

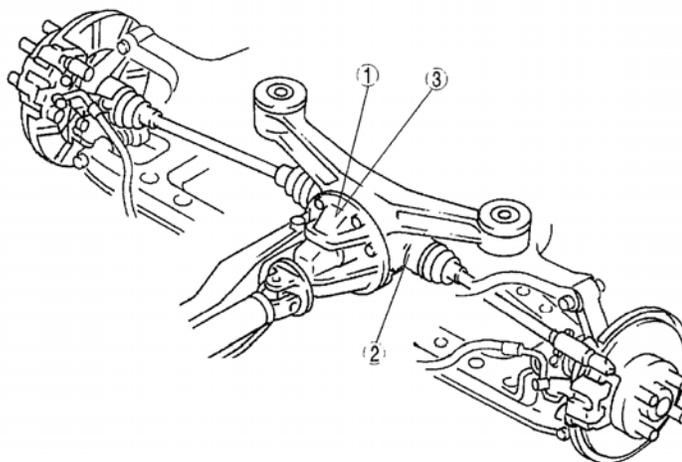
2005 Mazda MX-5 Miata

2005 DRIVELINE/AXLE Differential - MX-5 Miata

2005 DRIVELINE/AXLE

Differential - MX-5 Miata

DIFFERENTIAL LOCATION INDEX



1	Differential oil (See DIFFERENTIAL OIL INSPECTION) (See DIFFERENTIAL OIL REPLACEMENT)
2	Oil seal (See OIL SEAL REPLACEMENT)

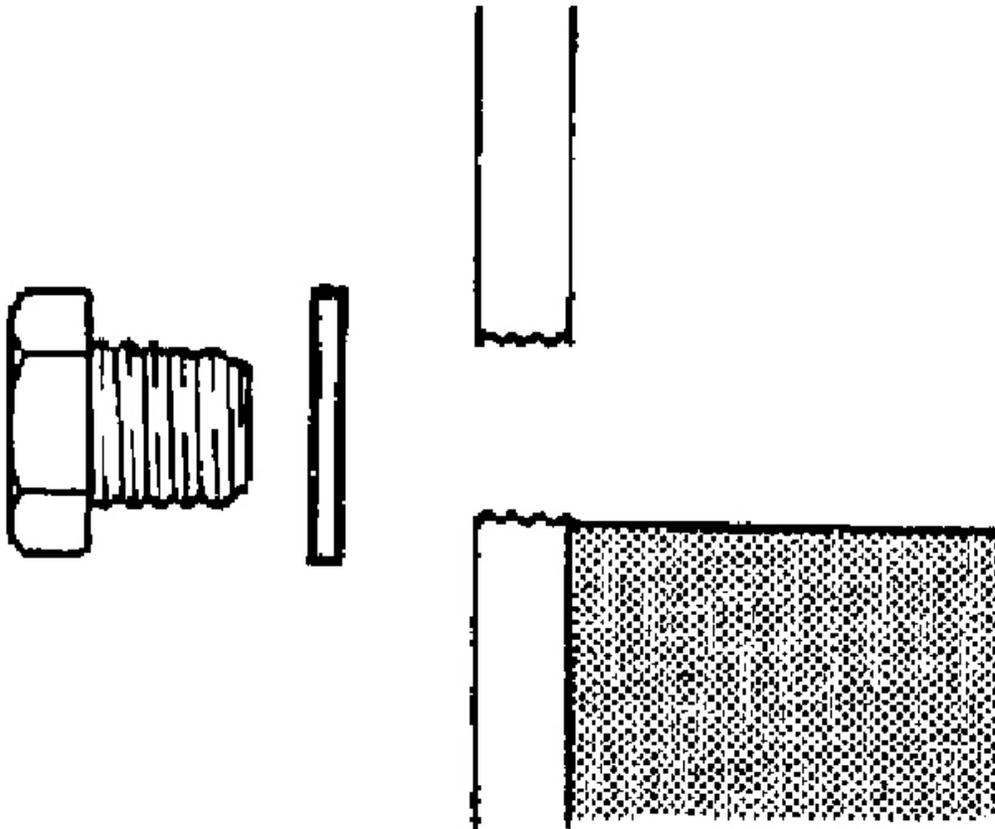
3	Differential (See DIFFERENTIAL REMOVAL/ INSTALLATION) (See DIFFERENTIAL DISASSEMBLY/ ASSEMBLY)
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Fig. 1: Identifying Differential Location
Courtesy of MAZDA MOTORS CORP.

DIFFERENTIAL OIL INSPECTION

1. Remove the filler plug.



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Fig. 2: Removing Filler Plug
Courtesy of MAZDA MOTORS CORP.

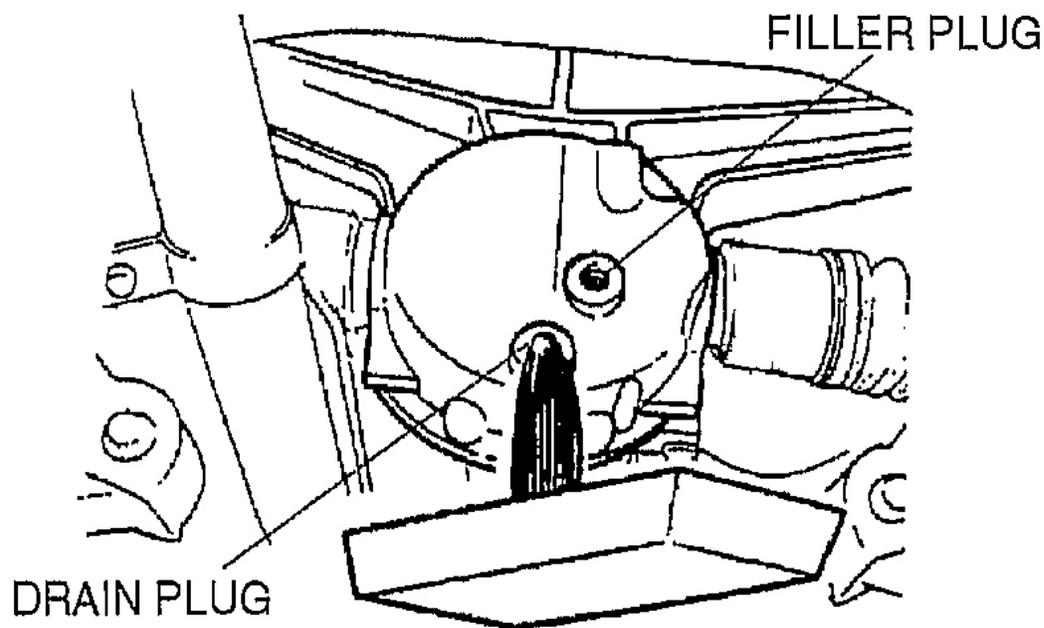
2. Verify that the oil is at the brim of the filler plug hole.
 - If it is low, add the specified oil.
3. Install the filler plug.

Tightening torque

40-53 N.m {4.0-5.5 kgf.m, 29-39 ft.lbf}

DIFFERENTIAL OIL REPLACEMENT

1. Remove the filler and drain plugs.



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Fig. 3: Removing Filler And Drain Plugs
Courtesy of MAZDA MOTORS CORP.

2. Drain the differential oil into a container.
3. Wipe the plugs clean.
4. Install the drain plug and a new washer.

Tightening torque

39.2-53.9 N.m {4.00-5.49 kgf.m, 29.0-39.7 ft.lbf}

5. Add the specified oil from the filler plug until the level reaches the brim of the plug hole.

Specified oil

Type:API service GL-5 SAE 90

Capacity (Approximate quantity)

BP with TC:0.7-0.9 L {0.8-0.9 US qt, 0.62-0.79 imp qt}

BP:1.0L {1.1 US qt, 0.9 Imp qt}

6. Install the filler plug.

Tightening torque

39.2-53.9 N.m {4.00-5.49 kgf.m, 29.0-39.7 ft.lbf}

OIL SEAL REPLACEMENT

1. On level ground, jack up the vehicle and support it on safety stands.
2. Drain the differential oil.

NOTE:

- For easier installation, do not depress the brake pedal after removing the brake caliper component.

3. Remove the brake caliper component, then suspend the brake caliper component using a rope.
4. Remove the lower arm installation bolt and nut.
5. Pull the rear hub support from the drive shaft.

NOTE:

- If the drive shaft will not come out of the rear hub support easily, install a discarded nut onto the drive shaft so that the nut is flush with the end of the drive shaft. Tap the nut with a copper hammer to loosen the drive shaft from the wheel hub.

6. Remove the drive shaft from the differential. (See **DRIVE SHAFT REMOVAL NOTE** .)
7. Remove the oil seal.
8. Apply lithium-based grease to the new oil seal lip and install it using the **SST**.

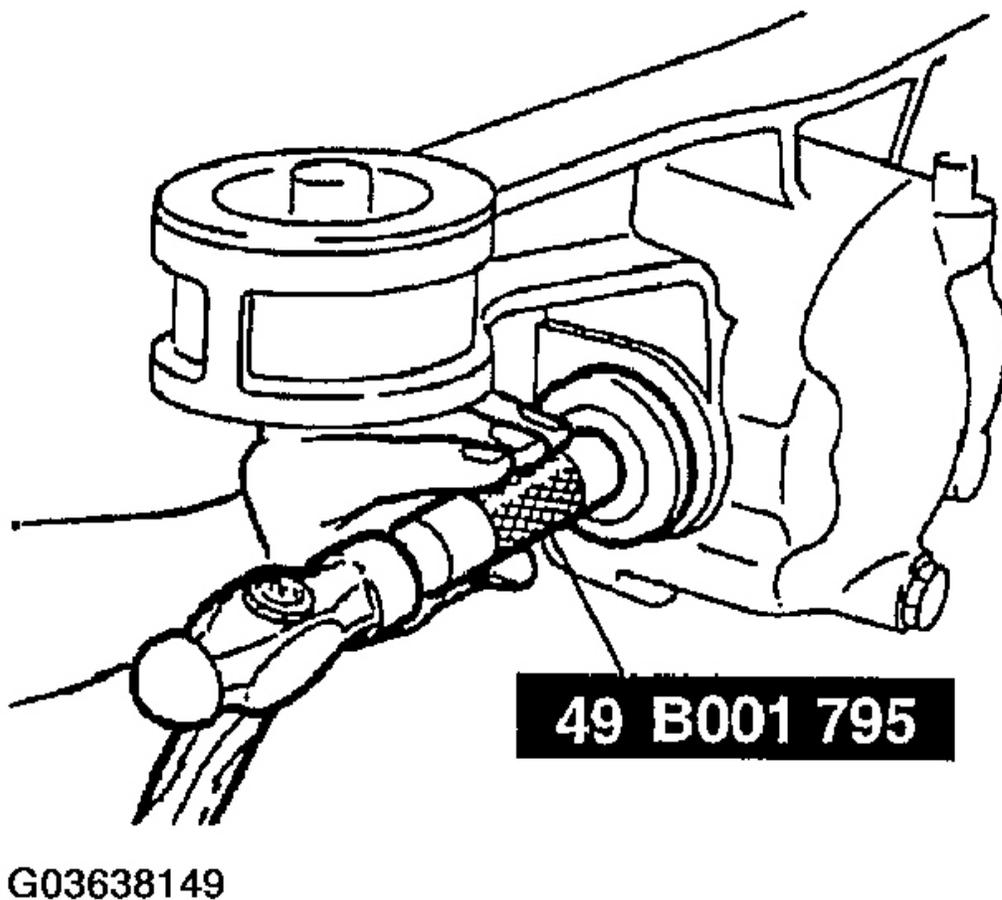


Fig. 4: Applying Lithium-Based Grease To New Oil Seal Lip
Courtesy of MAZDA MOTORS CORP.

9. Install a new clip onto the drive shaft. (See **DRIVE SHAFT REMOVAL NOTE** .)
10. Install the lower arm installation bolt and nut.

Tightening torque

54-76 N.m {5.5-7.8 Kgf.m, 40-56 ft.lbf}

11. Install the brake caliper component.

Tightening torque

50-68 N.m {5.0-7.0 kgf.m, 37-50 ft.lbf}

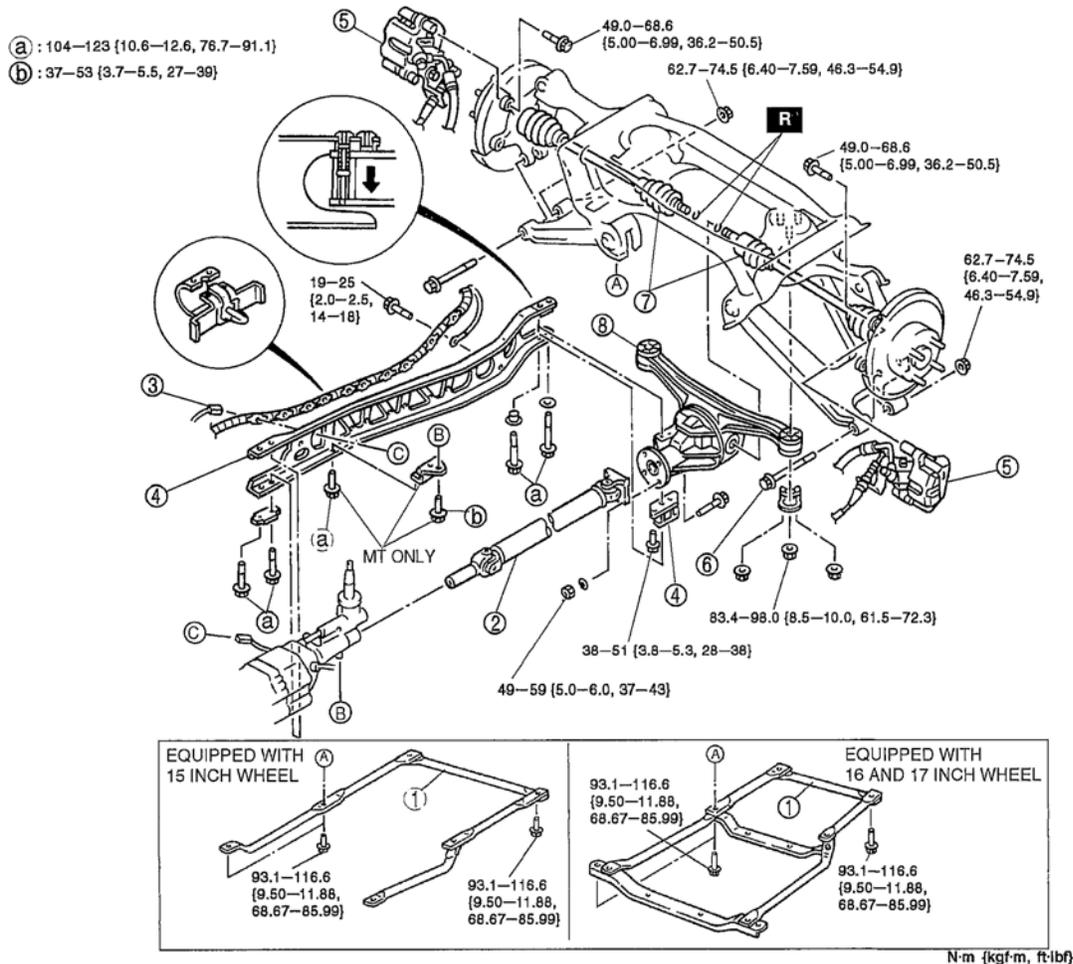
12. Add the specified oil. (See **DIFFERENTIAL OIL REPLACEMENT.**)
13. Adjust the rear wheel alignment.

DIFFERENTIAL REMOVAL/INSTALLATION

1. Drain the differentia oil.
2. Remove the crossmember bracket. (See **CROSSMEMBER BRACKET REMOVAL/INSTALLATION .**)
3. Remove the main silencer. (See **EXHAUST SYSTEM REMOVAL/INSTALLATION [BP] .**) (See **EXHAUST SYSTEM REMOVAL/INSTALLATION [BP WITH TC] .**)
4. Remove in the order indicated in the table.
5. Install in the reverse order of removal.
6. Add the specified oil to the specified level. (See **DIFFERENTIAL OIL REPLACEMENT.**)

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1	Rear crossbar (See REAR CROSSMEMBER REMOVAL/ INSTALLATION)
2	Propeller shaft (See PROPELLER SHAFT REMOVAL/ INSTALLATION)
3	Speedometer cable
4	Power plant frame (PPF), Differential mounting spacer (See Power Plant Frame (PPF), Differential Mounting Spacer Removal Note) (See Power Plant Frame (PPF), Differential Mounting Spacer Installation Note)

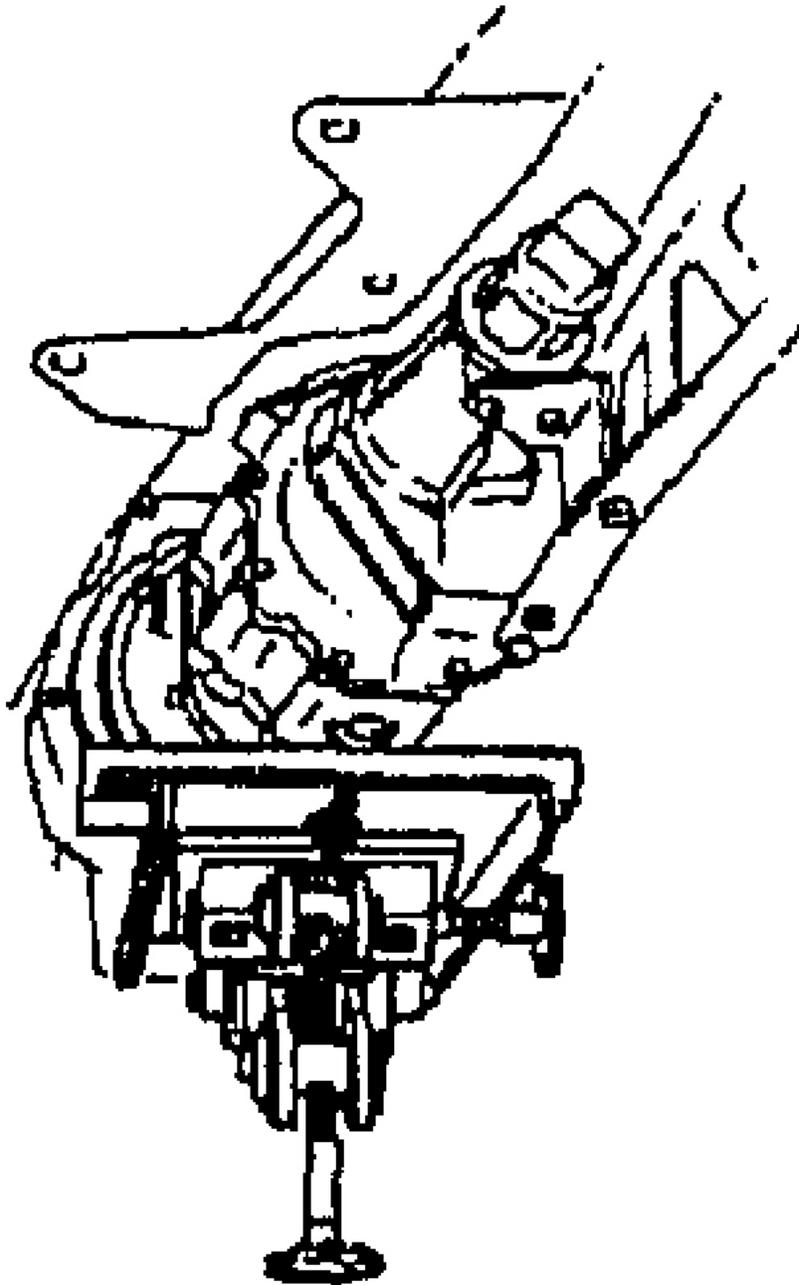
5	Brake caliper component
6	Bolt
7	Drive shafts (See Drive Shaft Removal Note) (See Drive Shaft Installation Note)
8	Differential (See Differential Removal Note)

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Fig. 5: Exploded View Of Differential & Torque Specifications
 Courtesy of MAZDA MOTORS CORP.

POWER PLANT FRAME (PPF), DIFFERENTIAL MOUNTING SPACER REMOVAL NOTE

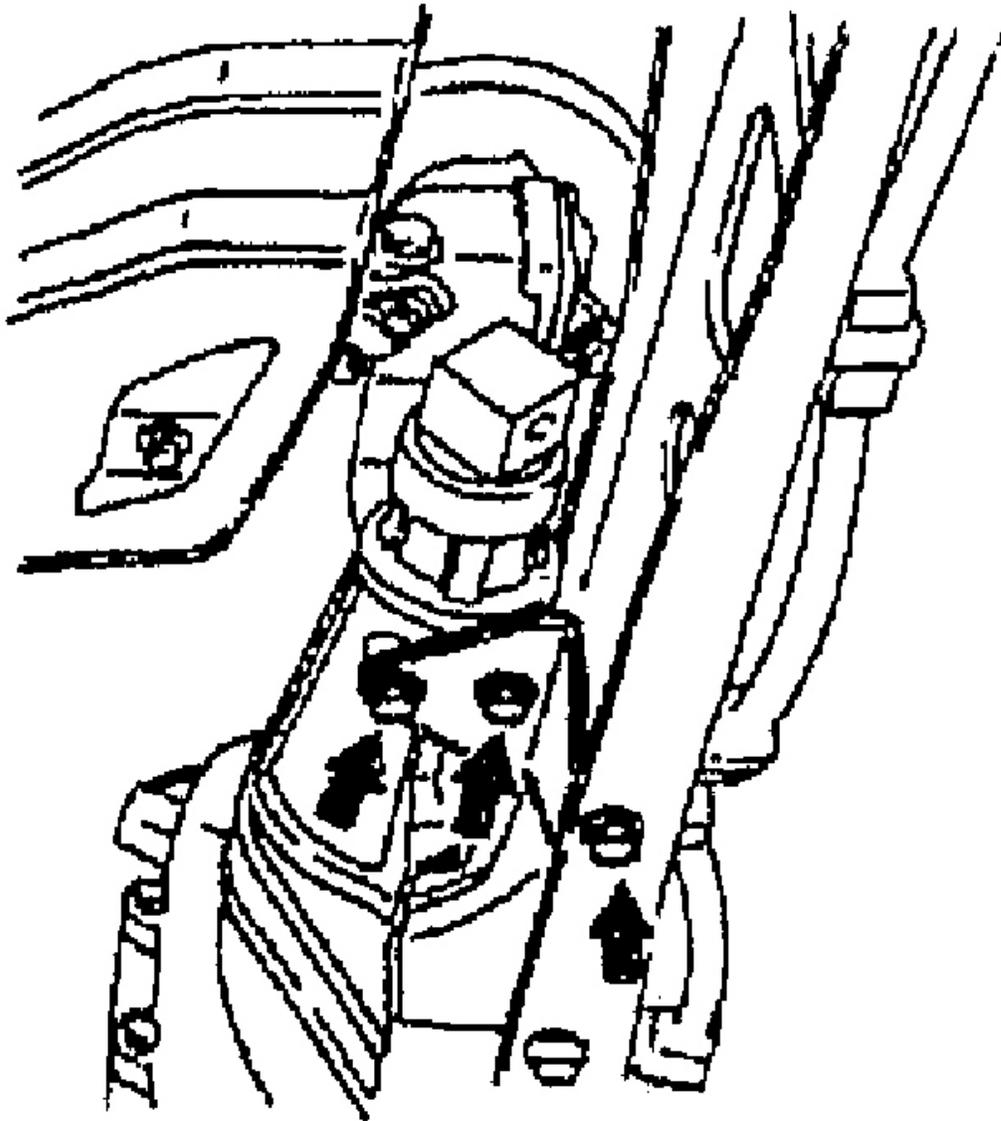
1. Disconnect the wire harness from the PPF.
2. Support the transmission with a jack.



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Fig. 6: Disconnecting Harness From PPF
Courtesy of MAZDA MOTORS CORP.

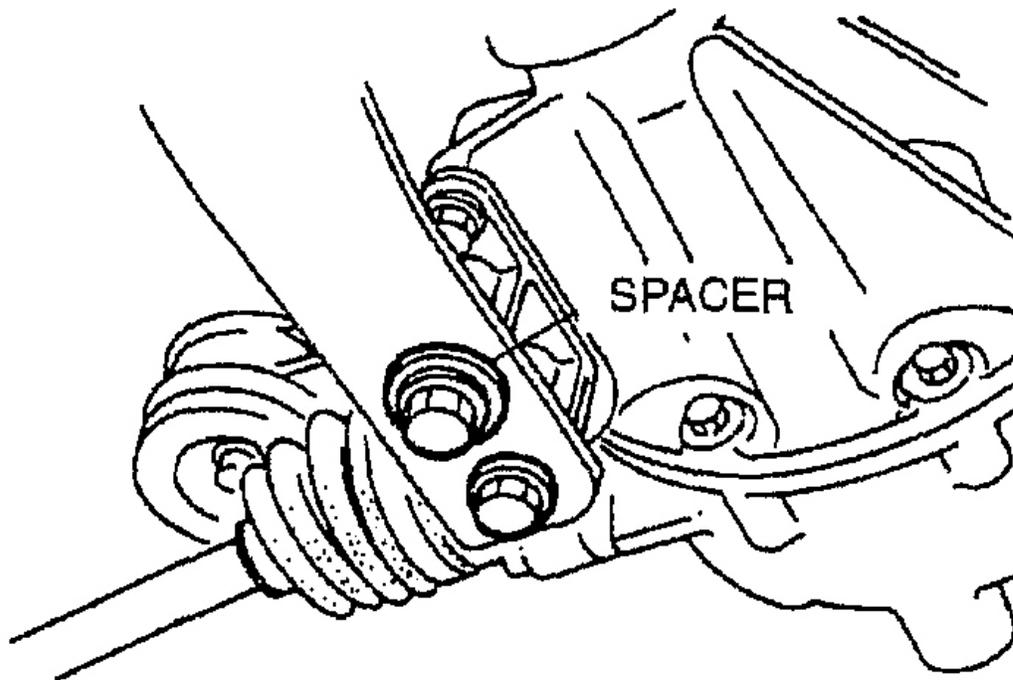
3. Remove the PPF bracket.



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Fig. 7: Removing PPF Bracket
Courtesy of MAZDA MOTORS CORP.

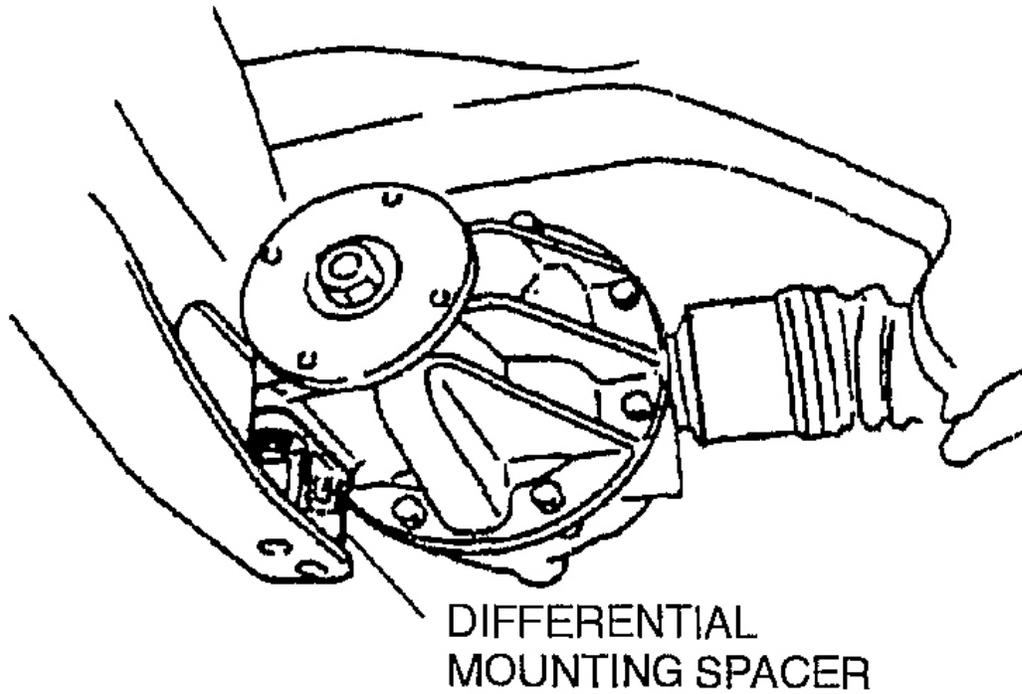
4. Remove the differential-side bolts, and pry out the spacer.



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Fig. 8: Removing Differential-Side Bolts
Courtesy of MAZDA MOTORS CORP.

5. Remove the differential mounting spacer.



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Fig. 9: Removing Differential Mounting Spacer (1 Of 2)
Courtesy of MAZDA MOTORS CORP.

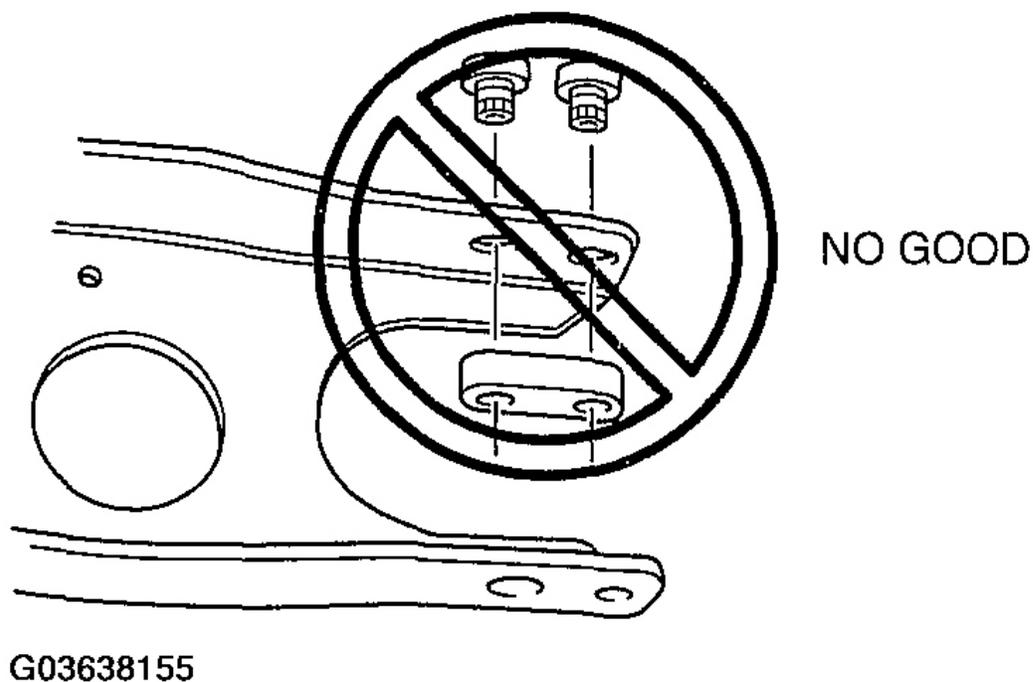


Fig. 10: Removing Differential Mounting Spacer (2 Of 2)
Courtesy of MAZDA MOTORS CORP.

CAUTION:

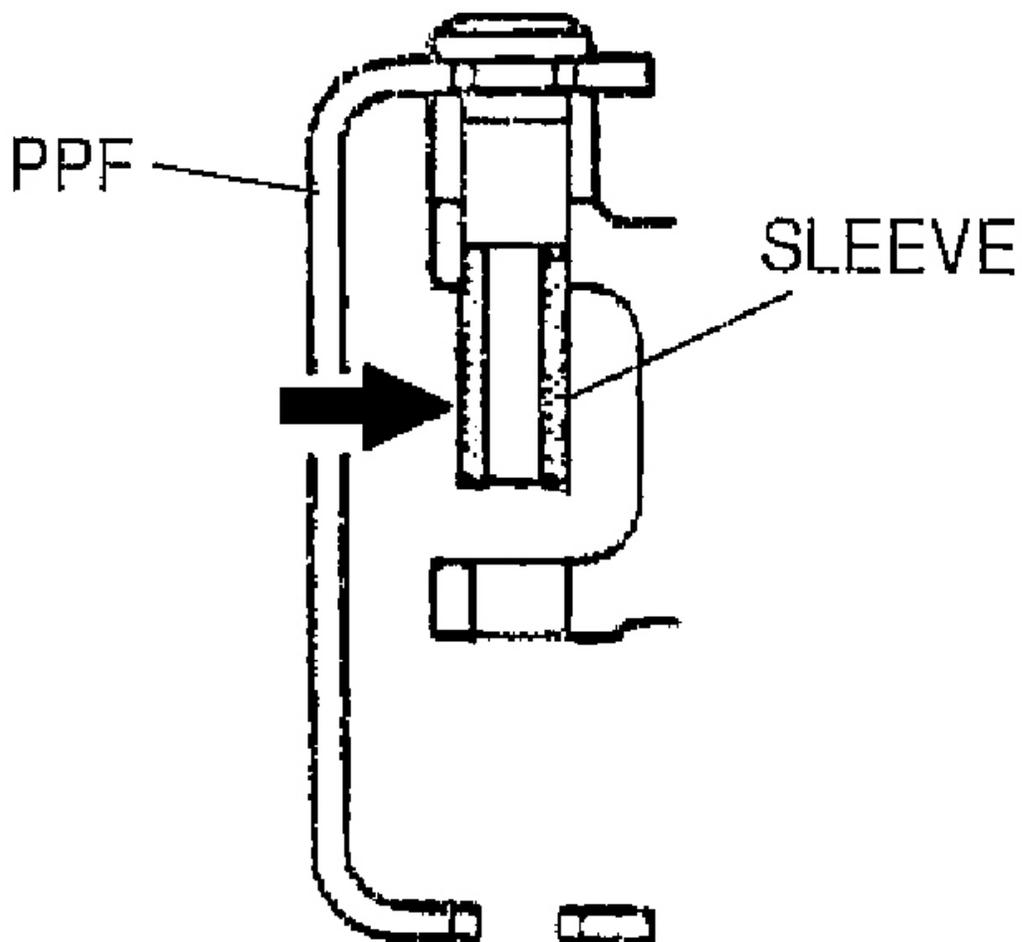
- Removing the PPF spacers will reduce the performance of the PPF. Do not remove the PPF spacers.
- If the spacers are removed, replace the PPF as a component.

6. Remove the transmission-side bolts, and remove the PPF.

NOTE:

- If the sleeve cannot be removed easily, tap the side of sleeve with a plastic hammer.

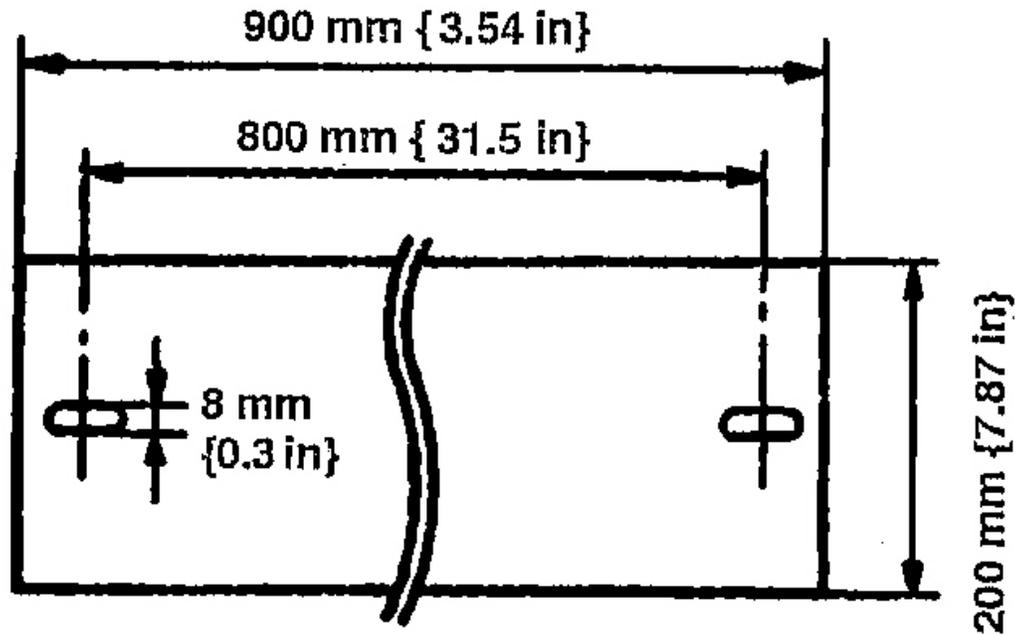
7. Remove the sleeve.



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Fig. 11: Removing Sleeve
Courtesy of MAZDA MOTORS CORP.

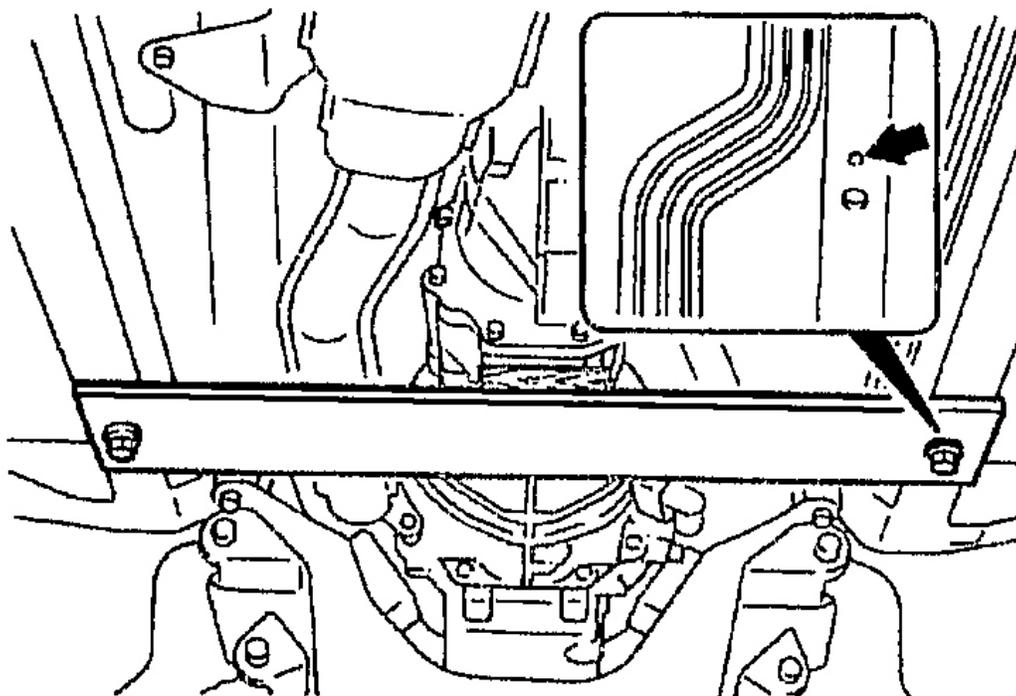
8. To prevent damaging the fire wall and engine mount, support the transmission as follows.
 1. Prepare a steel plate (as shown in **Fig. 12**), a wooden block, bolts (M8x1.25), and washers.



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Fig. 12: Preparing A Steel Plate Wooden Block Bolts
Courtesy of MAZDA MOTORS CORP.

2. Install a wooden block as shown in Fig. 13.



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Fig. 13: Installing A Wooden Block
Courtesy of MAZDA MOTORS CORP.

DIFFERENTIAL REMOVAL NOTE

1. Support the differential using a jack.
2. Lower the differential and move it forward.

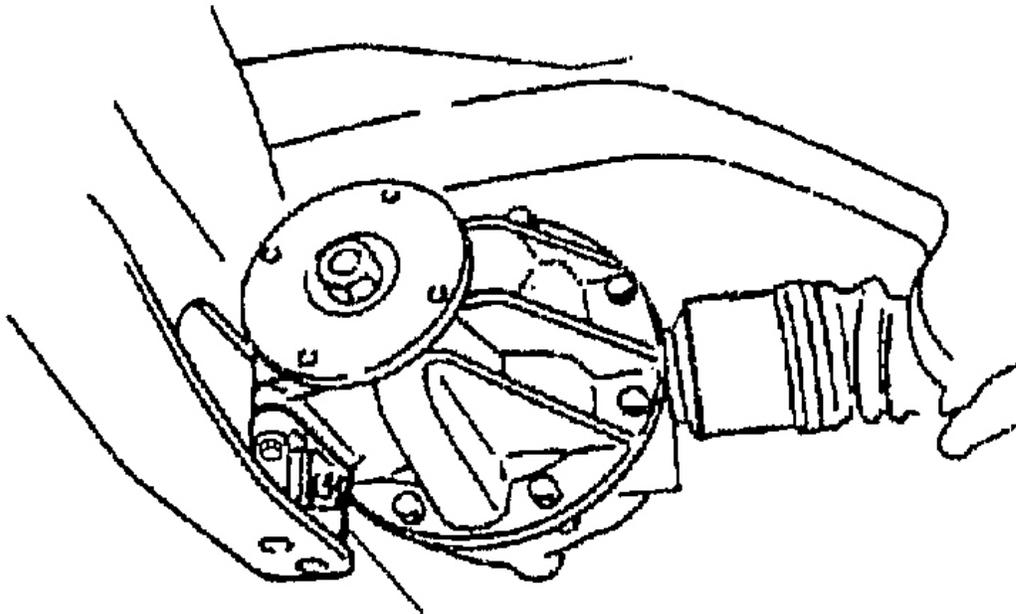
POWER PLANT FRAME (PPF), DIFFERENTIAL MOUNTING SPACER INSTALLATION NOTE

1. Install the differential mounting spacer.

Tightening torque

38-51 N.m {3.8-5.3 kgf.m, 28-38 ft.m}

2. Support the transmission horizontally with a jack.
3. Install the PPF, and tighten the transmission side bolt slightly.
4. Align the PPF of the differential side, and install the sleeve.

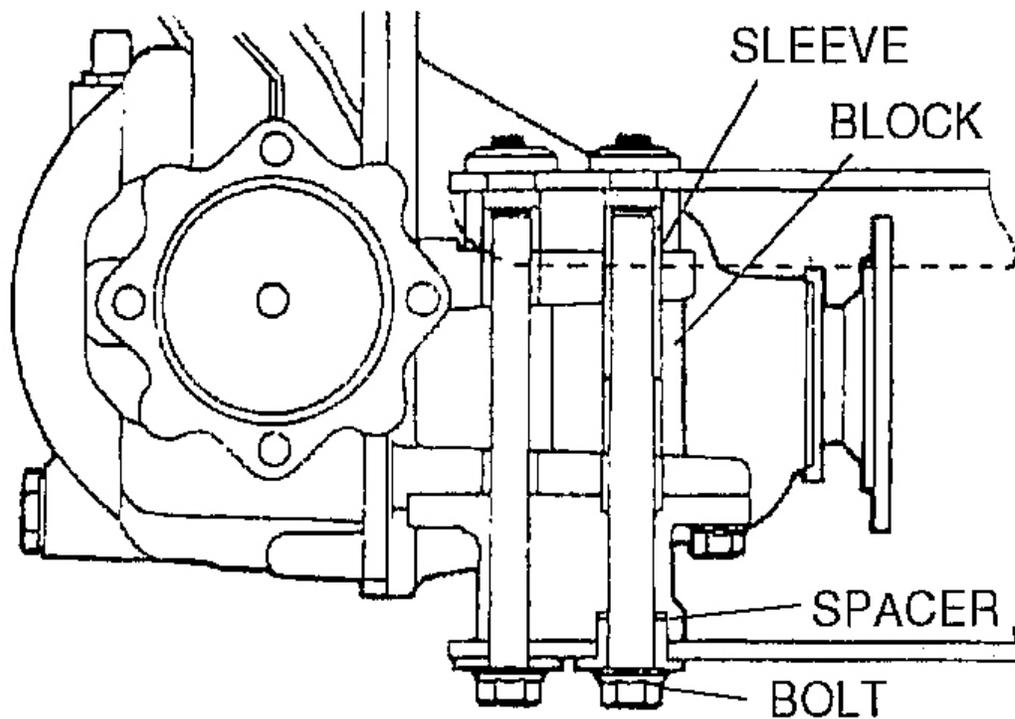


DIFFERENTIAL MOUNTING SPACER

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Fig. 14: Installing Sleeve
Courtesy of MAZDA MOTORS CORP.

5. Install the spacer and bolt to the front side installation hole of the differential side.



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Fig. 15: Installing Spacer And Bolt To Front Side
Courtesy of MAZDA MOTORS CORP.

6. Install the PPF installation bolt in the order as shown.

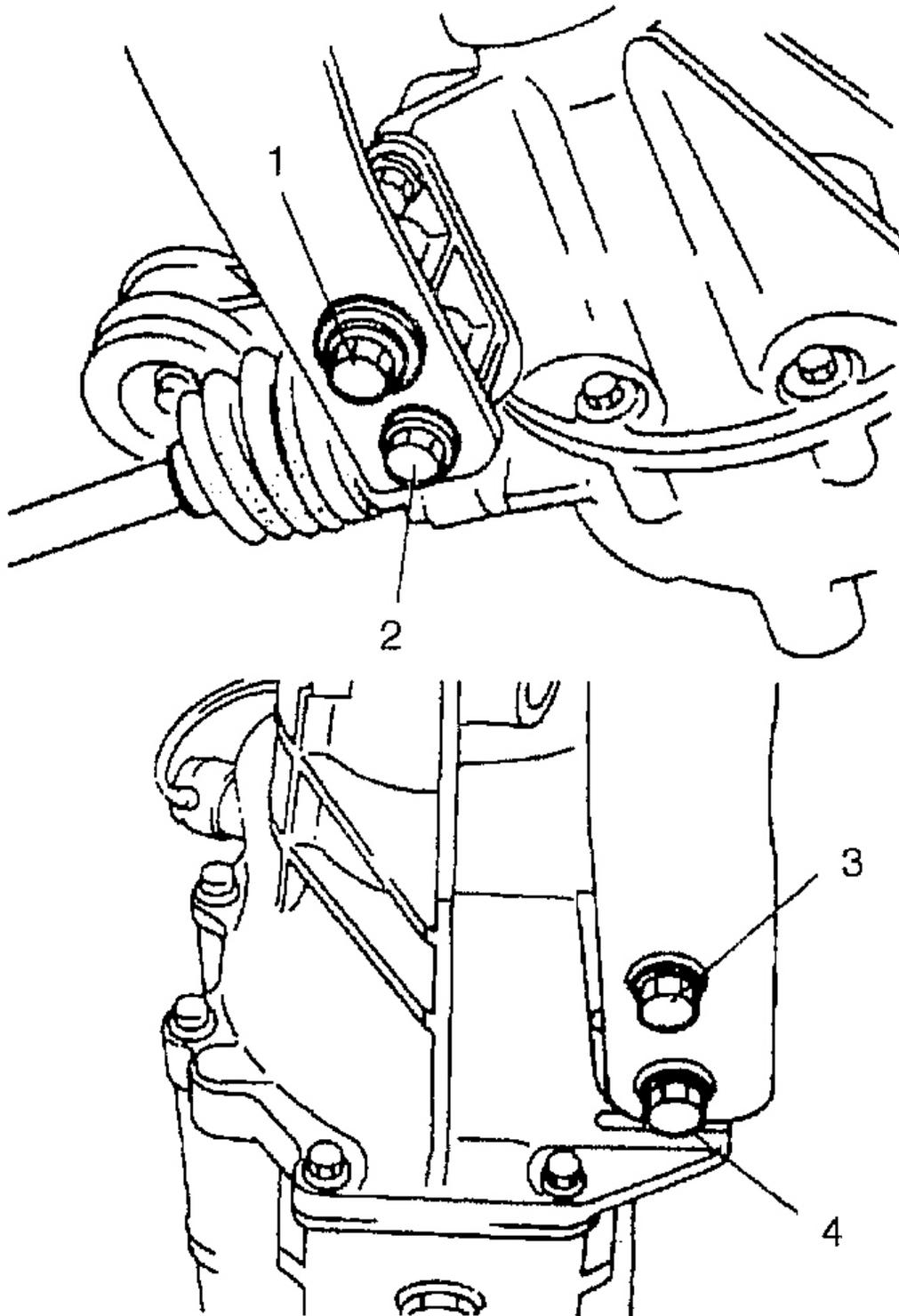
Tightening torque

104-123 N.m

{10.6-12.6 kgf.m, 76.7-91.1 ft.m}

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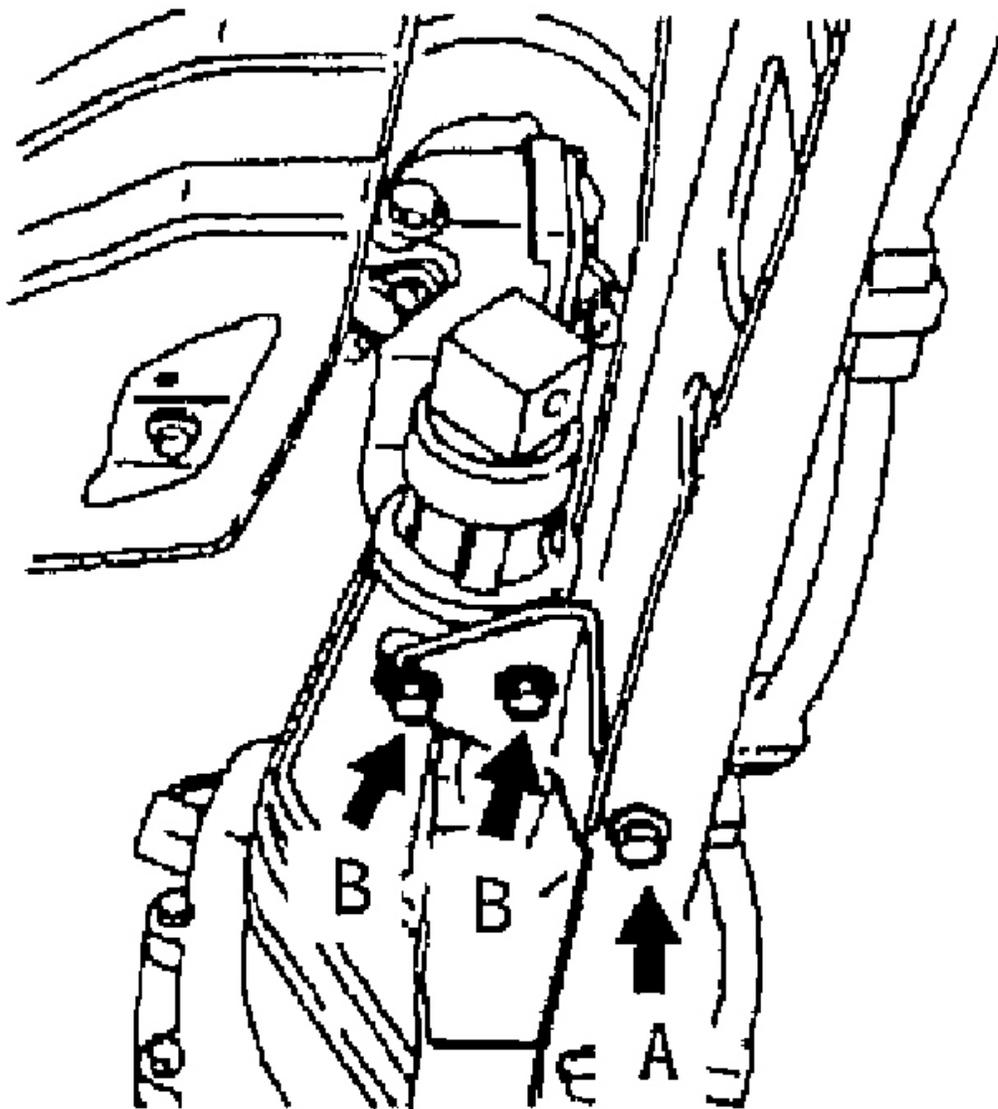
2005 DRIVELINE/AXLE Differential - MX-5 Miata



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Fig. 16: Installing PPF Bolt
Courtesy of MAZDA MOTORS CORP.

7. Install the PPF bracket.(MT only)



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Fig. 17: Installing PPF Bracket
Courtesy of MAZDA MOTORS CORP.

Tightening torque

- A. **A:104-123 N.m**
{10.6-12.6 kgf.m, 76.7-91.1 ft.m}
- B. **B:37-53 N.m**
{3.7-5.5 kgf.m, 27-39 ft.m}

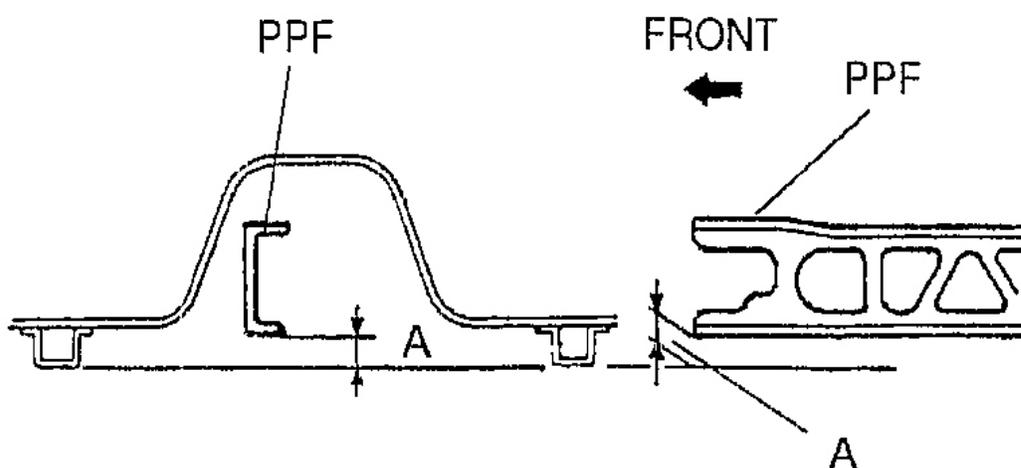
- 8. Remove the jack, and install the wiring harness.
- 9. Measure the length A as shown.

Standard length

MT:60.0-72.0 mm {2.36-2.38 in}

AT:50.5-62.5 mm {1.99-2.46 in}

- 10. If not as specified, adjust the position of the PPF.



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Fig. 18: Measuring Length

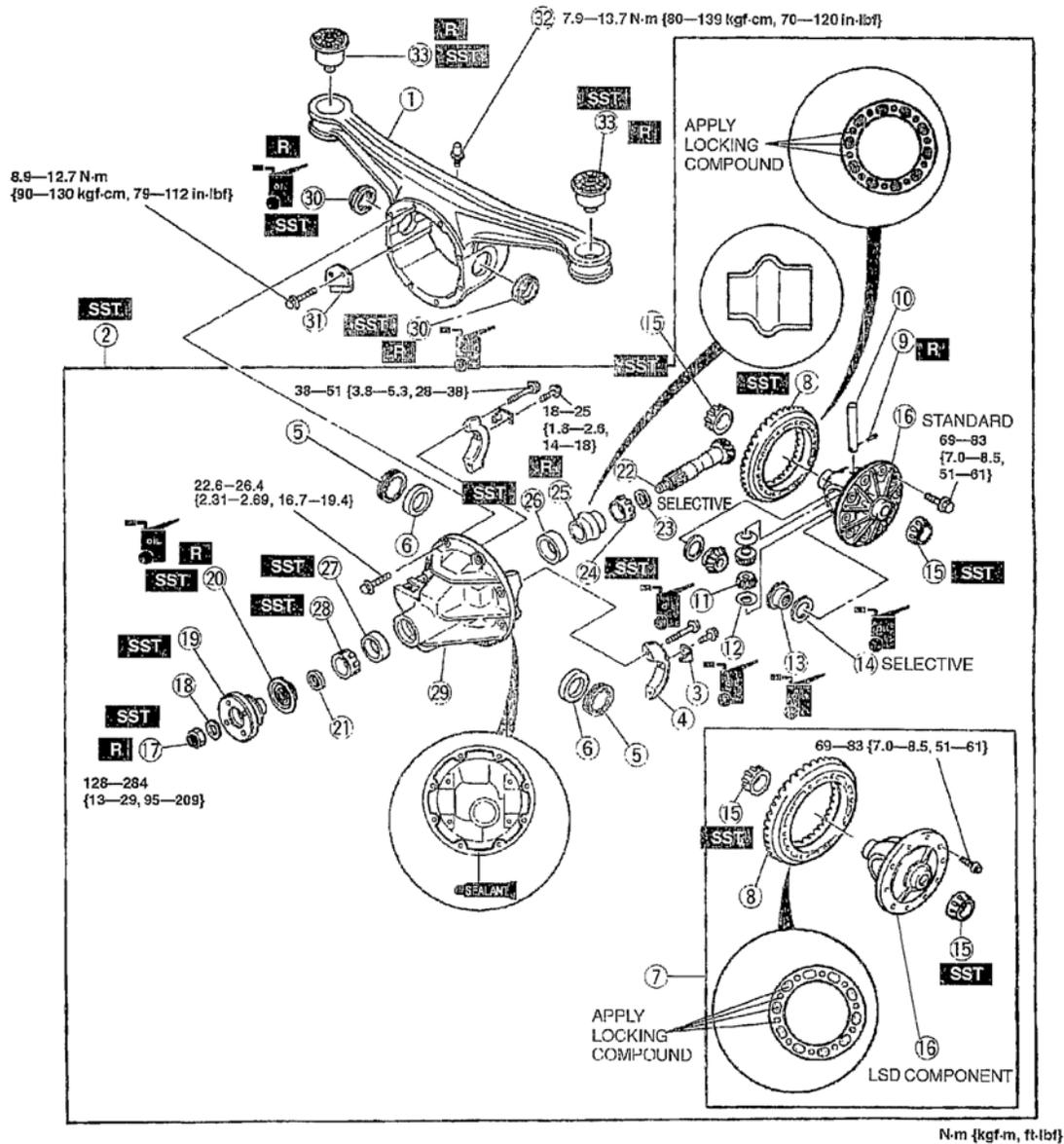
Courtesy of MAZDA MOTORS CORP.

DIFFERENTIAL DISASSEMBLY/ASSEMBLY

- 1. Disassemble in the order indicated in the table.
- 2. Assemble in the reverse order of disassembly.

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2005 DRIVELINE/AXLE Differential - MX-5 Miata



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Fig. 19: Differential Disassembled View & Torque Specifications
Courtesy of MAZDA MOTORS CORP.

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2005 DRIVELINE/AXLE Differential - MX-5 Miata

1	Differential case (See Differential Case Disassembly Note)	20	Oil seal (companion flange)
2	Differential gear component (See Differential Gear Component Disassembly Note)	21	Washer
3	Lock plates	22	Drive pinion (See Drive Pinion Disassembly Note)
4	Bearing caps (See Bearing Caps Disassembly Note)	23	Spacer
5	Adjusting nuts (See Adjusting Nuts Disassembly Note)	24	Bearing inner race (rear bearing) (See Bearing Inner Race (Rear Bearing) Disassembly Note) (See Bearing Inner Race (Rear Bearing), Bearing Inner Race (Front Bearing) Assembly Note)
6	Bearing outer races (side bearing)	25	Collapsible spacer
7	Gear case component (LSD)	26	Bearing outer race (rear bearing) (See Bearing Outer Races (Front and Rear Bearing) Disassembly Note) (See Bearing Outer Race (Rear Bearing) Assembly Note)
8	Ring gear	27	Bearing outer race (front bearing) (See Bearing Outer Races (Front and Rear Bearing) Disassembly Note) (See Bearing Outer Race (Front Bearing) Assembly Note)
9	Knock pin (standard) (See Knock Pin (Standard) Disassembly Note)	28	Bearing inner race (front bearing) (See Bearing Inner Race (Rear Bearing), Bearing Inner Race (Front Bearing) Assembly Note)
10	Pinion shaft (standard)	29	Differential carrier
11	Pinion gears (standard)	30	Oil seal (See Oil Seal Assembly Note)
12	Thrust washers (standard)	31	Baffle
13	Side gears (standard)	32	Breather
14	Thrust washers (standard) (See Thrust Washers (Standard) Assembly Note)	33	Differential mount (See Differential Mount Disassembly Note) (See Differential Mount Assembly Note)
15	Bearing inner races (side bearing) (See Bearing Inner Races (Side Bearing) Disassembly Note)		
16	Gear case		
17	Locknut (companion flange) (See Locknut (Companion Flange) Disassembly Note)		
18	Washer		
19	Companion flange (See Companion Flange Disassembly Note)		

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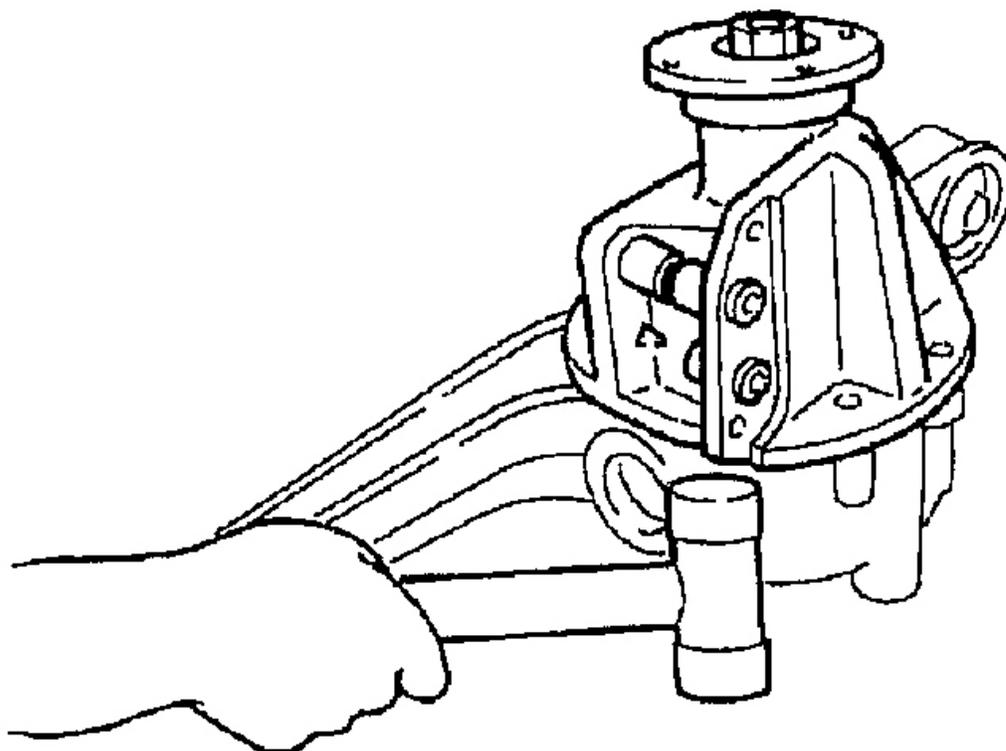
Fig. 20: Differential Disassembled View Description
 Courtesy of MAZDA MOTORS CORP.

DIFFERENTIAL CASE DISASSEMBLY NOTE

CAUTION:

- The differential case is made of aluminum, and is therefore easily dented and scratched by metal tools. When separating the differential carrier from the case, use only a plastic hammer at the point shown in Fig. 21.

1. Strike the differential carrier with a plastic hammer to separate it from the case.

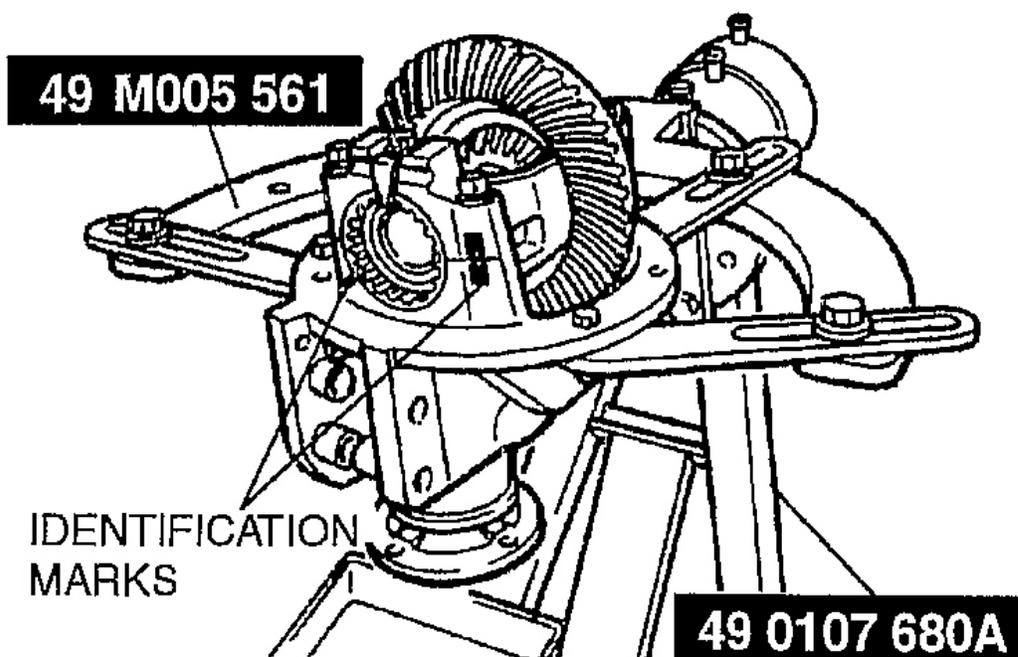


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Fig. 21: Striking Differential Carrier With A Plastic Hammer To Separate It From Case
Courtesy of MAZDA MOTORS CORP.

DIFFERENTIAL GEAR COMPONENT DISASSEMBLY NOTE

1. Mount the differential gear component on the SSTs .



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Fig. 22: Mounting Differential Gear Component On SSTs
Courtesy of MAZDA MOTORS CORP.

BEARING CAPS DISASSEMBLY NOTE

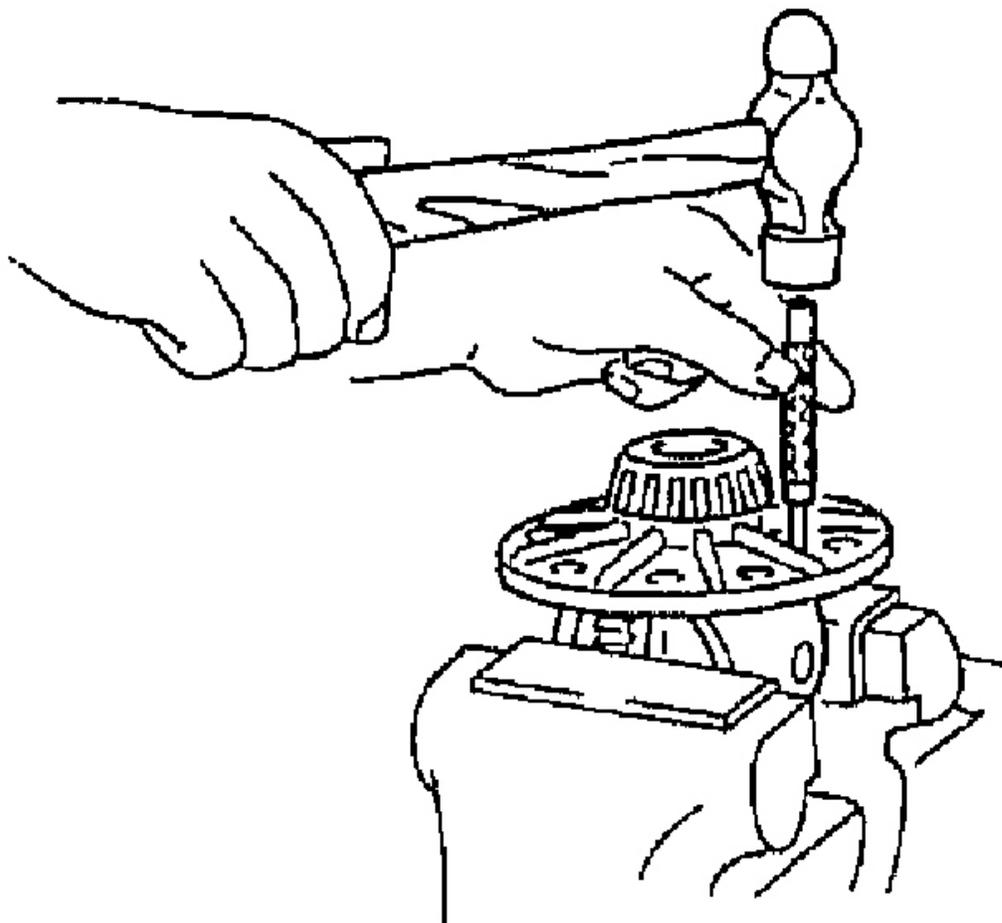
1. Mark one bearing cap and the carrier.

ADJUSTING NUTS DISASSEMBLY NOTE

1. Mark one adjusting nut and the carrier.

KNOCK PIN (STANDARD) DISASSEMBLY NOTE

1. Secure the gear case in a vise and tap out the knock pin toward the ring gear side.



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Fig. 23: Knocking Pin Toward Ring Gear Side
Courtesy of MAZDA MOTORS CORP.

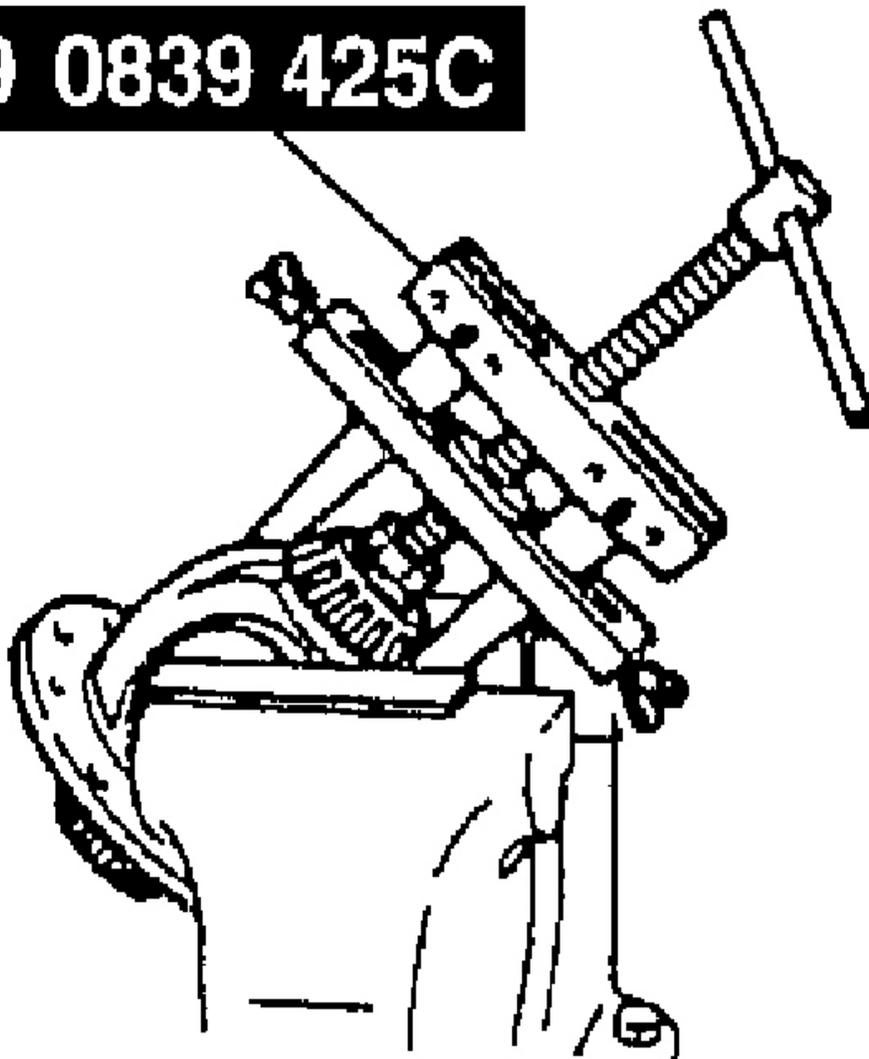
BEARING INNER RACES (SIDE BEARING) DISASSEMBLY NOTE

NOTE:

- Mark the bearings so that they can later be reinstalled in the same position.

1. Remove the bearing inner races (side bearing) from the gear case using the SST .

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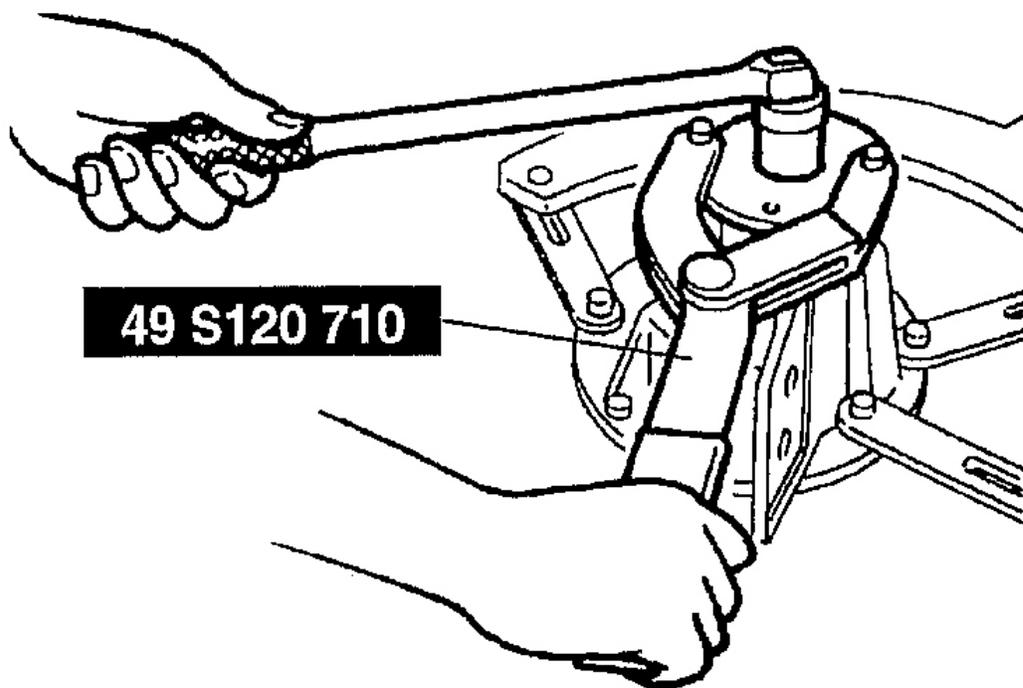


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Fig. 24: Removing Bearing Inner Races (Side Bearing) From Gear Case Using SST
Courtesy of MAZDA MOTORS CORP.

LOCKNUT (COMPANION FLANGE) DISASSEMBLY NOTE

1. Hold the companion flange using the SST and remove the locknut.

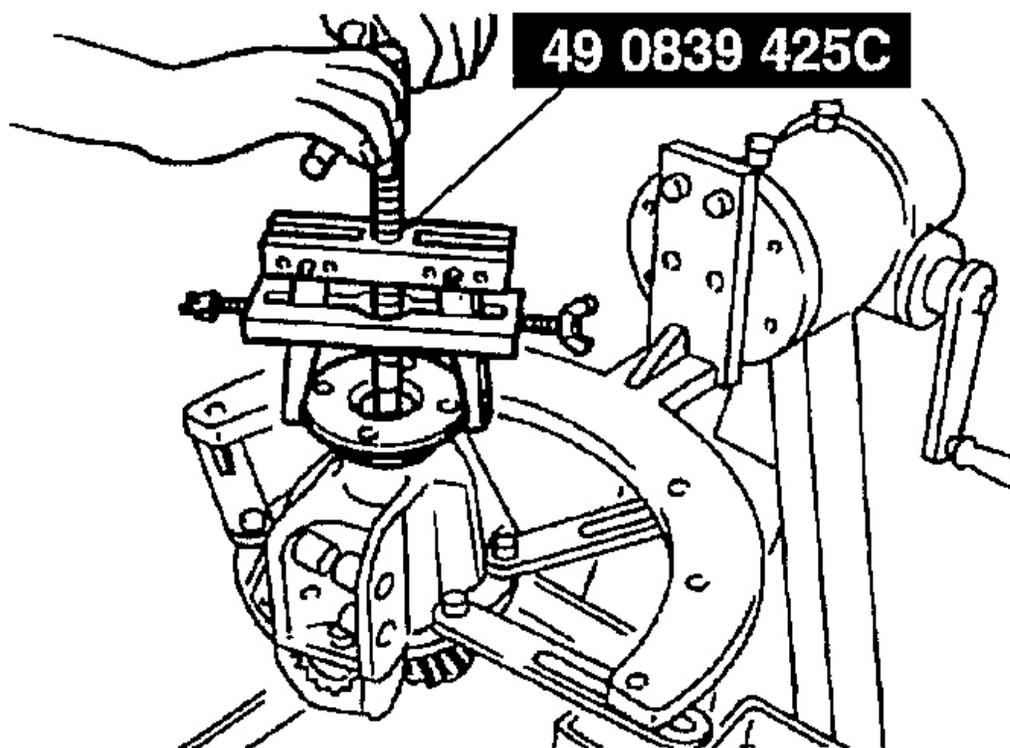


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Fig. 25: Holding Companion Flange
Courtesy of MAZDA MOTORS CORP.

COMPANION FLANGE DISASSEMBLY NOTE

1. Pull the companion flange off using the SST .

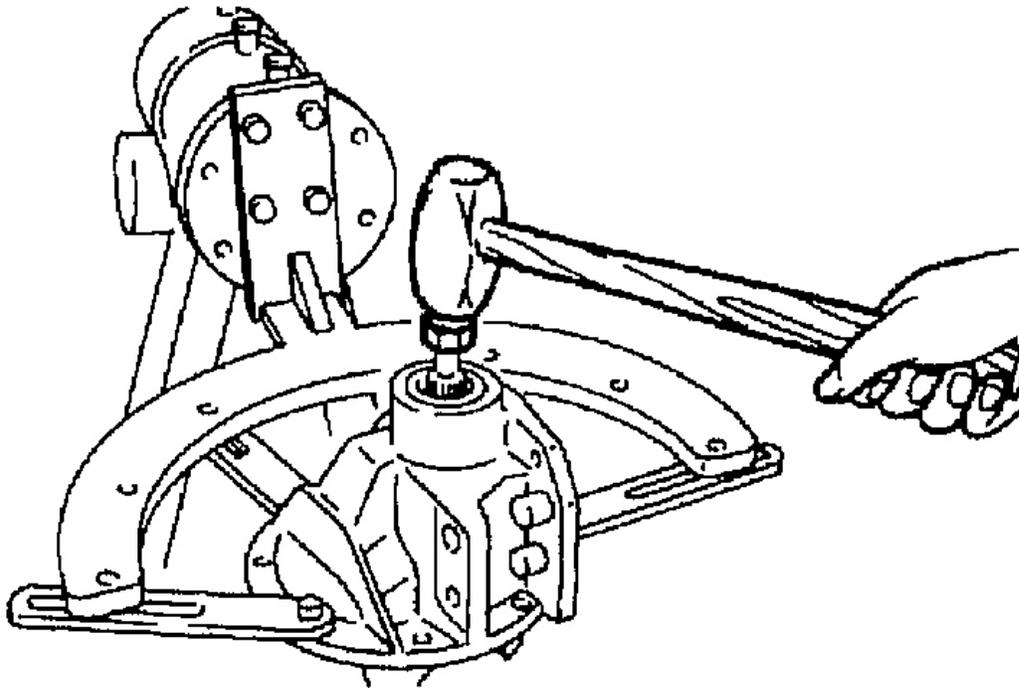


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Fig. 26: Pulling Companion Flange Off
Courtesy of MAZDA MOTORS CORP.

DRIVE PINION DISASSEMBLY NOTE

1. Push out the drive pinion by attaching a miscellaneous locknut to the drive pinion, and tapping it with a copper hammer.

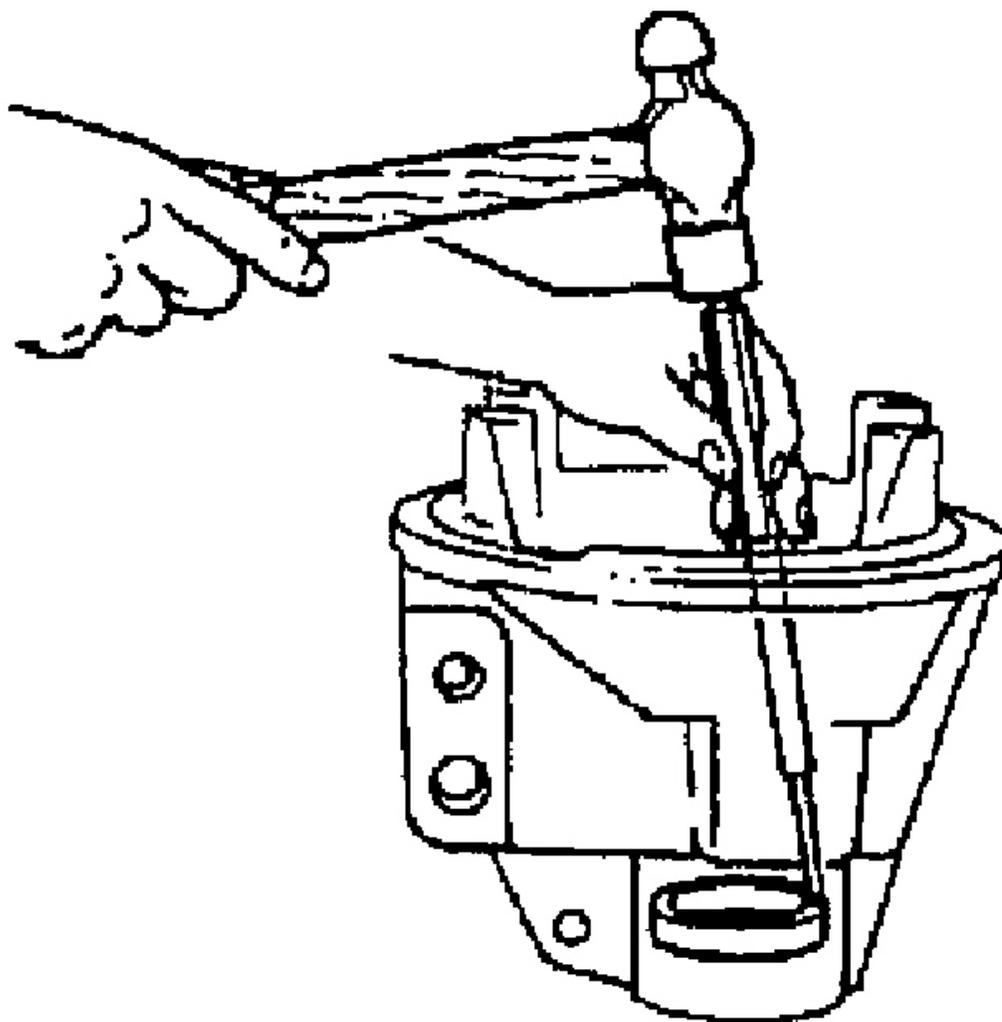


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Fig. 27: Pushing Out Drive Pinion
Courtesy of MAZDA MOTORS CORP.

BEARING OUTER RACES (FRONT AND REAR BEARING) DISASSEMBLY NOTE

1. Remove the bearing outer races using the 2 grooves in the carrier and alternately tapping the sides of the races.



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Fig. 28: Removing Bearing Outer Races Using Grooves In Carrier And Alternately Tapping Sides Of Races

Courtesy of MAZDA MOTORS CORP.

BEARING INNER RACE (REAR BEARING) DISASSEMBLY NOTE

1. While supporting the drive pinion to keep it from falling, remove the bearing inner race (rear bearing) using the SST .

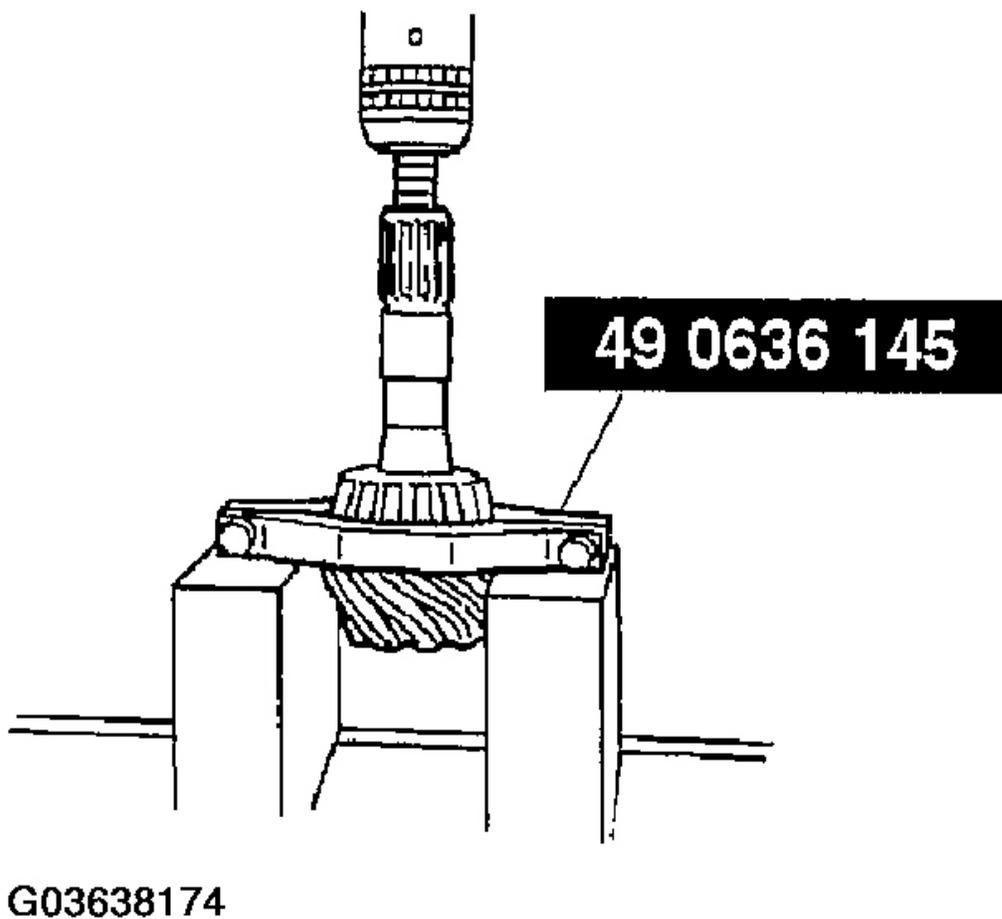
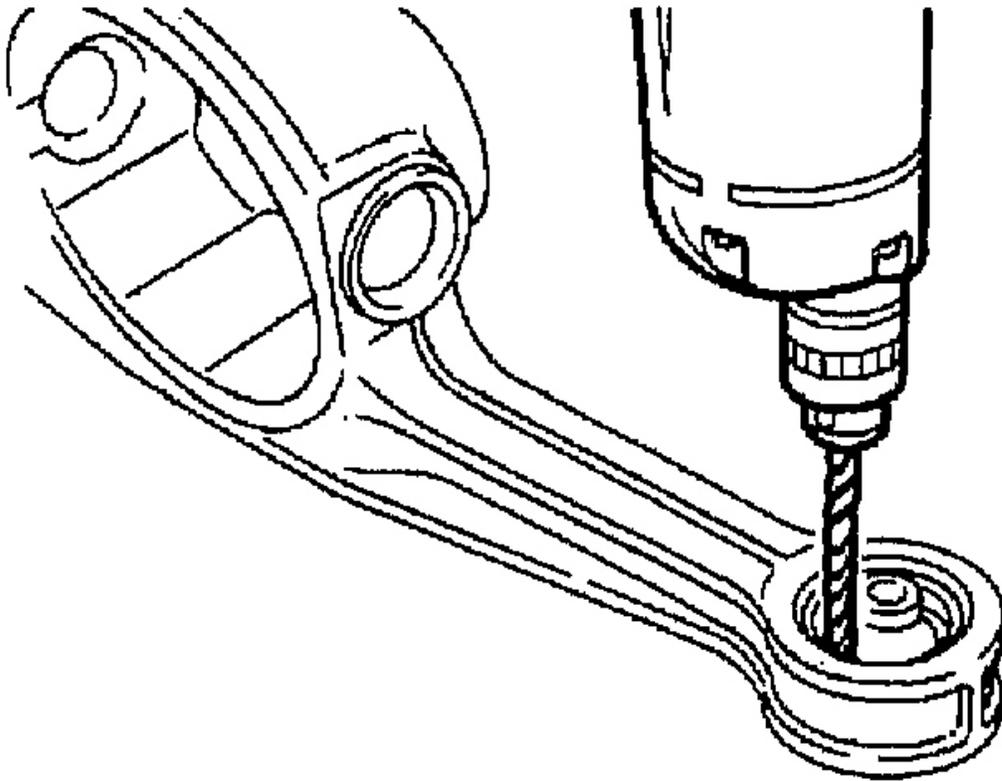


Fig. 29: Disassembled View Of Bearing Inner Race
Courtesy of MAZDA MOTORS CORP.

DIFFERENTIAL MOUNT DISASSEMBLY NOTE

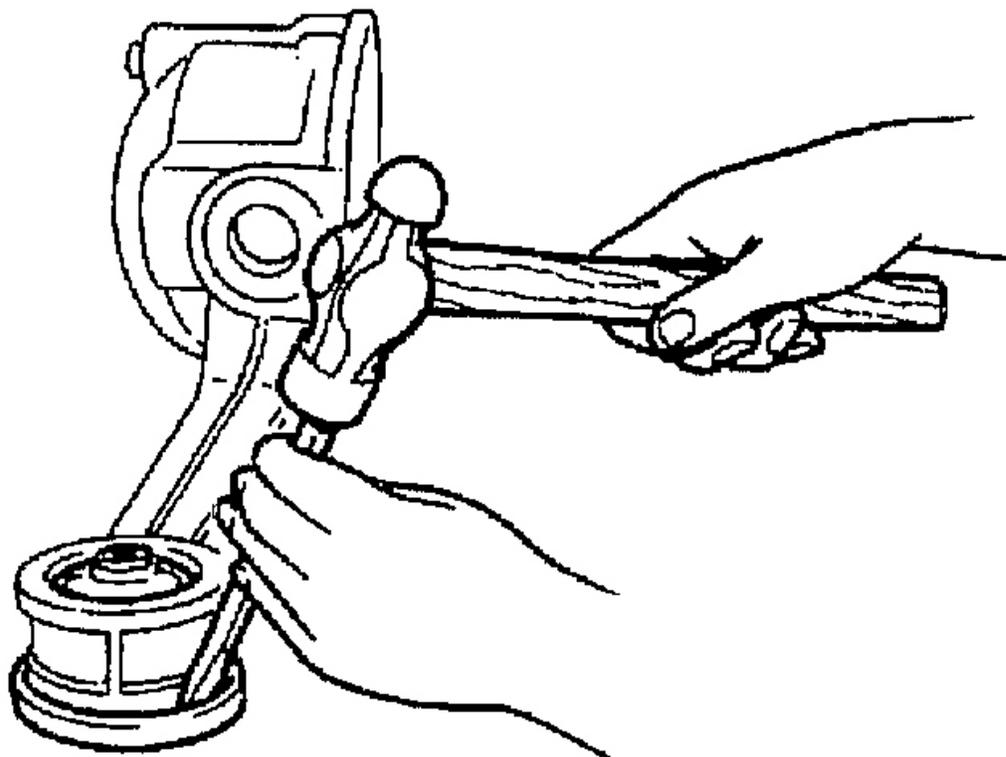
1. Drill holes around the differential mount.



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Fig. 30: Drilling Holes Around Differential Mount
Courtesy of MAZDA MOTORS CORP.

2. Hit the edge of the differential mount to remove it.



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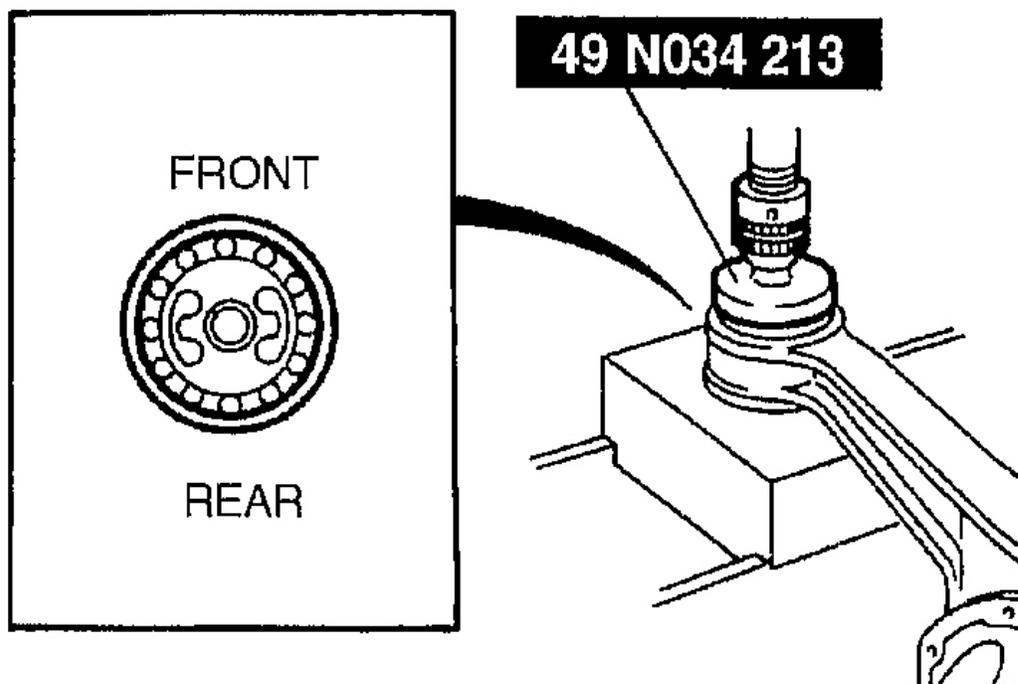
Fig. 31: Hitting Edge Of Differential Mount
Courtesy of MAZDA MOTORS CORP.

DIFFERENTIAL MOUNT ASSEMBLY NOTE

1. Install the new differential mount with the voids facing front and rear.
2. Press in the differential mount using the SST .

Press force

19,610 N {2,000 kgf, 4,400 lbf} max.

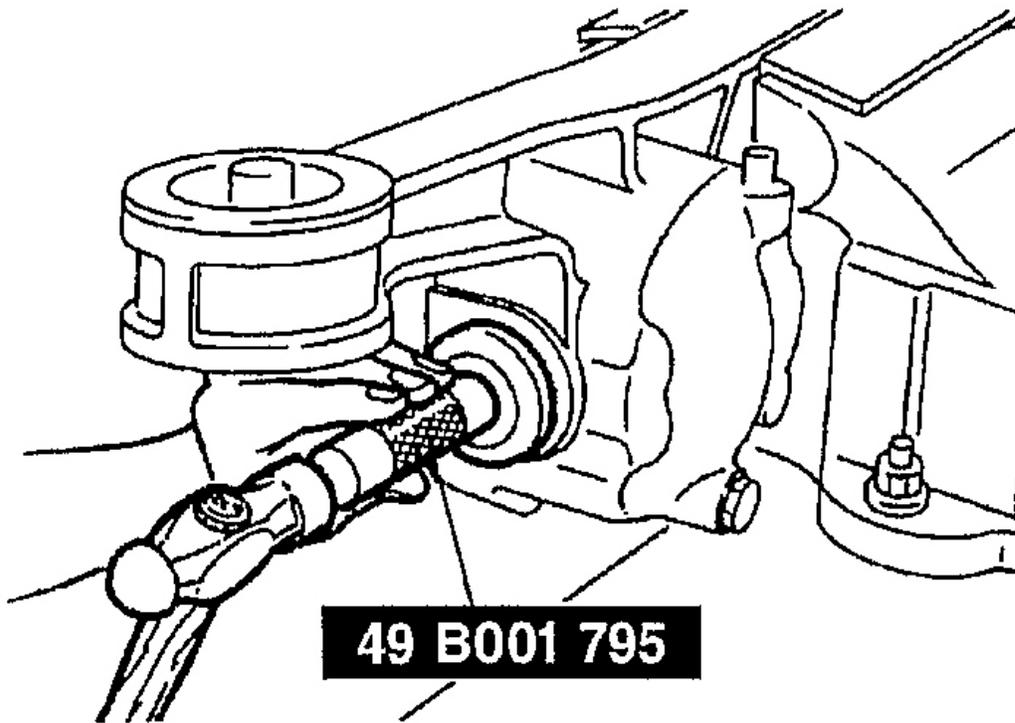


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Fig. 32: Installing New Differential Mount With Voids Facing Front And Rear
Courtesy of MAZDA MOTORS CORP.

OIL SEAL ASSEMBLY NOTE

1. Apply differential gear oil to the new oil seal lip and install it using the SST .

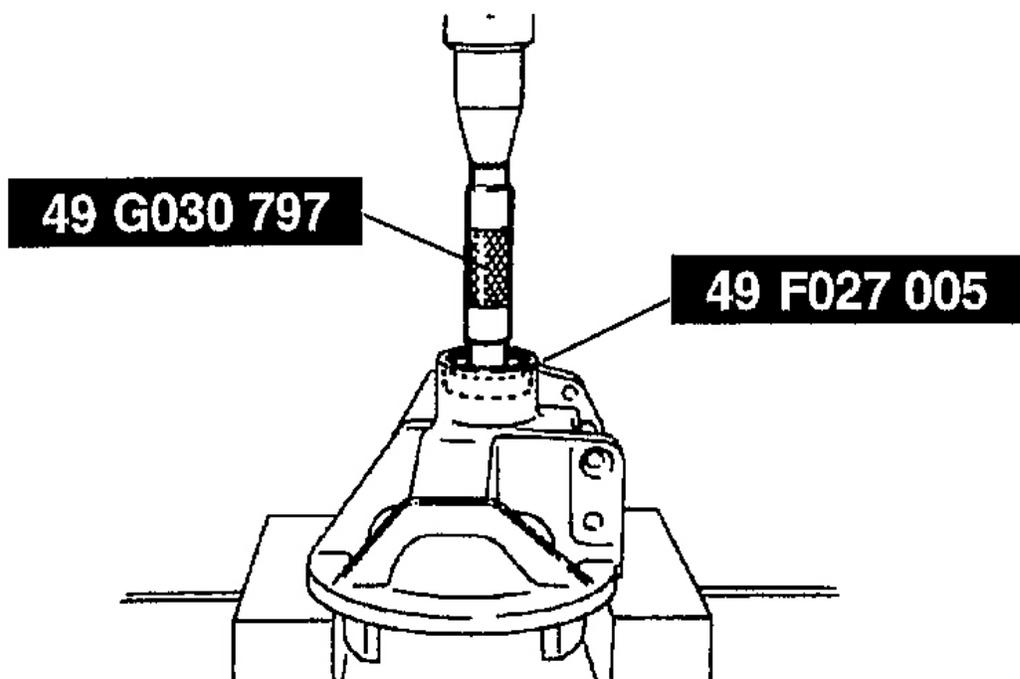


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Fig. 33: Applying Differential Gear Oil To New Oil Seal Lip
Courtesy of MAZDA MOTORS CORP.

BEARING OUTER RACE (FRONT BEARING) ASSEMBLY NOTE

1. Install the bearing outer race (front bearing) using the SSTs .

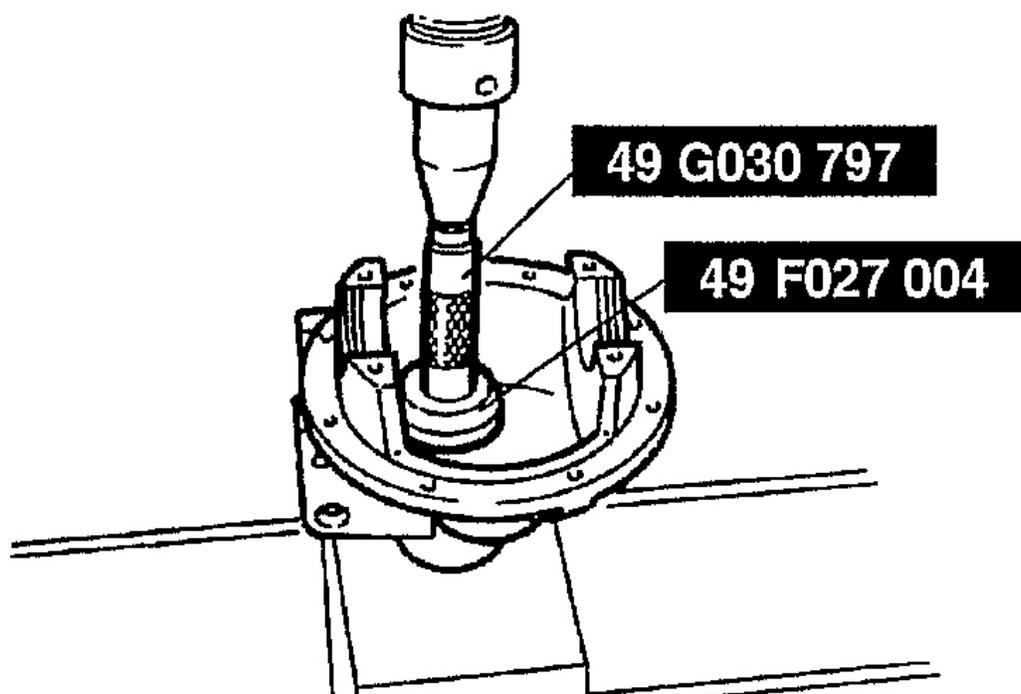


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Fig. 34: Installing Bearing Outer Race (Front Bearing) Using SSTs
Courtesy of MAZDA MOTORS CORP.

BEARING OUTER RACE (REAR BEARING) ASSEMBLY NOTE

1. Install the bearing outer race (rear bearing) using the SSTs .

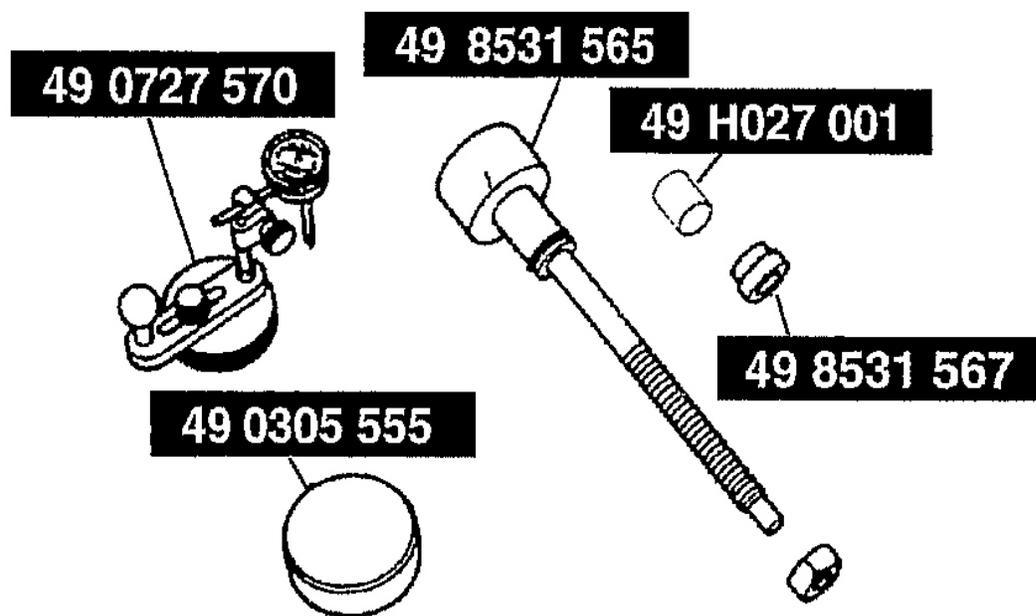


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Fig. 35: Installing Bearing Outer Race (Rear Bearing) Using SSTs
Courtesy of MAZDA MOTORS CORP.

**BEARING INNER RACE (REAR BEARING), BEARING INNER RACE (FRONT BEARING)
ASSEMBLY NOTE**

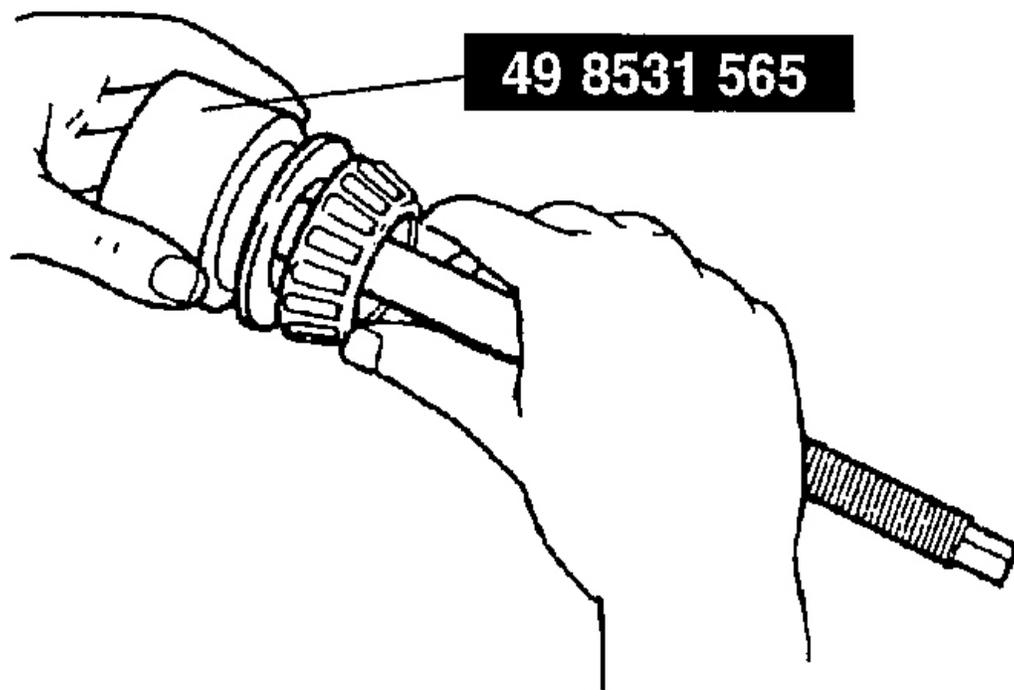
1. Adjust the drive pinion height as follows, using the SSTs .



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Fig. 36: Adjusting Drive Pinion Height As Follows, Using SSTs
Courtesy of MAZDA MOTORS CORP.

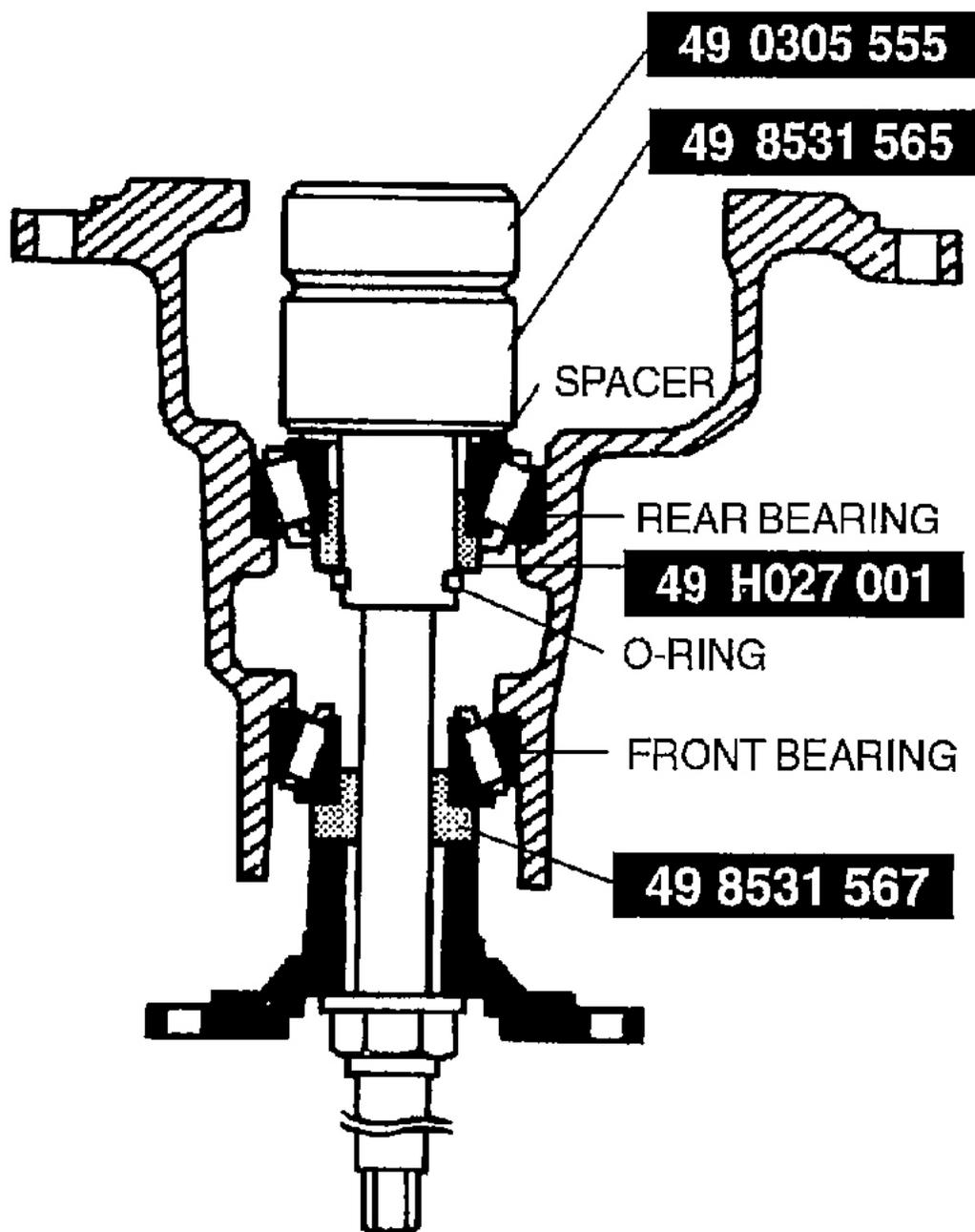
1. Install the previously-removed spacer onto the SST so that the beveled side of the spacer faces the drive pinion. Then install the rear bearing and O-ring onto the SST /spacer as shown in **Fig. 37**.



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Fig. 37: Installing Previously-Removed Spacer Onto SST
Courtesy of MAZDA MOTORS CORP.

2. Assemble the spacer, bearing inner race (rear bearing), and SSTs .



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Fig. 38: Installing Bearing Inner Race
Courtesy of MAZDA MOTORS CORP.

3. Secure the SST with the O-ring. Install this assembly in the carrier.

4. Install the bearing inner race (front bearing), the **SST** , companion flange, washer, and nut.
5. Tighten the nut just enough so that the companion flange can still be turned by hand.
6. Place the **SST** on the surface plate and set the dial indicator to "Zero".

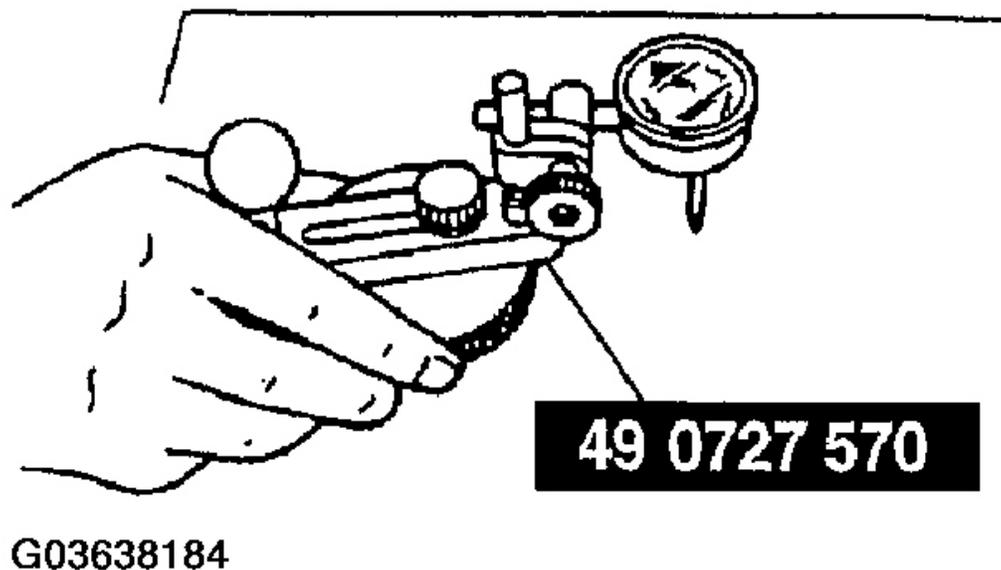


Fig. 39: Placing SST On Surface Plate And Set Dial
Courtesy of MAZDA MOTORS CORP.

7. Place the **SST** atop the drive pinion model. Set the gauge body atop the gauge block.
8. Place the feeler of the dial indicator so that it contacts where the bearing inner race (side bearing) is installed in the carrier. Measure the lowest position on the left and right sides of the carrier.

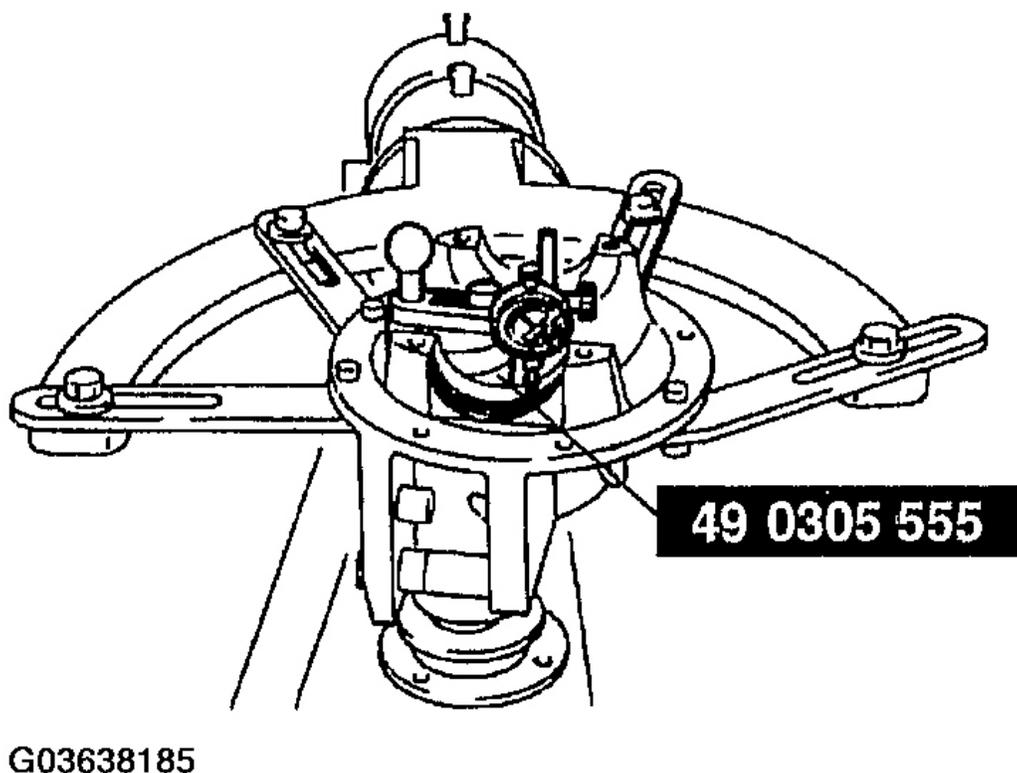


Fig. 40: Placing SST Atop Drive Pinion Model Set Gauge Body Atop Gauge Block
 Courtesy of MAZDA MOTORS CORP.

NOTE: • The number is inscribed on the end of the drive pinion.

9. Add the 2 (left and right) values obtained by the measurements taken in step (8), and then divide the total by 2. From this result, subtract the result obtained by dividing the number inscribed on the end surface of the drive pinion by 100. (If there is no figure inscribed, use 0.) This is the pinion height adjustment value.

Mark	Thickness	Mark	Thickness
08	3.08 mm {0.1213 in}	29	3.29 mm {0.1295 in}
11	3.11 mm {0.1224 in}	32	3.32 mm {0.1307 in}
14	3.14 mm {0.1234 in}	35	3.35 mm {0.1319 in}
17	3.17 mm {0.1248 in}	38	3.38 mm {0.1331 in}
20	3.20 mm {0.1260 in}	41	3.41 mm {0.1343 in}
23	3.23 mm {0.1271 in}	44	3.44 mm {0.1354 in}
26	3.26 mm {0.1283 in}	47	3.47 mm {0.1366 in}

NOTE:

- The identification number is indicated on the outer side of the washer.

2. Install the spacer, selected in the procedure above, with the beveled side facing the drive pinion.
3. Using the **SSTs** , press the bearing inner race (rear bearing) onto the drive pinion until the force required starts to increase sharply.

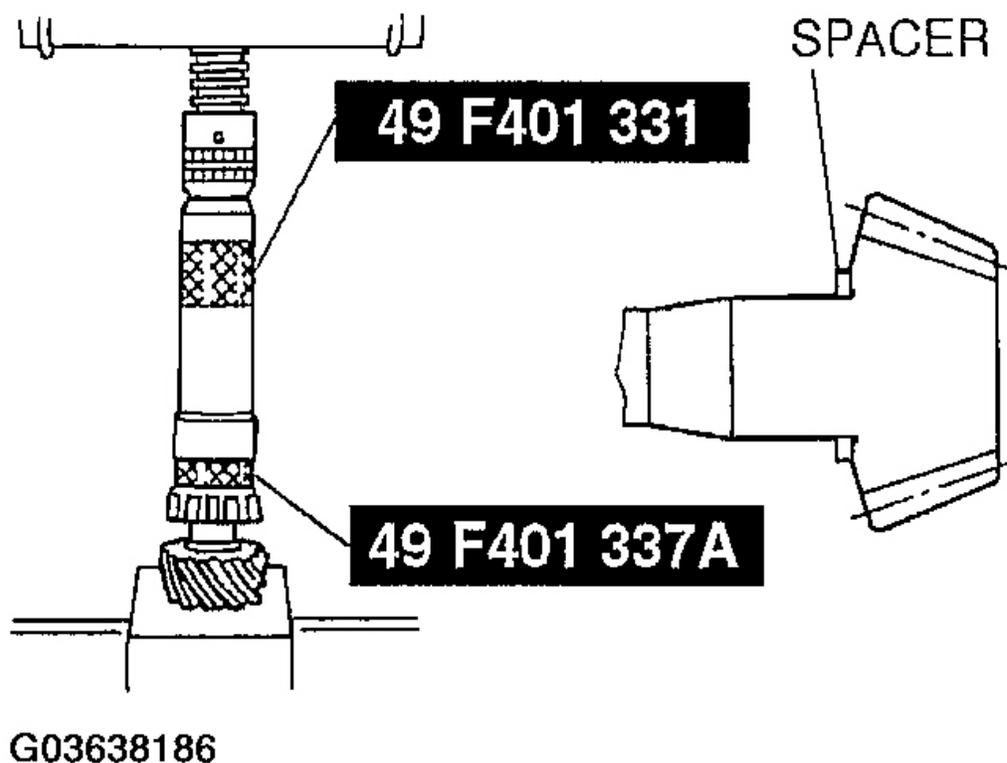
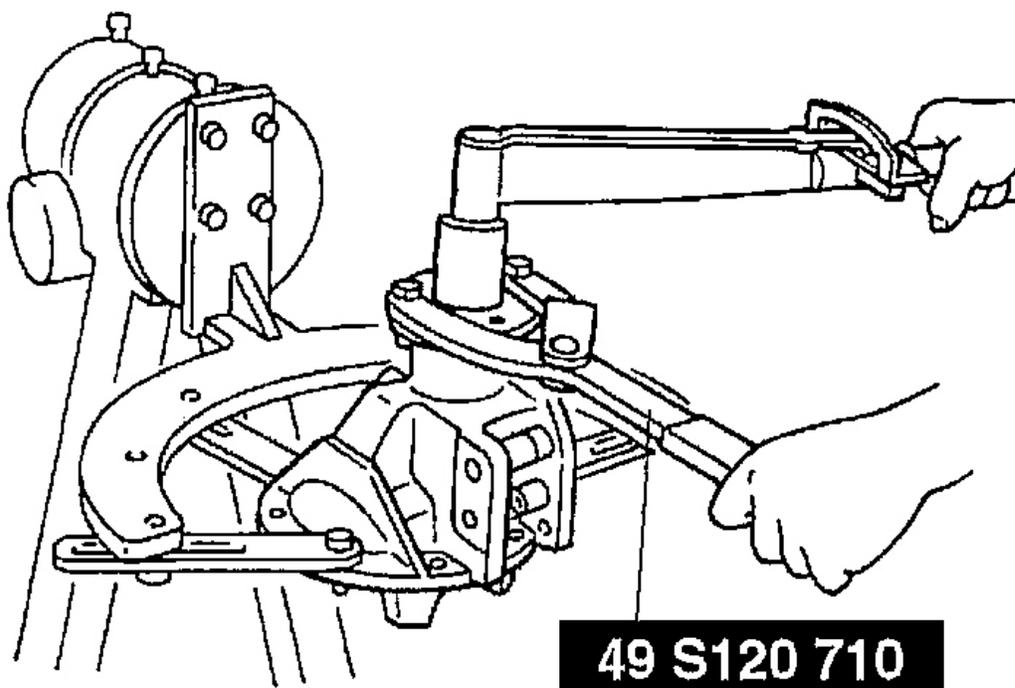


Fig. 41: Installing Spacer

Courtesy of MAZDA MOTORS CORP.

4. Without installing the oil seal, install the drive pinion, spacer, new collapsible spacer, front bearing, washer, and companion flange to the carrier, and temporarily tighten the locknut using the **SST** .



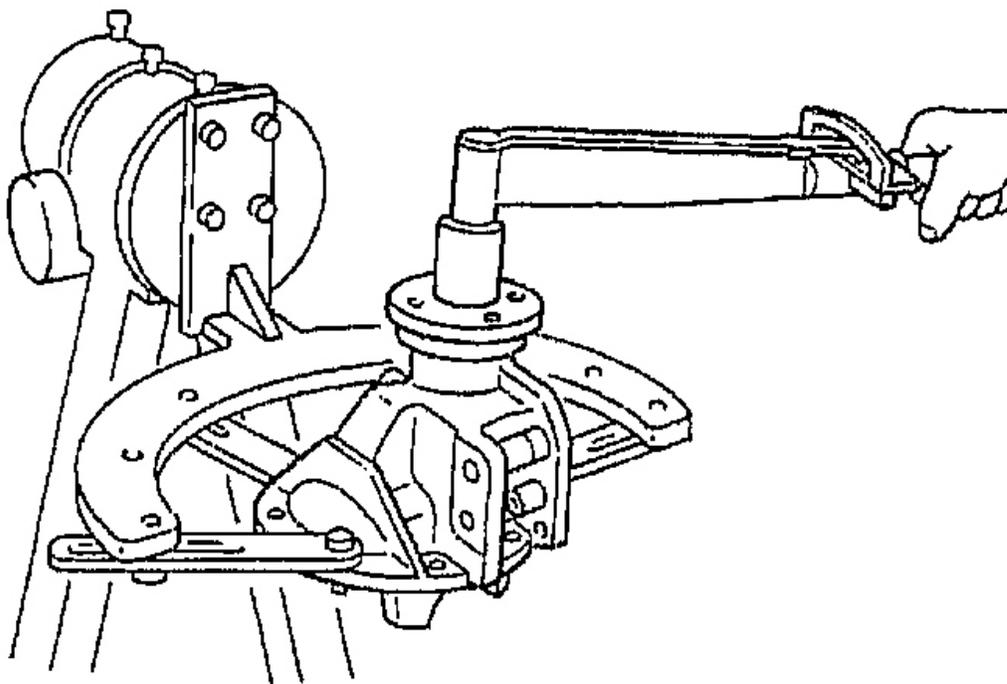
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Fig. 42: Installing Drive Pinion, Spacer, New Collapsible Spacer, Front Bearing, Washer, And Companion Flange
Courtesy of MAZDA MOTORS CORP.

Tightening torque

128-284 N.m {13-29 kgf.m, 95-209 ft.lbf}

5. Turn the companion flange several turns by hand to seat the bearing.
6. Measure the drive pinion preload. Adjust the preload by tightening the locknut, and record the tightening torque.



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Fig. 43: Measuring Drive Pinion Preload
Courtesy of MAZDA MOTORS CORP.

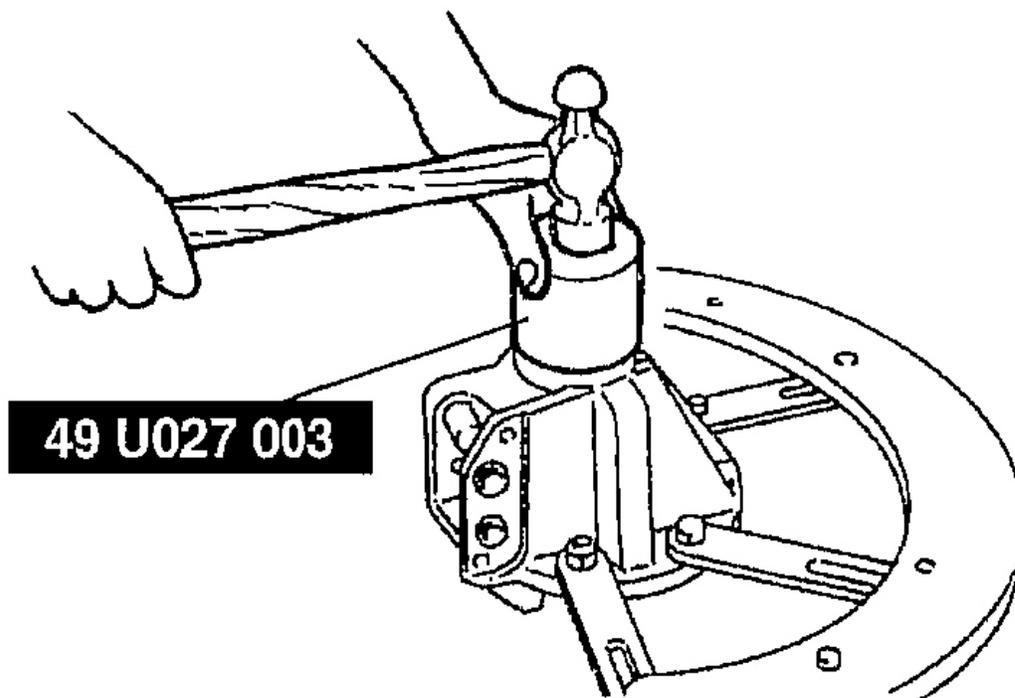
Preload

0.9-1.3 N.m {9-14 kgf.cm, 7.9-12.1 in.lbf}

Tightening torque

128-284 N.m {13-29 kgf.m, 95-209 ft.lbf}

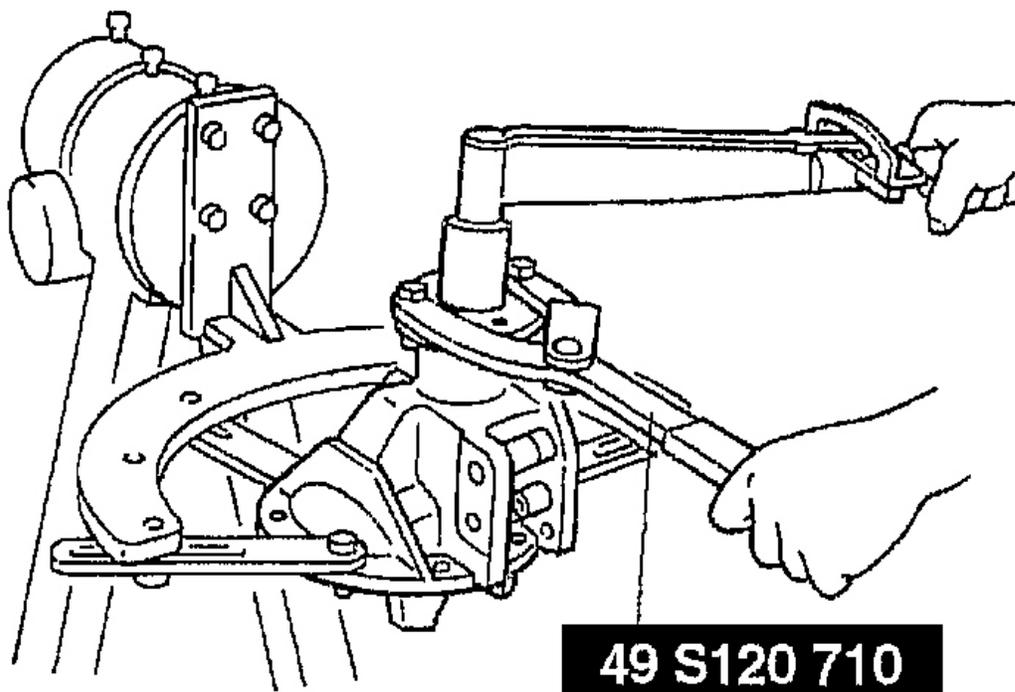
7. Remove the locknut, washer, and companion flange.
8. Tap a new oil seal into the differential carrier with the **SST** .



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Fig. 44: Taping A New Oil Seal Into Differential Carrier With SST
Courtesy of MAZDA MOTORS CORP.

9. Install the companion flange and washer while holding the flange with the SST , and tighten a new locknut to the tightening torque recorded in step 6.

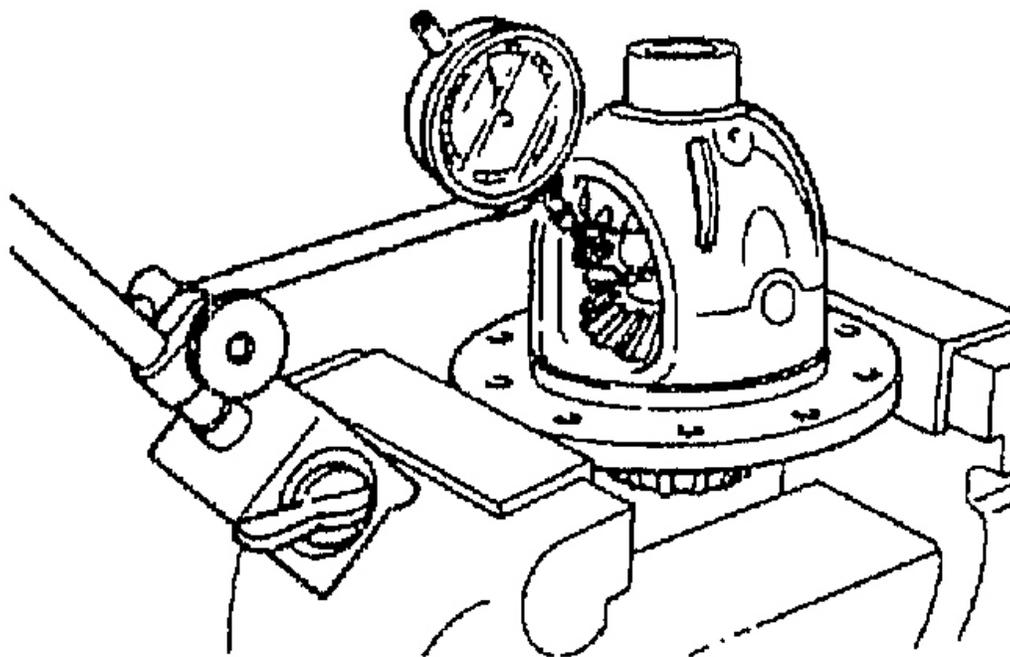


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Fig. 45: Installing Companion Flange And Washer While Holding Flange With SST
Courtesy of MAZDA MOTORS CORP.

THRUST WASHERS (STANDARD) ASSEMBLY NOTE

1. Adjust the backlash of the side gears and pinion gear as follows.
 1. Set a dial gauge against the pinion gear as shown.



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Fig. 46: Securing One Of Side Gears
 Courtesy of MAZDA MOTORS CORP.

2. Move the pinion gear, and measure the backlash at the end of it.
3. Secure one of the side gears.

Standard backlash

0-0.1 mm {0-0.004 in}

4. If the backlash exceeds the standard, use the selectable thrust washers for adjustment.

Thrust washer thickness

THRUST WASHER THICKNESS

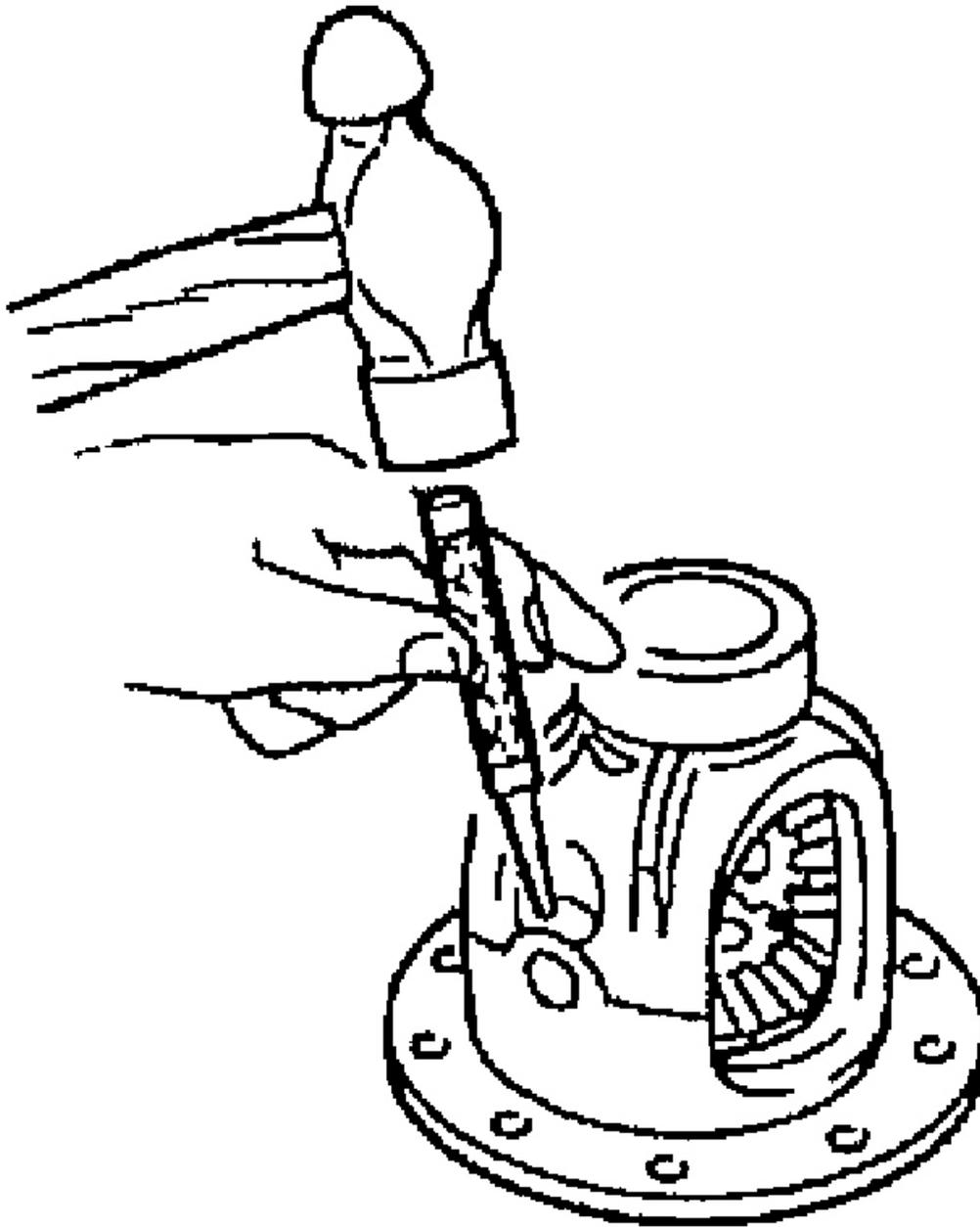
Identification mark	Thickness
0	2.00 mm {0.0787 in}
0.5	2.05 mm {0.0807 in}
1	2.10 mm {0.0827 in}
1.5	2.15 mm {0.0846 in}

2005 Mazda MX-5 Miata

2005 DRIVELINE/AXLE Differential - MX-5 Miata

2 | 2.20 mm {0.0866 in}

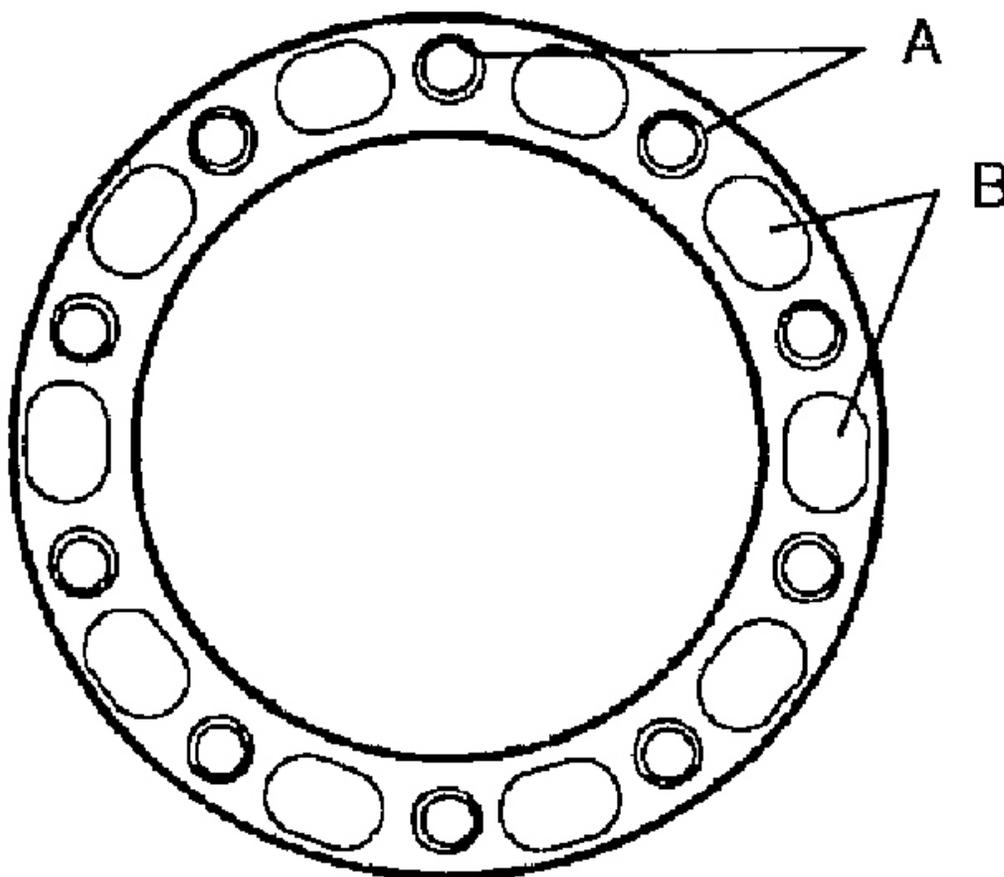
2. Install the new knock pin to secure the pinion shaft. Stake the pin with a punch to prevent it from coming out of the case.



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Fig. 47: Installing New Knock Pin To Secure Pinion Shaft
Courtesy of MAZDA MOTORS CORP.

3. Apply thread-locking compound to bolt threads A and points B of the gear back face. Apply approximately **0.04 cm³ {0.04 cc, 0.0024 cu in}** of thread-locking compound at each point and bolt thread.



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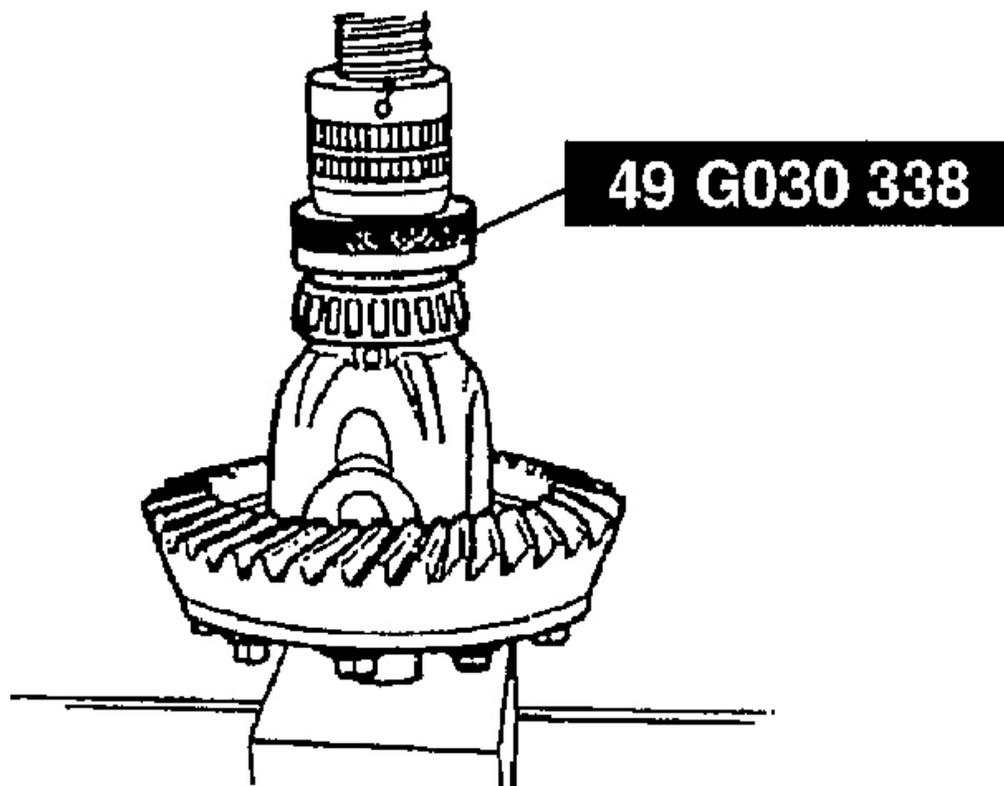
Fig. 48: Applying Thread-Locking Compound Bolt Threads A And Points B Of Gear Back Face
Courtesy of MAZDA MOTORS CORP.

4. Install the ring gear onto the gear case.

Tightening torque

69-83 N.m {7.0-8.5 kgf.m, 51-61 ft.lbf}

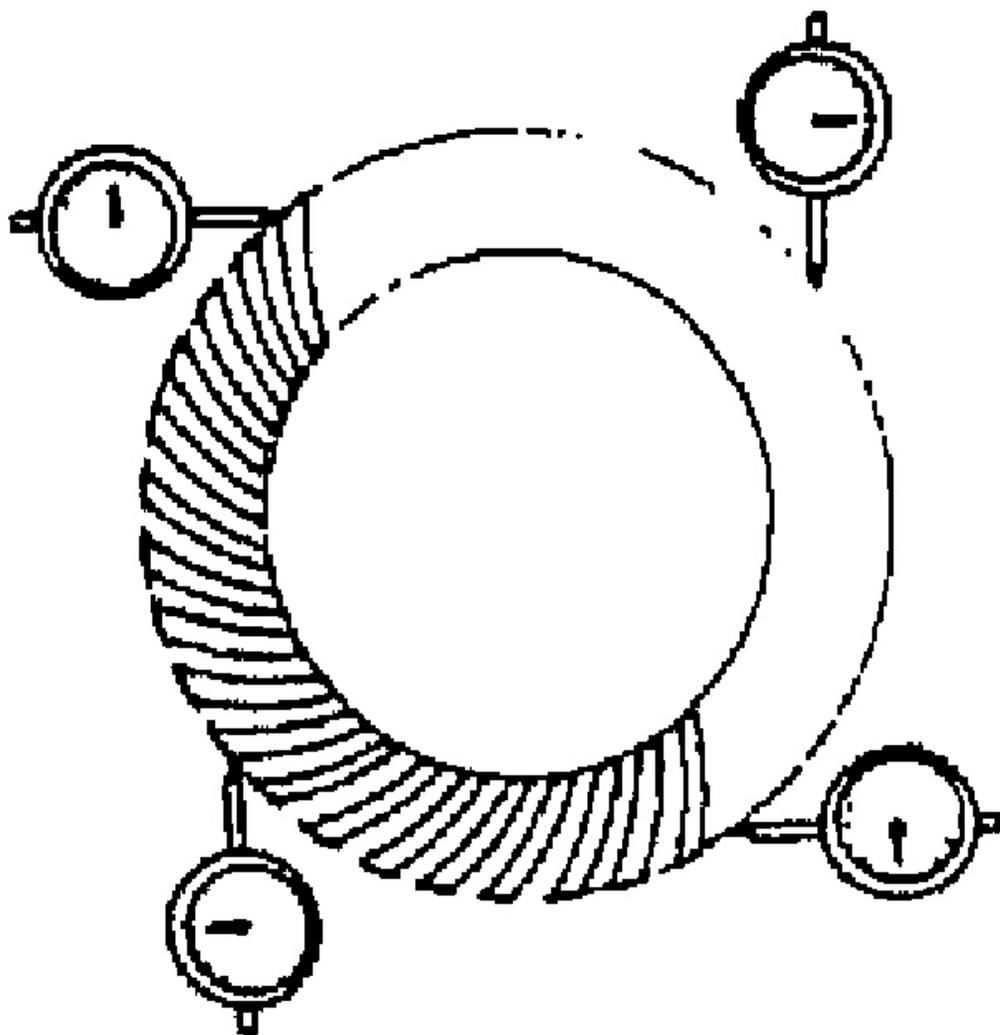
5. Press the bearing inner races (side bearing) on using the SST .



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Fig. 49: Pressing Bearing Inner Races Using SST
Courtesy of MAZDA MOTORS CORP.

6. Install the differential gear component in the carrier.
7. Note the identification marks on the adjusting nuts, and install them on their respective sides.
8. Install the differential bearing caps, making sure that the identification mark on the cap corresponds with the one on the carrier, using the **SST** . Then temporarily tighten the bolts.



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Fig. 50: Installing Differential Bearing Caps Using SST
Courtesy of MAZDA MOTORS CORP.

1. Mark the ring gear at four points at **approx.90°** intervals. Mount a dial indicator to the carrier so that the feeler comes in contact at a right angle with 1 of the ring gear teeth.
2. Turn both bearing adjusters equally using the SST until the backlash is **0.09-0.11 mm {0.0035-0.0043 in}** .
3. Inspect for the backlash at the 3 other marked points, and make sure the maximum backlash is **less than 0.07 mm {0.0028 in}** .

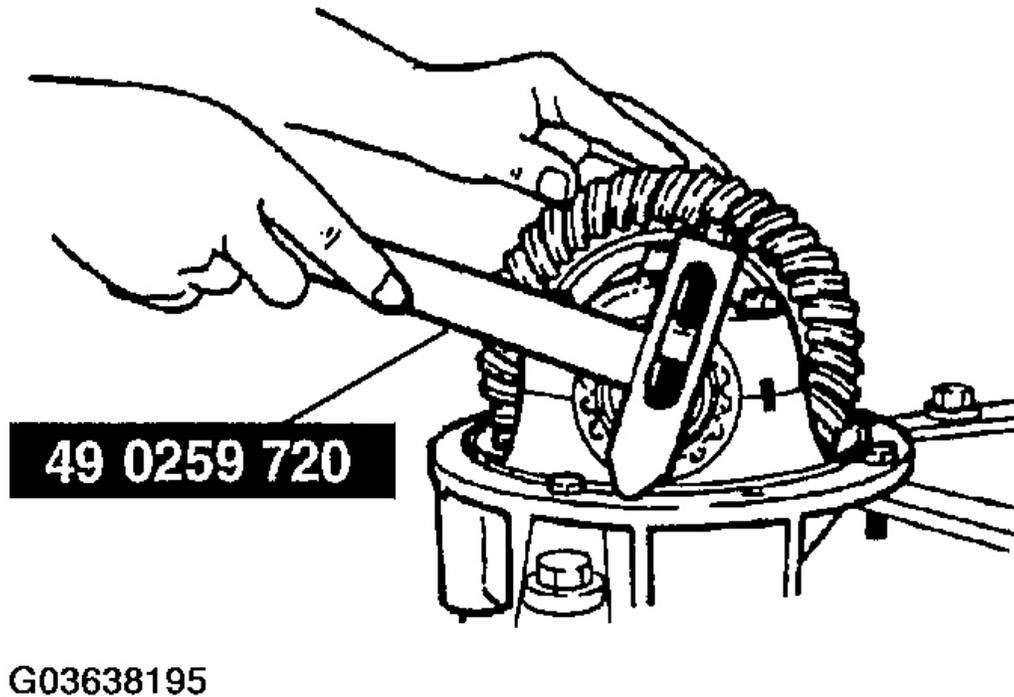
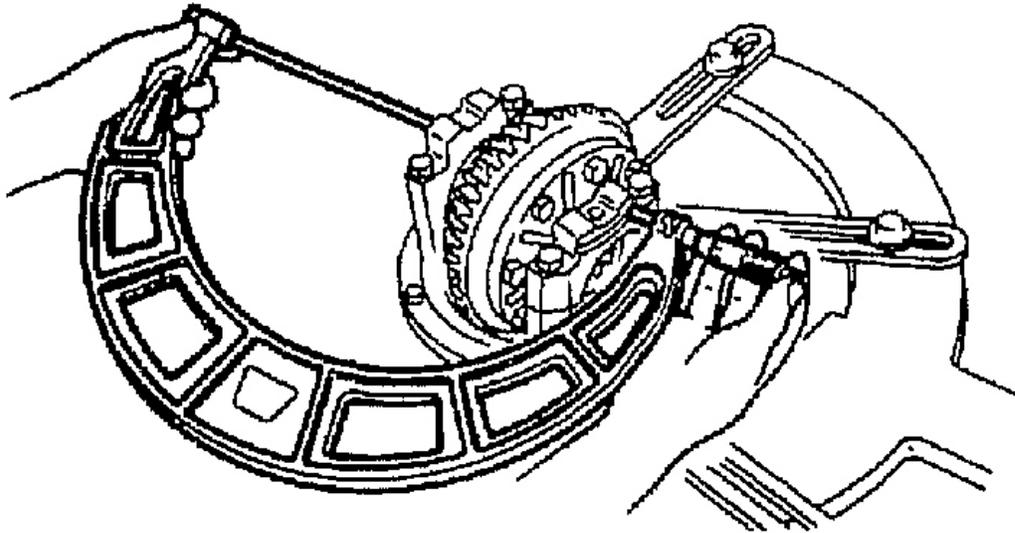


Fig. 51: Mounting A Dial Indicator To Carrier
Courtesy of MAZDA MOTORS CORP.

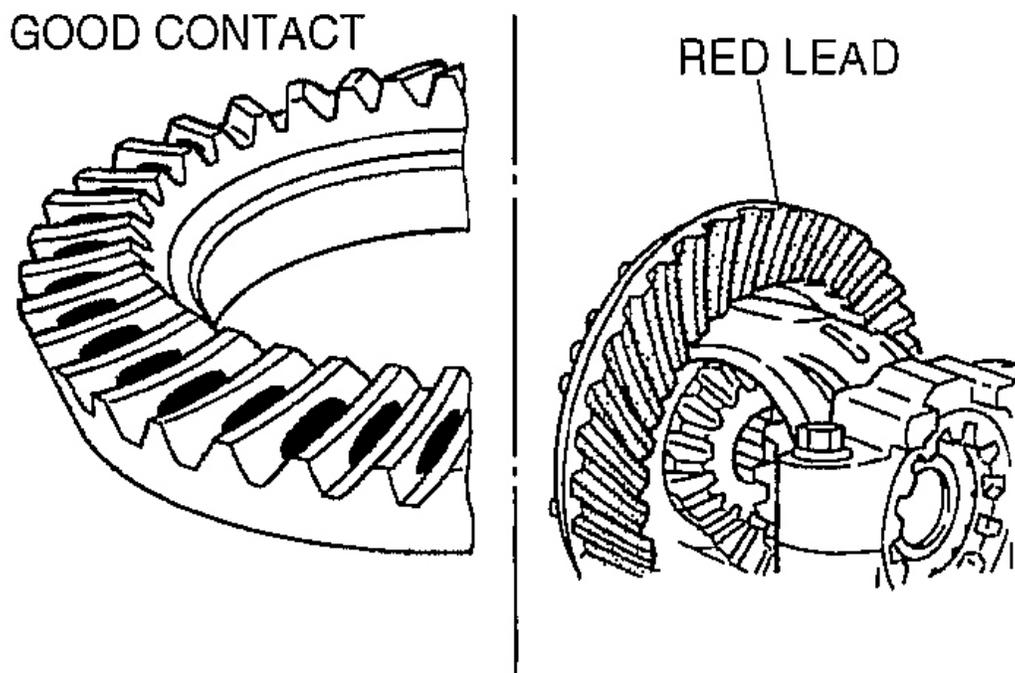
9. Tighten or loosen the adjusting nuts equally until the distance between the pilot sections on the bearing caps is **185.428-185.500 mm {7.3003-7.3031 in}**.
10. Reinspect for the backlash.



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Fig. 52: Inspecting Backlash
Courtesy of MAZDA MOTORS CORP.

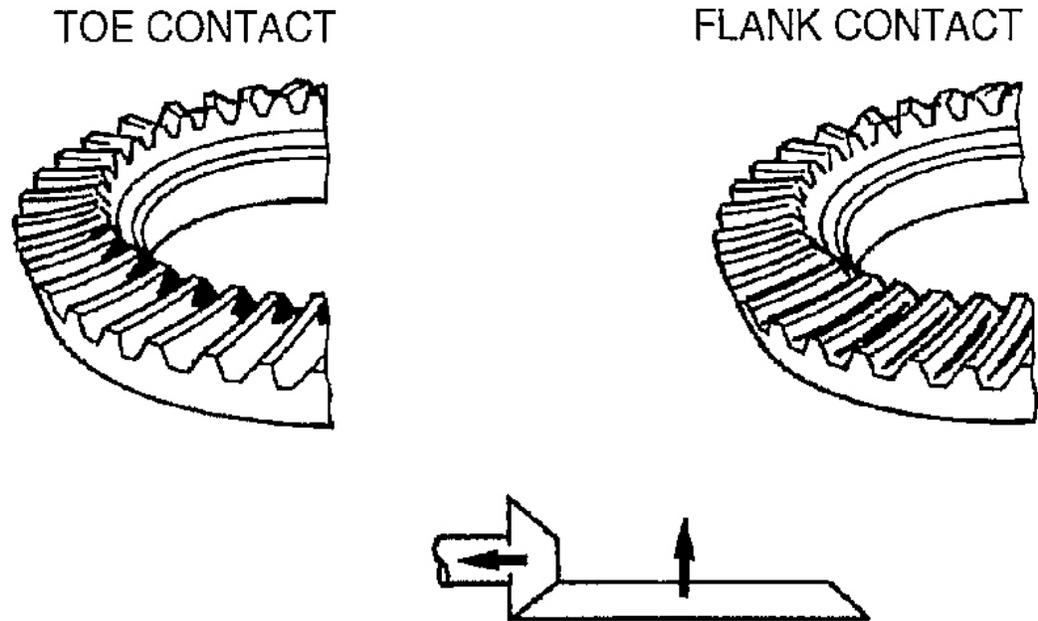
11. Inspect the teeth contact as follows,
 1. Coat both surfaces of 6-8 teeth of the ring gear with a thin coat of red lead.



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Fig. 53: Coating Both Surfaces Of Teeth Of Ring Gear With A Thin Coat Of Red Lead
Courtesy of MAZDA MOTORS CORP.

2. While moving the ring gear back and forth by hand, rotate the drive pinion several times and inspect the tooth contact.
3. If the tooth contact is good, wipe off the red lead.
4. If it is not good, adjust the pinion height, and then adjust the backlash.
 1. Inspect the toe and flank contact by replacing the spacer with a thinner one to move the drive pinion outward.

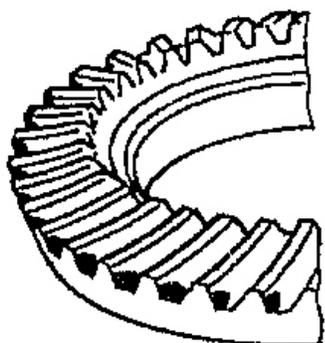


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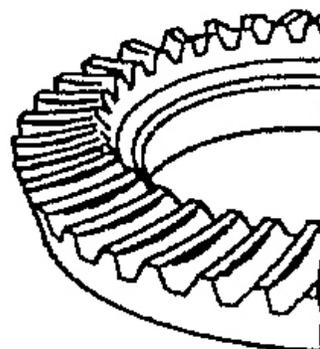
Fig. 54: Inspecting Toe And Flank Contact
Courtesy of MAZDA MOTORS CORP.

2. Inspect the heel and face contact by replacing the spacer with a thicker one to bring the drive pinion in.

HEEL CONTACT



FACE CONTACT



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Fig. 55: Inspecting Heel And Face Contact By Replacing Spacer With A Thicker One To Bring Drive Pinion
Courtesy of MAZDA MOTORS CORP.