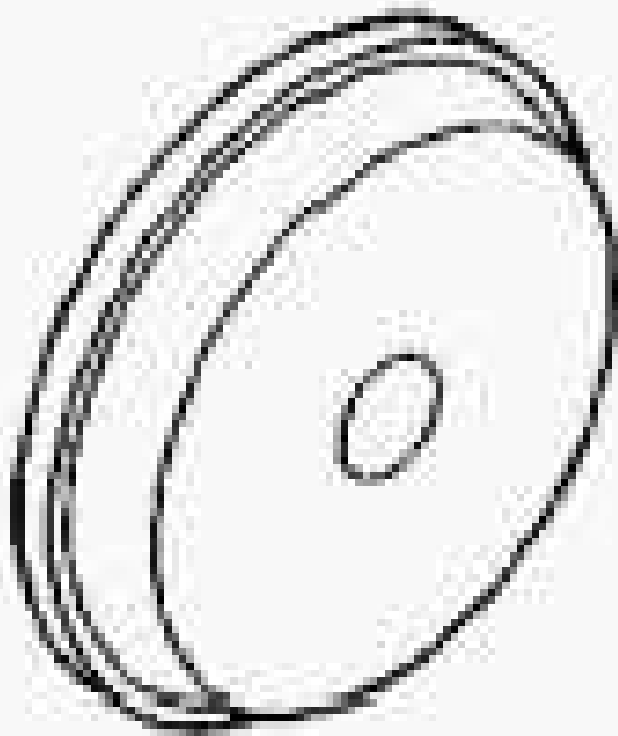
C-4308 - Installer, Bearing Cup
(Originally Shipped In Kit Number(s)
9695.)



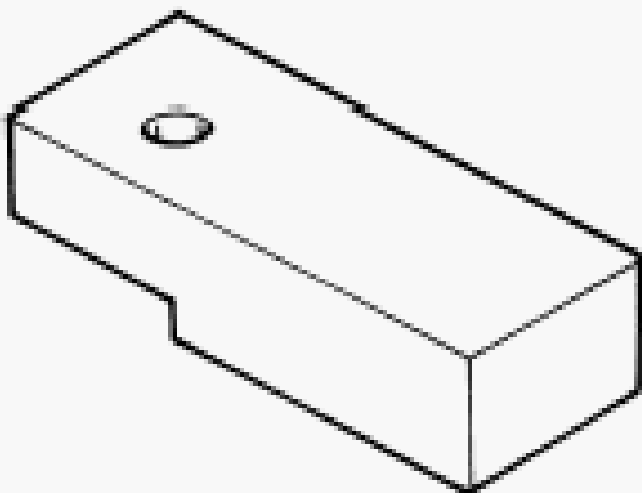
C-4487 - Trac-Lok Axle Tool
(Originally Shipped In Kit Number(s)
8667.)



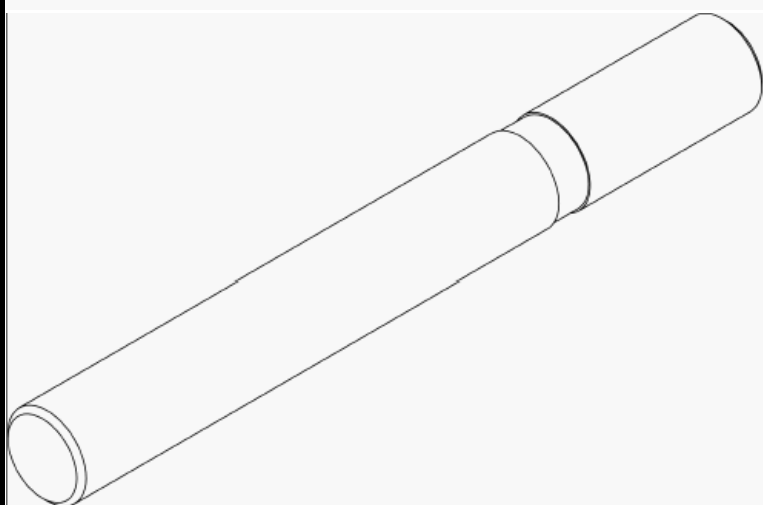
C-452 - Puller, Companion Flange



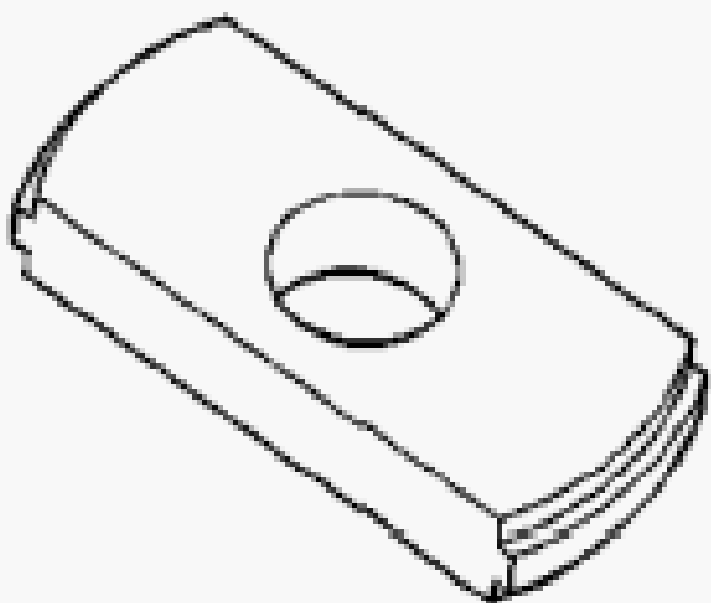
D-111 - Installer, Bearing Cup
(Originally Shipped In Kit Number(s)
9925, 9926.)



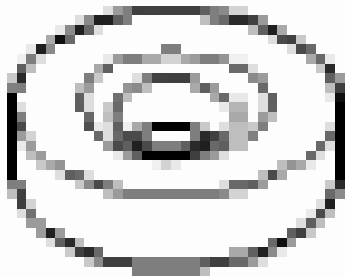
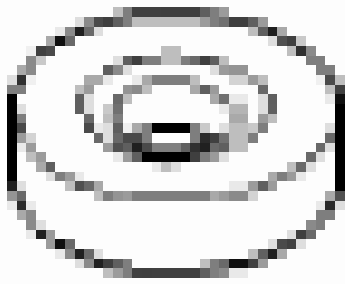
D-115-2A - Block, Scooter
(Originally Shipped In Kit Number(s)
9329-SUP, 9515-SUP, 9516-SUP, 9517-
SUP, 9518, 9519, 9540-SUP, 9541-SUP,
9694, 9926.)



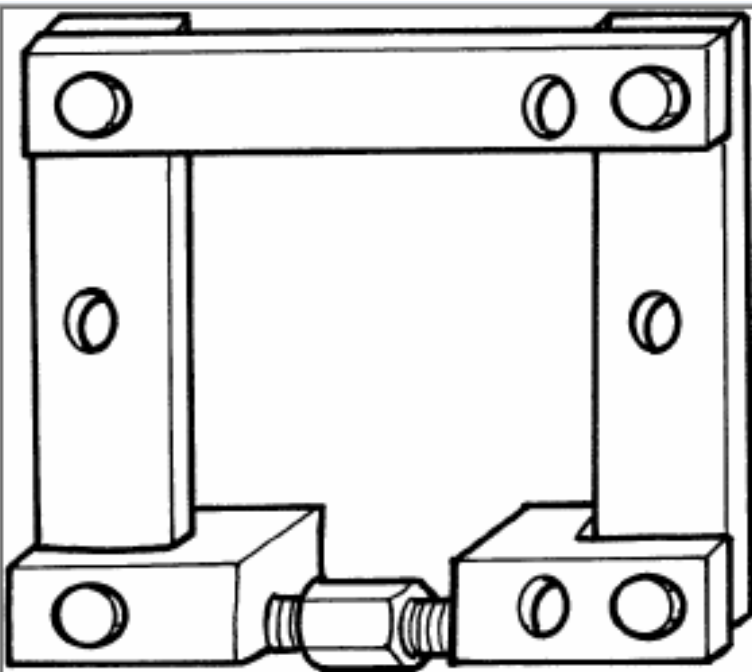
D-115-3 - Arbor
(Originally Shipped In Kit Number(s)
8667, 9516A-CAN.)



D-149 - Remover, Bearing Cup
(Originally Shipped In Kit Number(s)
8207, 8418, C-4306.)



D-348 - Set, Dummy Bearing-Dana 30/35
(Originally Shipped In Kit Number(s)
6776, 6777, 9988, 9989.)



W-129-B - Spreader, Differential
(Originally Shipped In Kit Number(s)
9975.)



2026900170 - Kit, Pressing Tool



2052800030 - Set, Arbor Disc



2052900030 - Bearing, Dummy 80.000 mm



2053000030 - Bearing, Dummy 77.788 mm



**ESSENTIAL
TOOLS**

2053100030 - Bearing, Dummy 96.838 mm



2053200030 - Gauge, Pinion Height 38.800 mm



2053300030 - Gauge, Pinion Height
24.800 mm



2053400030 - Installer, Seal Axle



2053500030 - Installer, Seal Axle

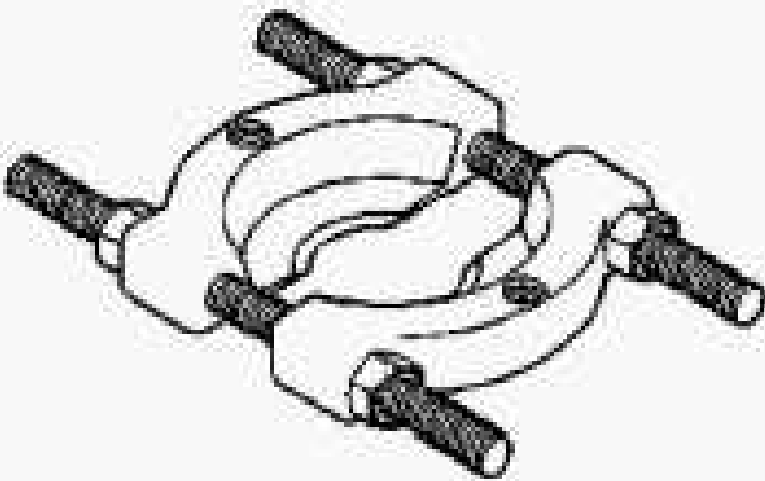


2054200030 - Installer, Pinion Flange

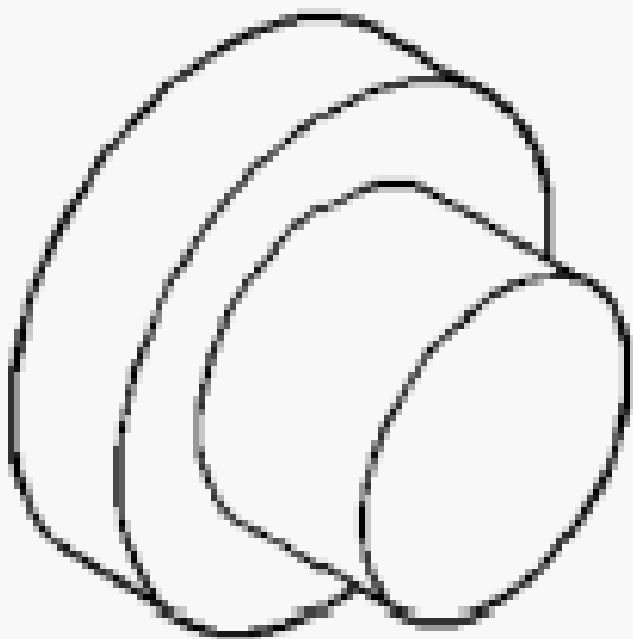


2054300030 - Installer, Bearing Intermediate Shaft

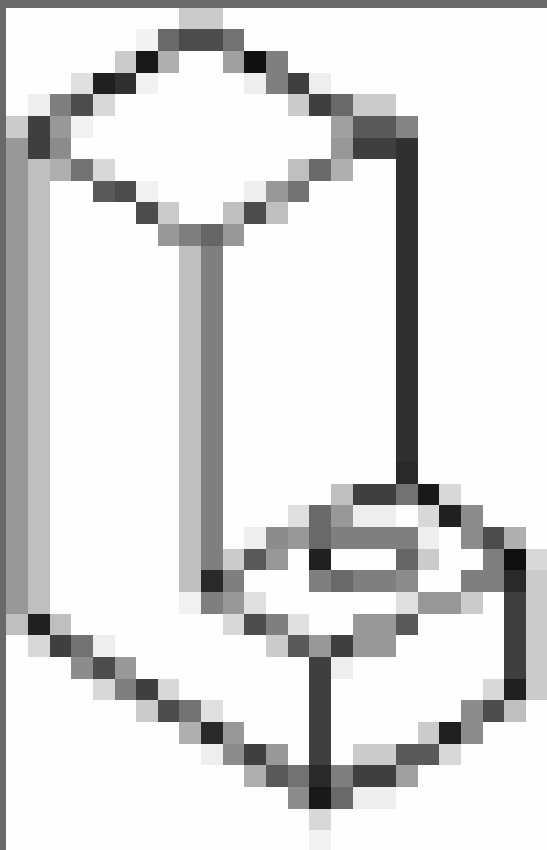
SPECIAL TOOLS - M220



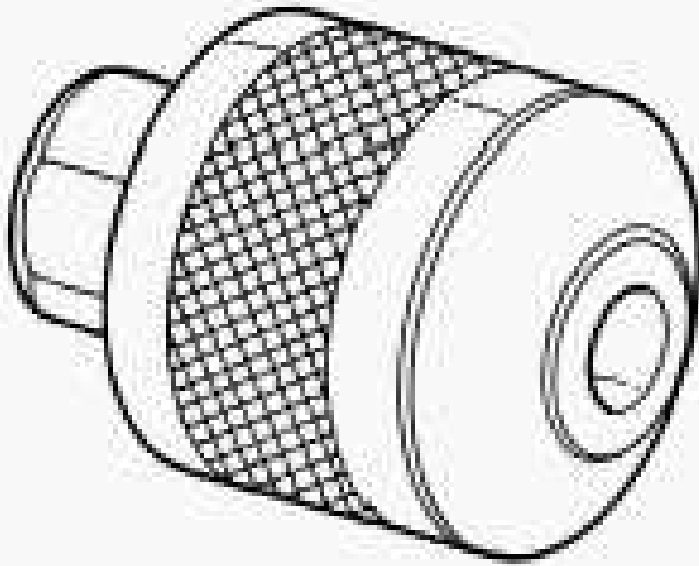
1130 - Splitter, Bearing/Gear
(Originally Shipped In Kit Number(s)
6745, 6947, 6949, 9202, 9202A-CAN,
9202CC, 9299.)



6055 - Thrust Button
(Originally Shipped In Kit Number(s)
6303, 6822.)



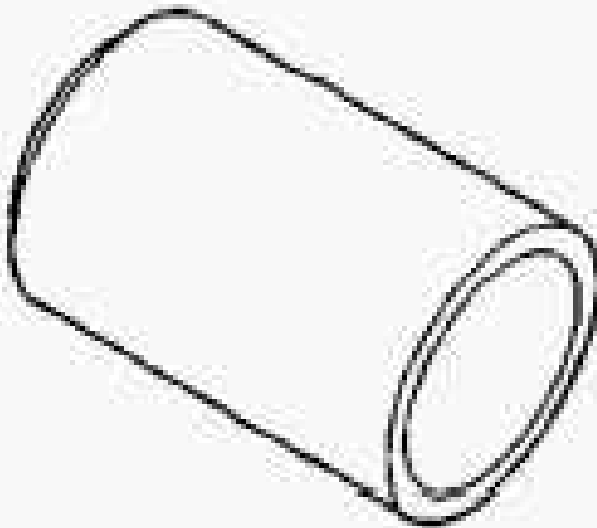
6739 - Block, Height
(Originally Shipped In Kit Number(s)
6730, 9516A-CAN, 9540, 9541.)



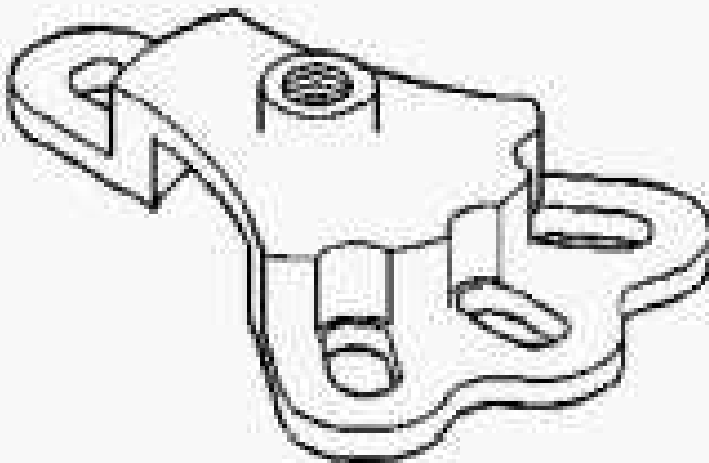
6740 - Cone
(Originally Shipped In Kit Number(s)
6730, 6731, 9516A-CAN, 9540, 9541.)



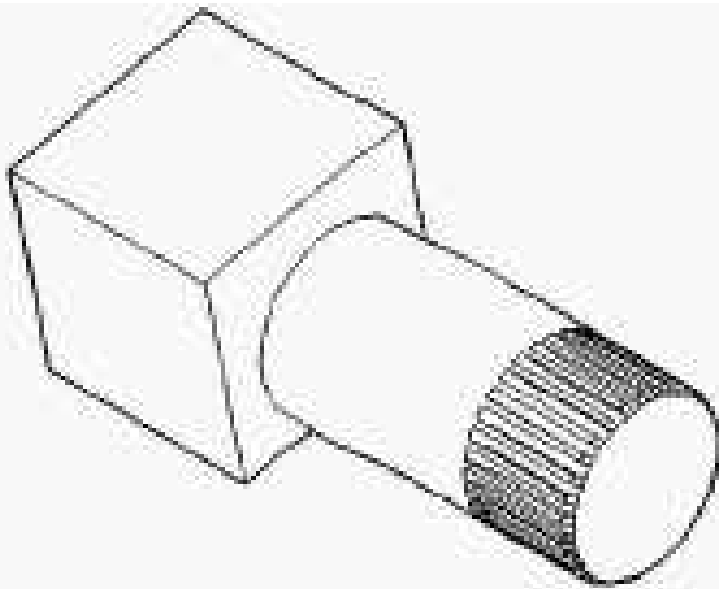
6741 - Screw
(Originally Shipped In Kit Number(s)
6730, 6731, 9516A-CAN, 9540, 9541.)



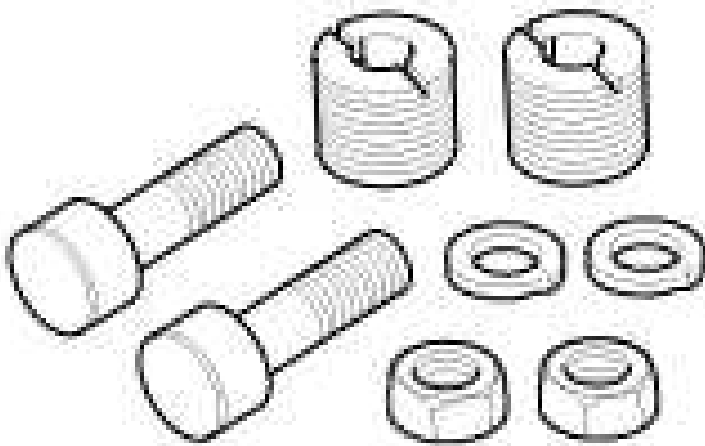
6761 - Installer, Ball Joint
(Originally Shipped In Kit Number(s)
6745, 8165CC.)



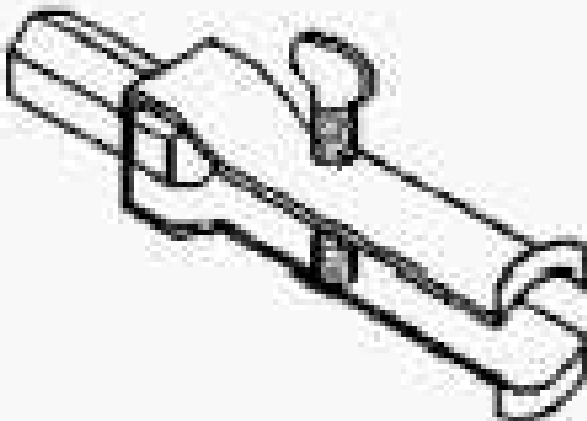
6790 - Tool, Trac-Lok Torque
(Originally Shipped In Kit Number(s)
9202, 9202A-CAN, 9202CC.)



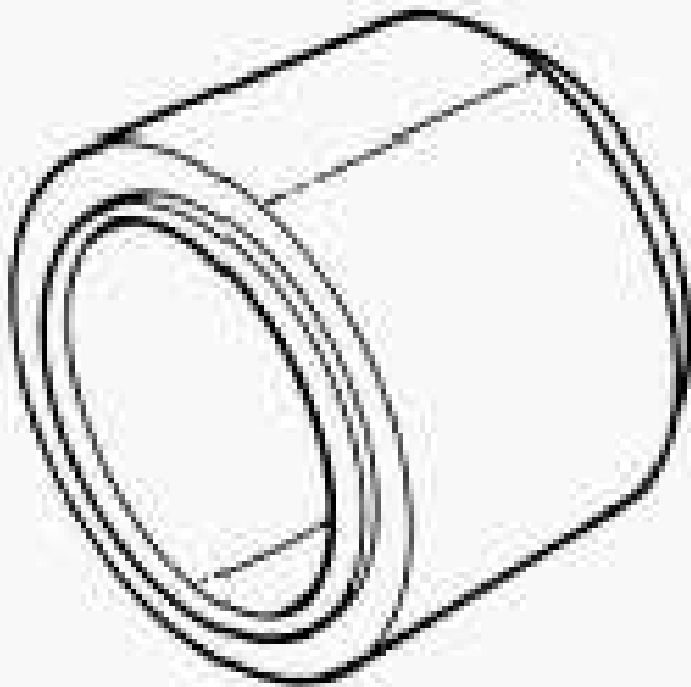
6963B - Fixture, Holding
(Originally Shipped In Kit Number(s)
6945, 6947, 6949.)



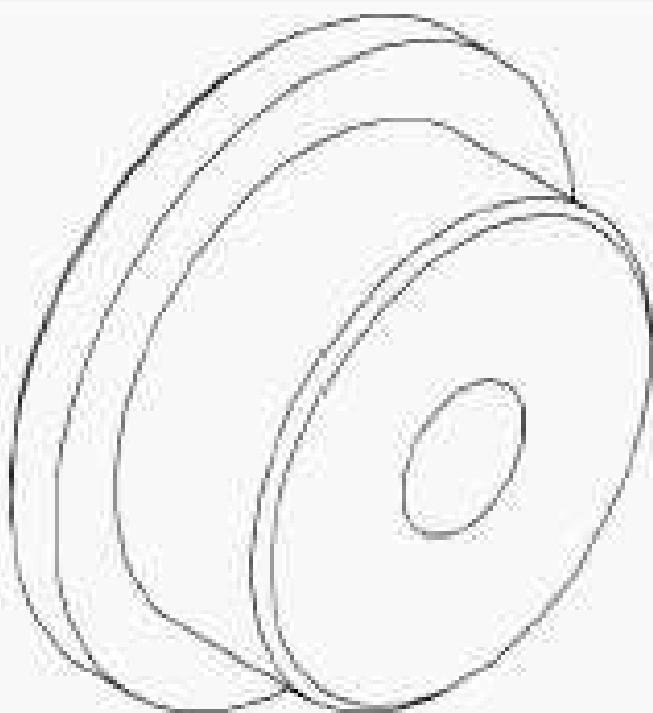
6987B - Adapter Kit, Axle Spreader
(Originally Shipped In Kit Number(s)
6980, 6994, 6995, 8653.)



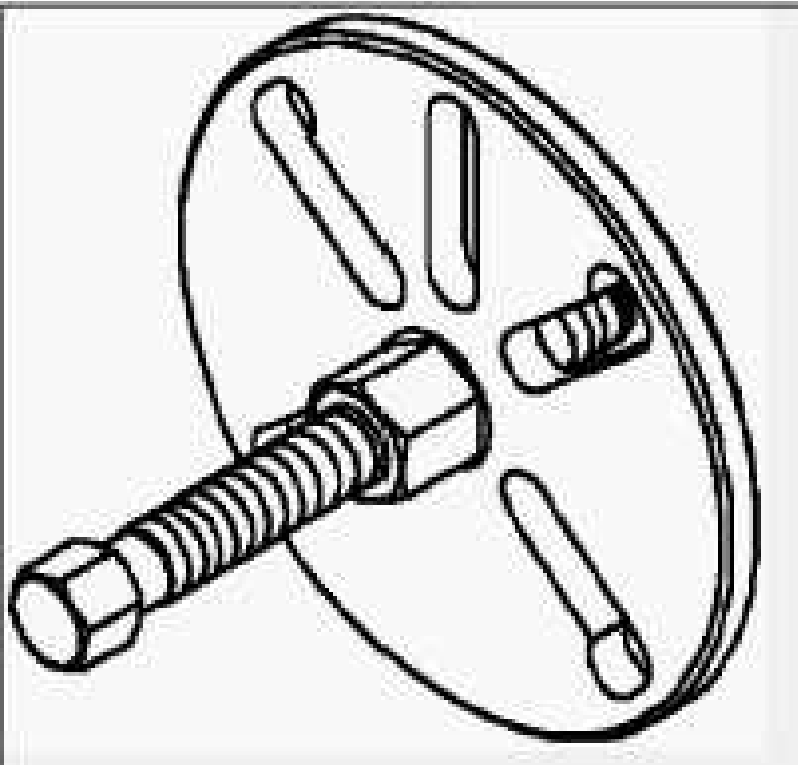
7794-A - Remover, Seal
(Originally Shipped In Kit Number(s)
6645.)



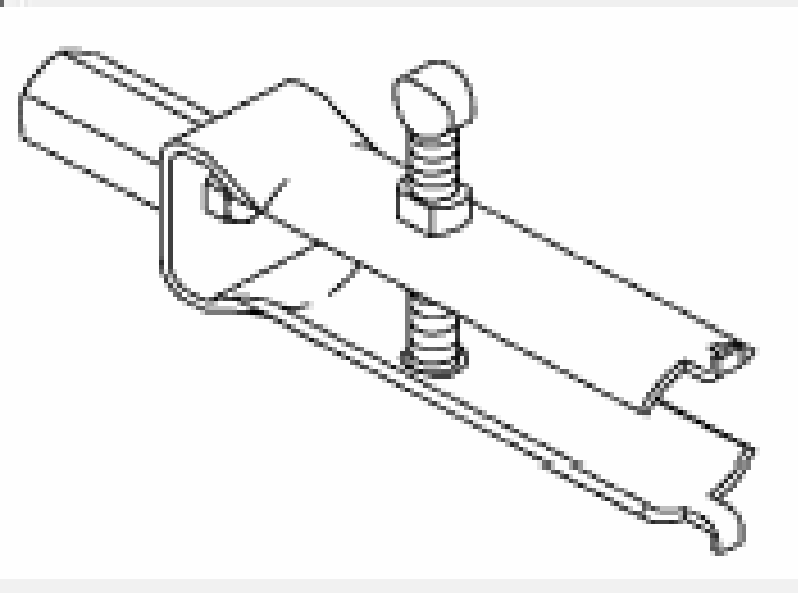
8681 - Installer, Seal
(Originally Shipped In Kit Number(s)
8696, 8696CC, 8710, 8710CC, 9988,
9989.)



8960 - Installer, Bearing Cup
(Originally Shipped In Kit Number(s)
8887, 8887CC.)



8992 - Remover, Pinion Flange
(Originally Shipped In Kit Number(s)
8999, 8999CC, 9299, 9299CC, 9299CC,
9300A-CAN.)



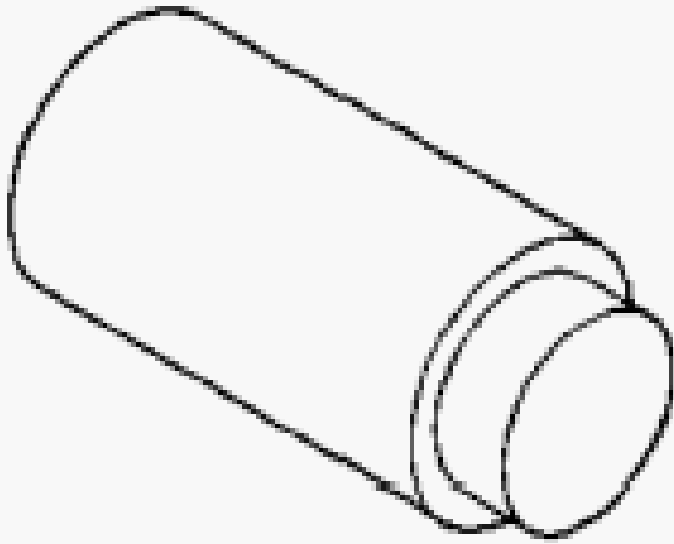
9664 - Remover, Bearing Cup
(Originally Shipped In Kit Number(s)
9675, 9685, 9695.)



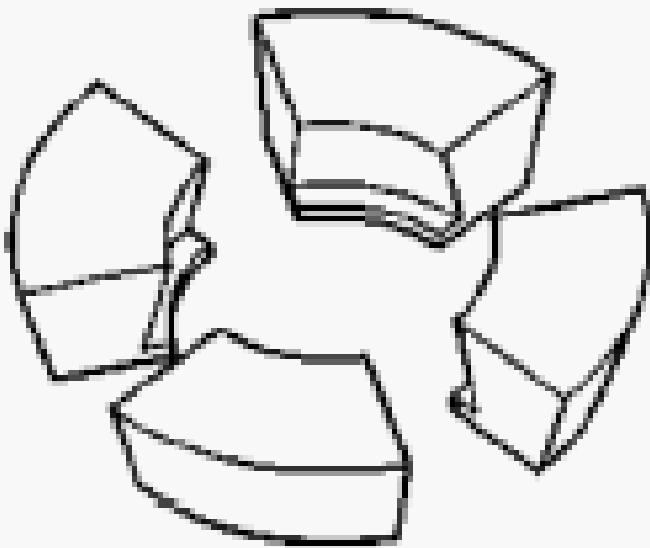
9676 - Adapter Plug
(Originally Shipped In Kit Number(s)
9675, 9685, 9695.)



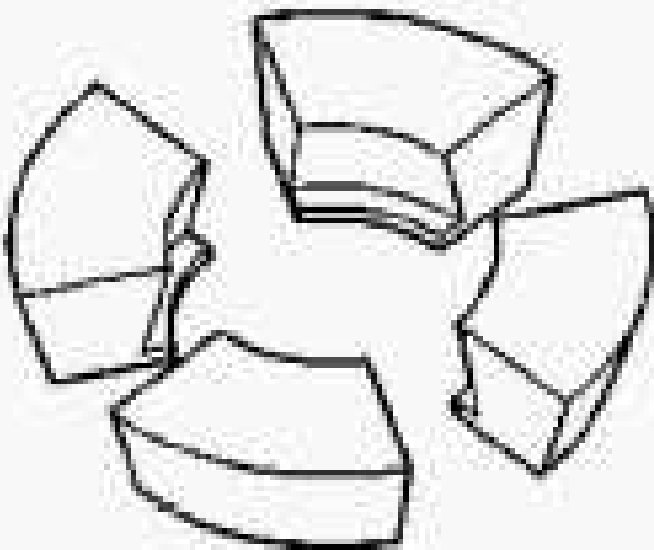
9684 - Installer, Seal
(Originally Shipped In Kit Number(s)
9656.)



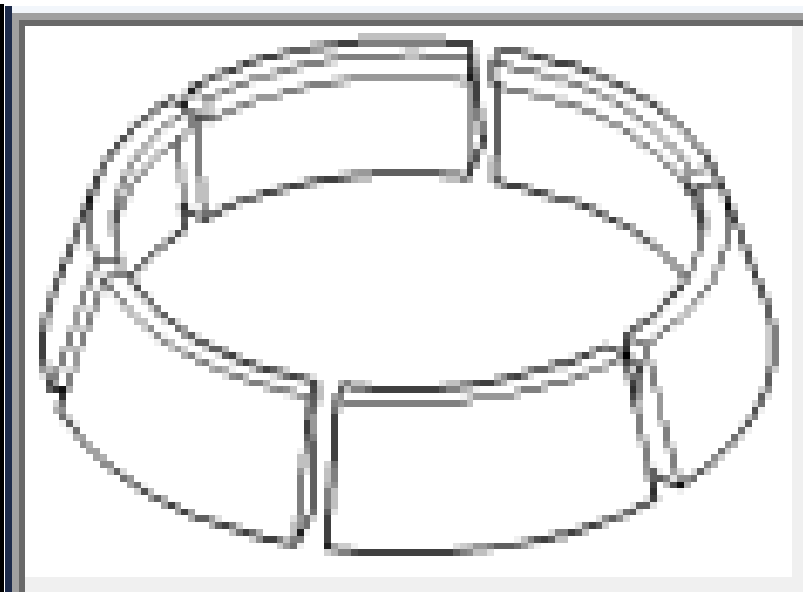
C-293-3 - Adapter, Bearing/Gear
(Originally Shipped In Kit Number(s)
8418, 8837, C-293-M, C-4246-AL, DD-
914-CLT-L.)



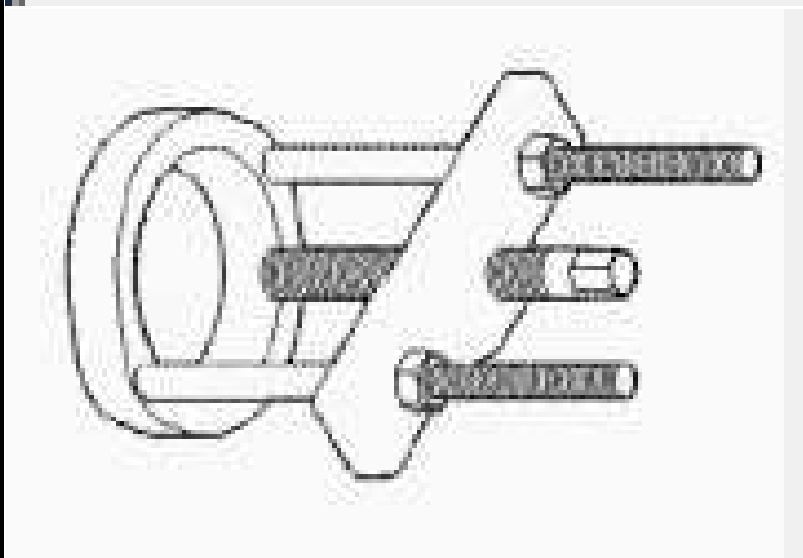
C-293-37 - Block Set, Puller
(Originally Shipped In Kit Number(s)
8418, 8562, C-293-M, DD-914-CLT-L.)



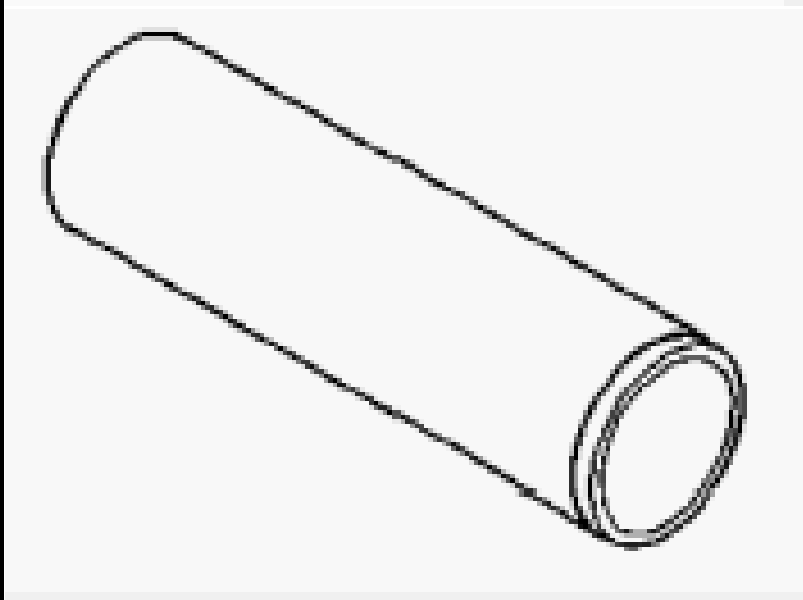
C-293-47 - Block Set, Puller
(Originally Shipped In Kit Number(s)
9975, C-293-M, DD-914-CLT-L.)



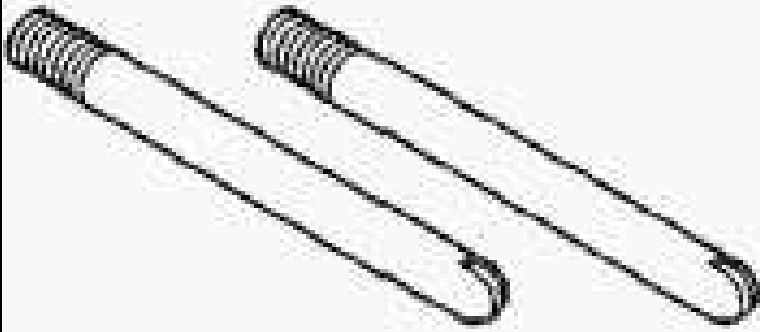
C-293-62 - Block Set, Puller



C-293-PA - Puller, Press
(Originally Shipped In Kit Number(s)
8418, 8837, C-293-M.)



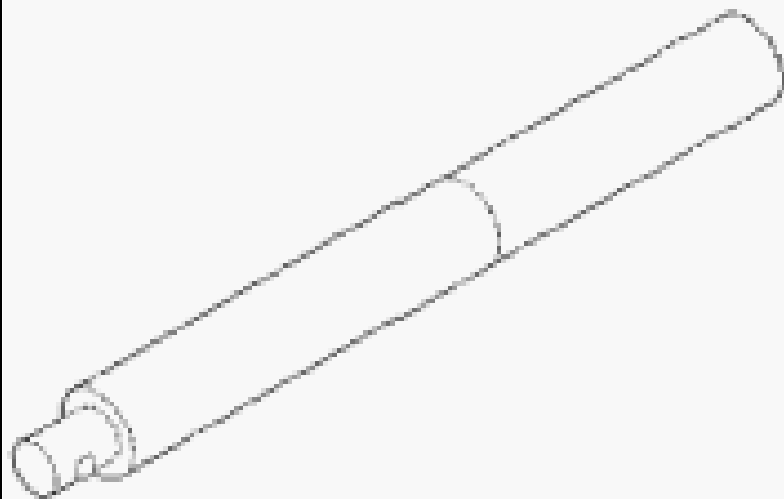
C-3095-A - Installer, Bearing



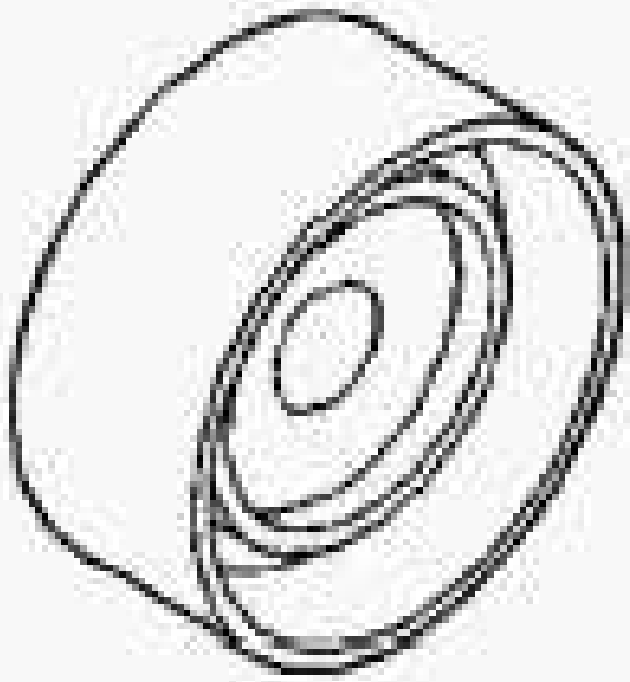
C-3288-B - Set, Alignment Pins
(Originally Shipped In Kit Number(s)
9975.)



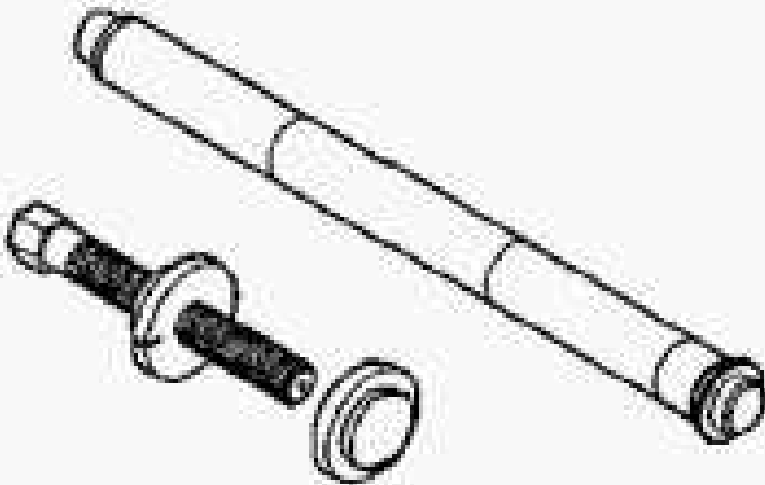
C-3339A - Set, Dial Indicator
(Originally Shipped In Kit Number(s)
9202.)



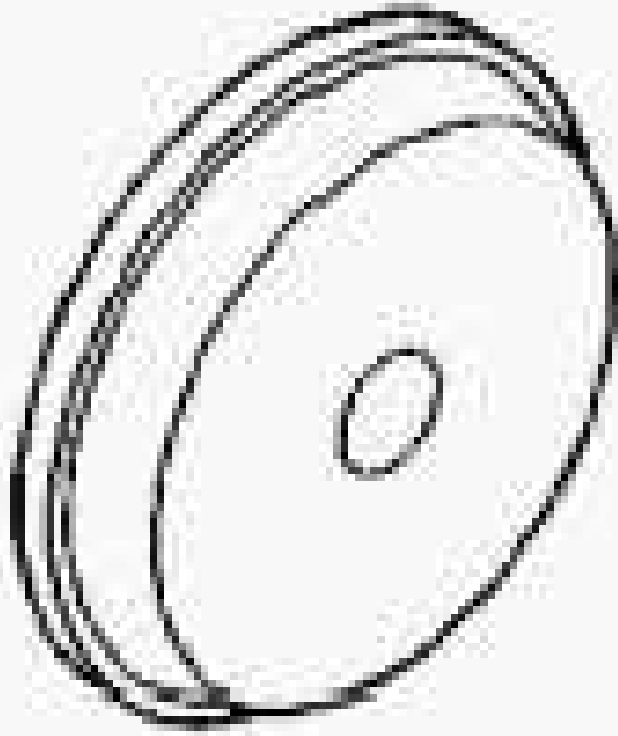
C-4171 - Driver Handle, Universal
(Originally Shipped In Kit Number(s)
9202, 9202A-CAN, 9202CC, 9299,
9299CC, 9299CC, 9300A-CAN.)



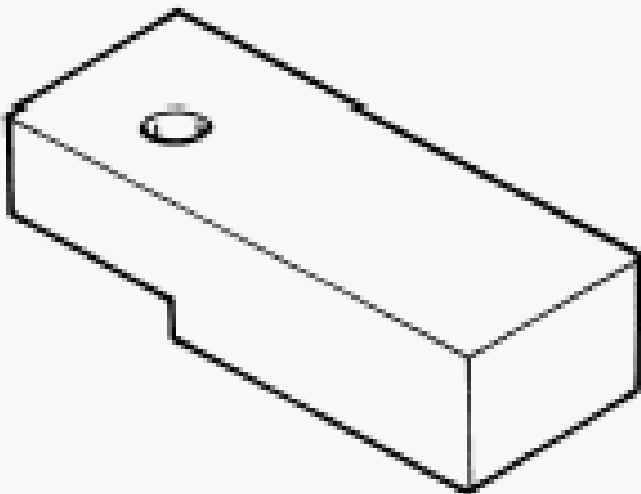
C-4213 - Installer, Bearing
(Originally Shipped In Kit Number(s)
9685, 9695, 9720-SUP, 9945-SUP2,
9995.)



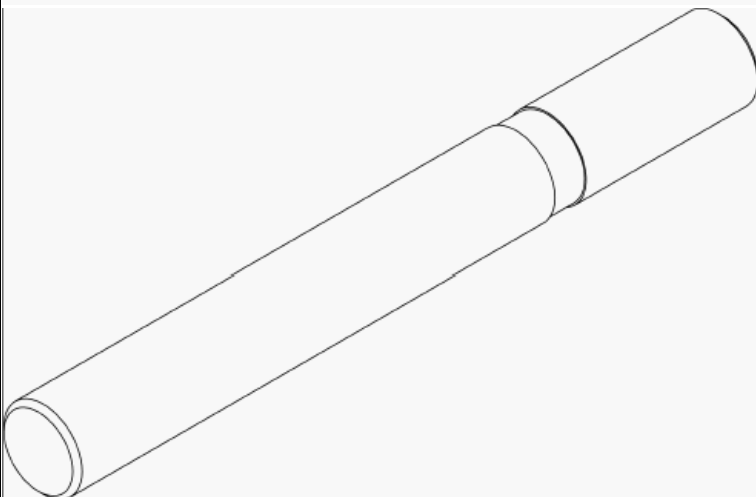
C-4487 - Trac-Lok Axle Tool
(Originally Shipped In Kit Number(s)
8667.)



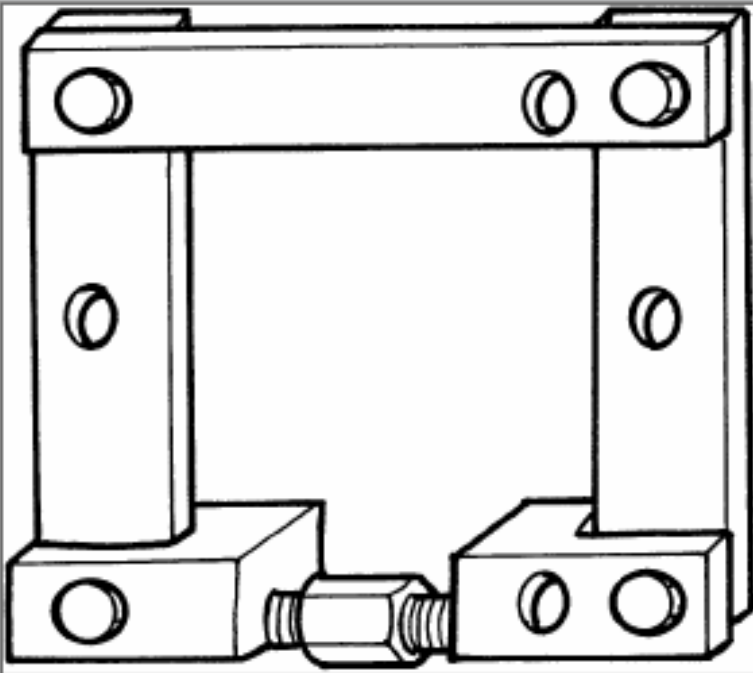
D-111 - Installer, Bearing Cup
(Originally Shipped In Kit Number(s)
9925, 9926.)



D-115-2A - Block, Scooter
(Originally Shipped In Kit Number(s)
9329-SUP, 9515-SUP, 9516-SUP, 9517-
SUP, 9518, 9519, 9540-SUP, 9541-SUP,
9694, 9926.)



D-115-3 - Arbor
(Originally Shipped In Kit Number(s)
8667, 9516A-CAN.)



W-129-B - Spreader, Differential
(Originally Shipped In Kit Number(s)
9975.)



**ESSENTIAL
TOOLS**

2052800030 - Set, Arbor Disc



2052900030 - Bearing, Dummy 80.000
mm



2053000030 - Bearing, Dummy 77.788 mm



**ESSENTIAL
TOOLS**

2053100030 - Bearing, Dummy 96.838 mm



2053200030 - Gauge, Pinion Height 38.800 mm



2053300030 - Gauge, Pinion Height
24.800 mm



2054200030 - Installer, Pinion Flange