

How to Use This Manual

This supplement contains information for the 1990 CIVIC.
Refer to following shop manuals for service procedures.

Description	Code No.
CIVIC	62SH321
Supplement	
CIVIC CHASSIS	62SH300
Maintenance and Repair	
CIVIC SHUTTLE/WAGON	62SH520
Supplement	
D12B/D13B/D14A/D15B/D16A ENGINE	62PM100
Maintenance and Repair	
L3 MANUAL TRANSMISSION	62PL300
Maintenance and Repair	
L3 (4WD) MANUAL TRANSMISSION	62PH800
Maintenance and Repair	
L4 AUTOMATIC TRANSMISSION	62PL400
Maintenance and Repair	
S5 AUTOMATIC TRANSMISSION	62PS500
Maintenance and Repair	

The first page of each section is marked with a black tab that lines up with one of the thumb index tabs on this page. You can quickly find the first page of each section without looking through a full table of contents. The symbols printed at the top corner of each page can also be used as a quick reference system.

Special information

▲ WARNING Indicates a strong possibility of severe personal injury or loss of life if instructions are not followed.

CAUTION: Indicates a possibility of personal injury or equipment damage if instructions are not followed.

NOTE: Gives helpful information.

CAUTION: Detailed descriptions of *standard* workshops procedures, safety principles and service operations are not included. Please note that this manual does contain warnings and cautions against some specific service methods which could cause **PERSONAL INJURY**, or could damage a vehicle or make it unsafe. Please understand that these warnings cannot cover all conceivable ways in which service, whether or not recommended by Honda Motor, might be done, or of the possible hazardous consequences of each conceivable way, nor could Honda Motor investigate all such ways. Anyone using service procedures or tools, whether or not recommended by Honda Motor, *must satisfy himself thoroughly* that neither personal safety nor vehicle safety will be jeopardized.

All information contained in this manual is based on the latest product information available at the time of printing. We reserve the right to make changes at any time without notice. No part of this publication may be reproduced, stored in retrieval system, or transmitted, in any form by any means, electronic, mechanical, photocopying, recording, or otherwise, without the prior written permission of the publisher. This includes text, figures and tables.



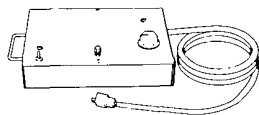
DIFFERENTIAL WITH VISCOUS COUPLING

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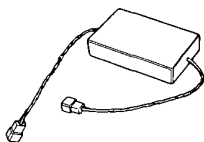
Special Tools

Special Tools

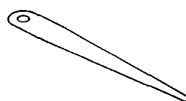
No.	Tool Number	Description	Remarks
①	07508—SB00000	ALB Checker	
②	07HAJ—SG00300	Frequency Convert Adapter	
③	07KAJ—PS30100	Feeler Gauge Set	
③-1	07KAJ—PS30110	Feeler Gauge 0.05mm	
③-2	07KAJ—PS30120	Feeler Gauge 0.25mm	
④	07979—PJ40001	Magnet Stand Base	
⑤	07KAZ—PS30100	Viscous Shaft Adapter	
⑥	07926—SD90000	Companion Flange Holder	
⑦	07744—0010400	Pin Driver 5mm	
⑧	07JAD—SH30100	Oil Seal Driver Attachment	
⑨	07KAF—PS30200	Inner Race Remover Base	
⑩	07KAB—PS30100	Dog Piece Holder	
⑪	07JAC—PH80000	Bearing Remover Set	
⑪-1	07JAC—PH80100	Bearing Remover Attachment	
⑪-2	07JAC—PH80200	Remover Handle	
⑪-3	07JAC—PH80300	Remover Weight	



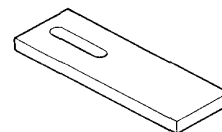
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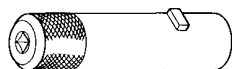
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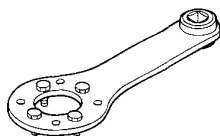
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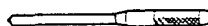
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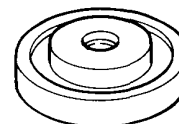
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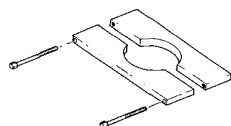
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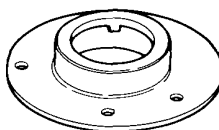
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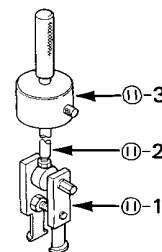
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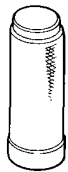


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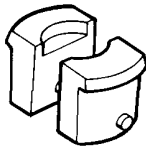


Special Tools

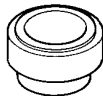
No.	Tool Number	Description	Remarks
⑫	07746-0030100	Inner Driver C	07949-6110000
⑬	07KAD-PS30100	Taper Bearing Remover	
⑭	07746-0030400	Driver Attachment 35mm	
⑮	07KAF-PS30100	Bearing Installer Tool Set	
⑮-1	07JAF-SJ80110	Shaft	
⑮-2	07JAF-SJ80120	Nut	
⑮-3	07KAF-PS30110	Taper Bearing Installer	
⑮-4	07KAF-PS30120	Taper Bearing Installer	
⑮-5	07KAF-PS30130	Taper Bearing Installer	
⑮-6	07KAF-PS30140	Taper Bearing Installer	
⑯	07KAF-PS30400	Pinion Oil Seal Driver	
⑰	07KAF-PS30500	Inner Race Driver	
⑱	07JAD-PN00100	Oil Seal Driver Attachment	
⑲	07749-0010000	Outer Driver A	
⑳	07KAJ-PS30200	Height Inspection Gauge	



⑫



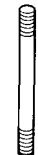
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⑭



⑮-1



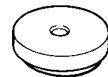
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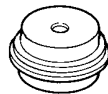
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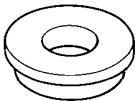
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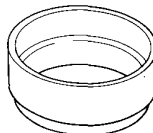
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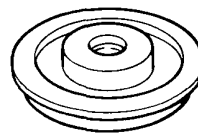
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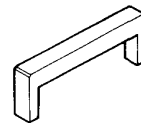
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⑱



⑲



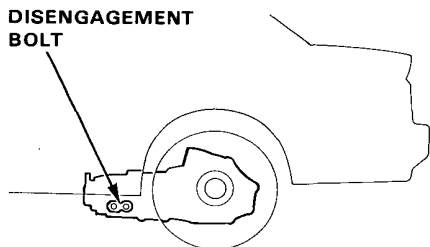
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Service Precautions

The Real Time 4WD system allows instantaneous shift from FWD to 4WD automatically when greater traction is needed. To prevent accidents or injuries, the system must be released before performing any services on the differential unit.

To release 4WD

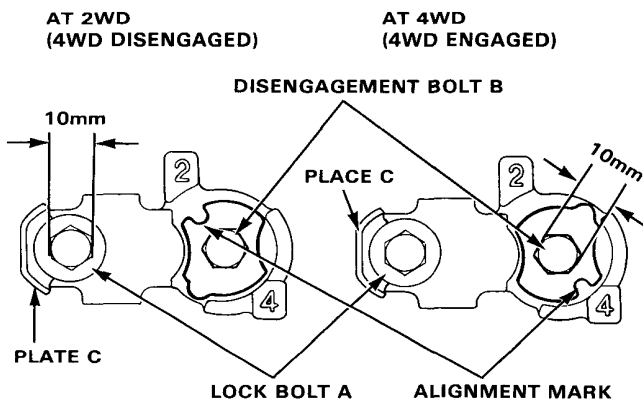
With the engine stopped, turn the shift bolt (painted orange) as described below.



1. Loosen the lock bolt A.
2. Align the mark on the disengagement bolt B with "2" to disengage the 4WD system.
3. Align the plate C with the cutout in the disengagement bolt B and tighten the lock bolt A to the specified torque.

TORQUE: 17N·m (1.7kg-m, 12lb-ft)

NOTE: When the engine starts with the 4WD system disengaged, the rear differential clutch warning light should come on.



CAUTION: After servicing, be sure to engage the 4WD system (align the alignment mark with "4") and tighten the lock bolt A securely.

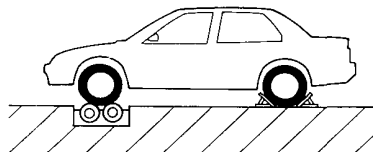
Stop the engine and disconnect the ALB B2 fuse in the engine compartment for more than 3 seconds.

The self-diagnosis lamp of the ALB control unit should stop blinking.

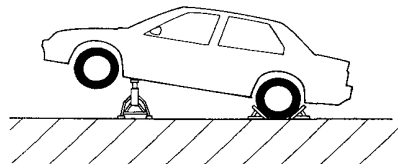
Operations Requiring 4WD Disengagement

- When using test appliances:
Speedometer tester, brake tester, chassis dynamometer, etc.

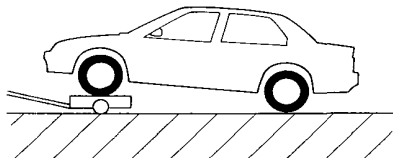
CAUTION: Apply the parking brake and block the rear wheels before using a speedometer tester. When you use a chassis dynamometer, fix the car body with a rope to prevent it from moving.



- When running the engine with the car jacked up.



- When towing with raised front or rear wheels.



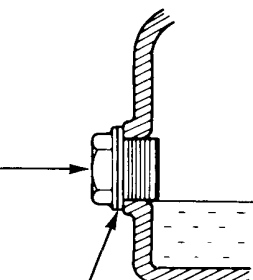
Differential Oil

Oil Level Check

Clutch Housing

1. Check with oil at operating temperature, engine OFF, and car on level ground.
2. Remove oil filler plug and check level with finger.
3. Oil level must be up to filler hole. If it is below the hole, add oil until it runs out, then reinstall plug.

OIL FILLER PLUG
40N·m (4.0kg-m, 29lb-ft)

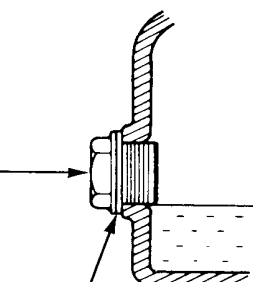


WASHER
Replace.

Differential Carrier

1. Check with oil at operating temperature, engine OFF, and car on level ground.
2. Remove oil filler plug and check level with finger.
3. Oil level must be up to filler hole. If it is below the hole, add oil until it runs out, then reinstall plug.

OIL FILLER PLUG
48N·m (4.8kg-m, 35lb-ft)



WASHER
Replace.

Oil Change

Clutch Housing

1. Change oil only when disassembling the clutch housing.

NOTE: The clutch housing has no drain bolt.

Capacity: 0.31 ℓ (0.33 US qt., 0.26 Imp. qt.) after overhaul.

Recommended oil: Genuine Honda ATF

Differential Carrier

1. Drain with transmission oil at operating temperature, engine OFF, and car on level ground.
2. Remove the oil filler plug, then remove the drain plug and drain transmission.
3. Reinstall drain plug with a new washer, and refill to proper level.

NOTE: Drain plug and filler plug washers should be replaced at every oil change.

Oil Capacity

0.93 ℓ (1.0 US qt., 0.8 Imp. qt.) after drain.

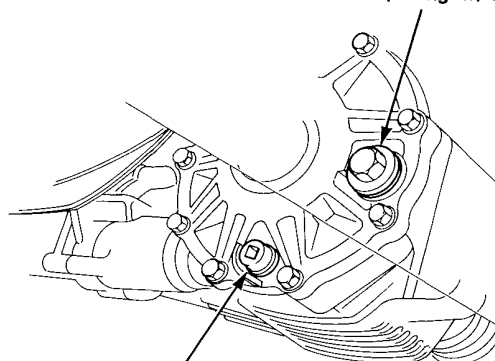
1.0 ℓ (1.1 US qt., 0.9 Imp. qt.) after overhaul.

Recommended oil: Hypoid gear oil (API Classification GL5 or equivalent)

Viscosity SAE #90 above 5°C (41°F)

SAE #80 below 5°C (41°F)

OIL FILLER PLUG
48N·m (4.8kg-m, 35lb-ft)



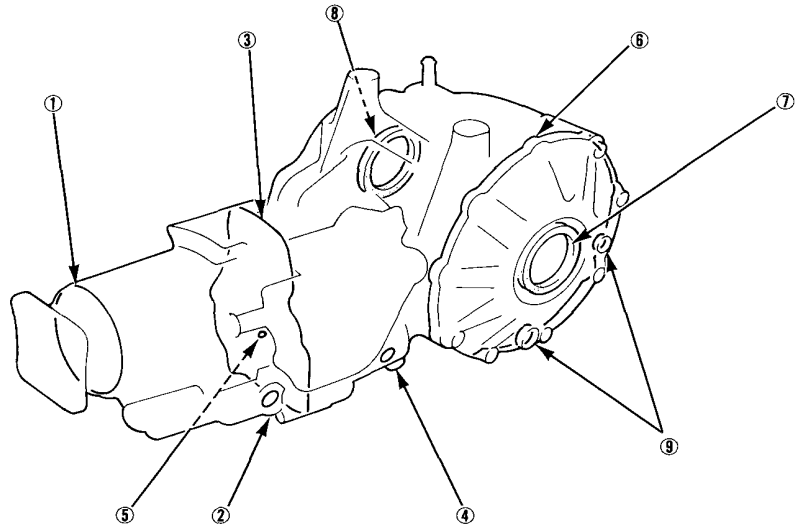
OIL DRAIN PLUG
40N·m (4.0kg-m, 29lb-ft)

Oil Leak

Inspection

CAUTION:

- Use Honda Genuine Liquid Gasket (P/N 08718—0001).
- Clean the sealing surfaces before inspection.
- Apply sealant evenly to the whole area of the sealing surfaces.
- If more than 20 minutes have passed after applying the sealant, apply it again before assembling.



- ① Check the area around the companion flange for oil leaks or seepage. If oil is leaking or seeping out, check for damaged companion flange oil seal.
- ② Check the area around 2—4 shift column for oil leaks or seepage. If oil is leaking or seeping out, check for damaged 2—4 shift column O-ring.
- ③ Check the area around the intermediate plate for oil leaks or seepage. If oil is leaking or seeping out, remove the intermediate plate and apply Honda Genuine Liquid Gasket (P/N 08718—0001) again.
- ④ Remove the check bolt and check for oil leaks or seepage. If oil is leaking or seeping out, check for damaged 2—4 shift shaft oil seal.
- ⑤ Check the check hole for oil leaks or seepage. If oil is leaking or seeping out, check for damaged two-liquid separator oil seals.

- ⑥ Check the area around the carrier cover for oil leaks or seepage. Remove the carrier cover and apply Honda Genuine Liquid Gasket (P/N 08718—0001) again, if necessary.
- ⑦ Check the area around the carrier cover oil seal for oil leaks or seepage. If oil is leaking or seeping out, check for damaged carrier cover oil seal.
- ⑧ Check the area around the differential carrier side oil seal for oil leaks or seepage. Check for damaged differential carrier side oil seal if necessary.
- ⑨ Check the areas around the oil filler plug and the drain plug for oil leaks or seepage. Replace the washers if necessary.

CAUTION: Clean the differential; this will make it easy to identify the oil leak/seepage point.

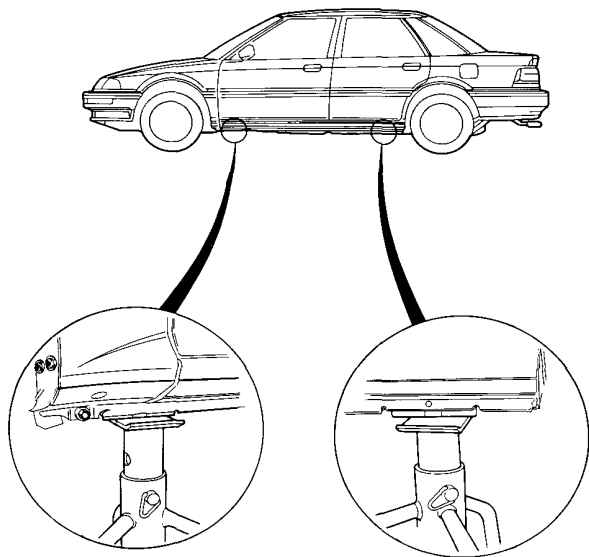
NOTE: Refer to "Disassembly" and "Reassembly" of the differential.

Viscous Coupling

Inspection

MT

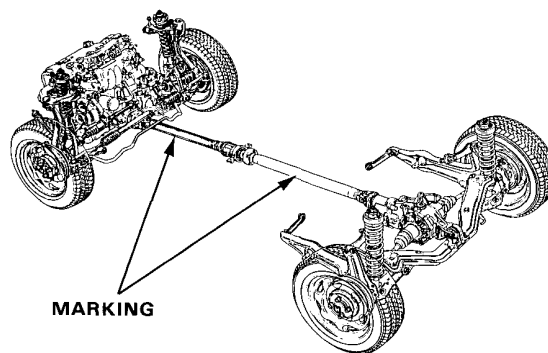
1. Raise the car off the ground and place safety stands under the side sill reinforcement sections.



2. Start the engine and keep the engine speed at idle.
3. Shift into low gear and gradually release the clutch.
4. Apply the parking brake firmly.
 - Viscous coupling is OK if the engine stalls.
 - Viscous coupling is faulty if the engine continues to run.

AT

1. Raise the car off the ground and place safety stands under the side sill reinforcement sections (see left drawing).
2. Mark either the No. 1 or No. 2 propeller shaft.



3. Start the engine and keep the engine speed at idle.
4. Fix the engine speed at low gear by moving the shift lever to the 2nd gear range and pressing the LOW switch.
5. Apply the parking brake firmly and hold the engine idling for 5 minutes.

NOTE: Both the front and rear wheels should be spinning before the parking brake is applied, while the rear wheels should lock and the front wheels should turn slowly when the parking brake is applied.

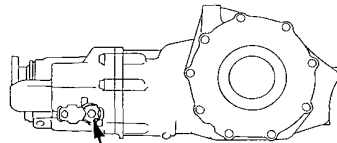
6. After the engine has idled for 5 minutes, measure the time during which the marked propeller shaft rotates 10 times.
 - Viscous coupling is OK if the time for 10 turns is 18 seconds or more.
 - Viscous coupling is faulty if the time for 10 turns is less than 18 seconds.

CAUTION: Release the parking brake lever immediately after measuring. Otherwise, the temperature of the viscous coupling rises causing damage.

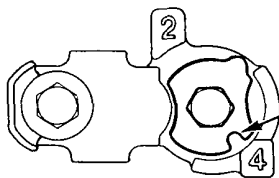
Differential Clutch

Operation Check (Mechanical)

1. Check for operation with the engine OFF.
2. Block the front wheels securely. Jack up the rear of the car and place safety stands under the side sill reinforcement sections.
3. Make sure that the 4WD system is engaged.



DISENGAGEMENT BOLT

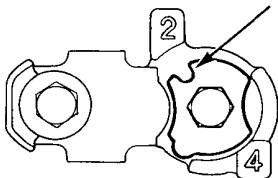


4WD ENGAGED

ALIGNMENT MARK

4. Make sure that the rear wheels cannot be turned by hand.
5. Disengage the 4WD system.

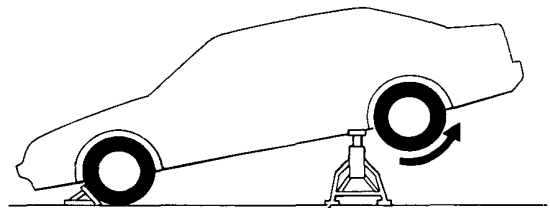
AT 2WD
(4WD DISENGAGED)



ALIGNMENT MARK

6. Make sure that the rear wheels can be turned by hand.
7. If the rear wheels turn in step 4, or if they do not turn in step 6, check the differential for damage.

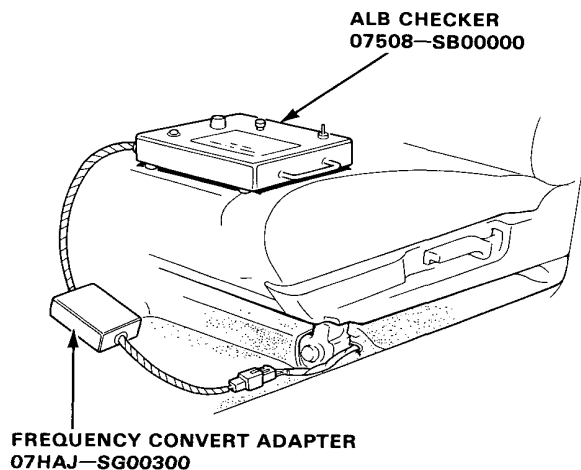
CAUTION: Do not forget to engage the 4WD system after checking the differential clutch for operation.



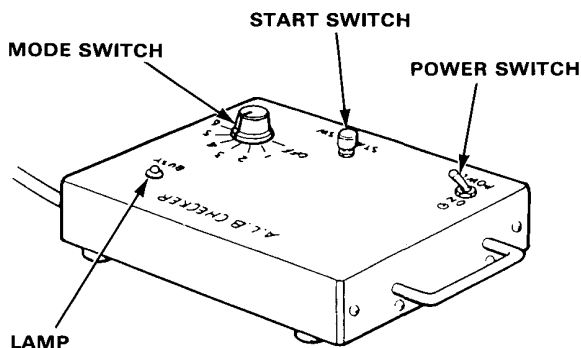
SAFETY STAND

Operation Check (With ALB Checker)

1. Check the ALB for operation using the ALB checker.
2. Follow the ALB checker manufacturer's instructions and make sure that the rear differential clutch warning light operates properly.

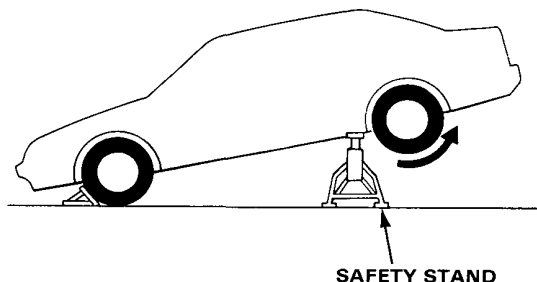


3. Stop the engine.
 4. Block the front wheels securely. Jack up the rear of the car and place safety stands under the side sill reinforcement sections.
 5. Shift into the neutral (MT) or park range (AT).
 6. Short-circuit the stop switch terminals.
- NOTE: Instead of the above steps, operation can be checked by having an assistant depress the brake pedal. Do not depress the brake pedal excessively, otherwise the rear wheels cannot be checked for turning properly.
7. Start the engine.
 8. Turn the ALB checker power switch to ON.
 9. Set the mode switch at either "4" or "5".



10. Push the start switch.

11. Make sure that the rear wheels can be rotated by hand while the solenoid sound can be heard (i.e. when kickback occurs).
If the wheels cannot be rotated by hand, refer to the troubleshooting in section 13, ALB.



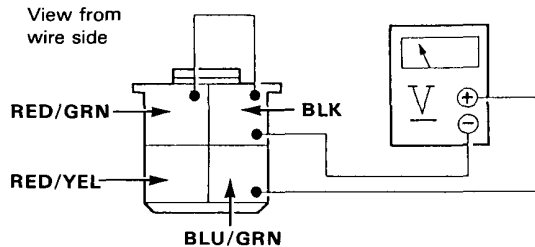
CAUTION: Disconnect the ALB checker after inspection. The ALB can operate accidentally, if the car is driven with the ALB checker connected.

Differential Clutch

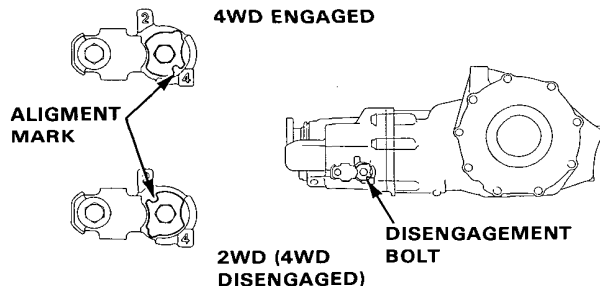
Operation Check (With Jumper Wire)

CAUTION: Do not turn the ignition switch to **ON** for more than 5 minutes, and do not short-circuit the **RED/YEL** wire (suction solenoid) and **BLK** wire for more than 5 seconds. The rear differential solenoid could get damaged.

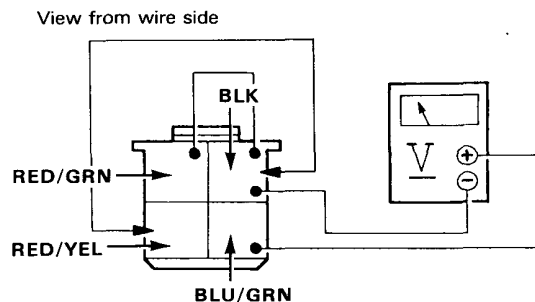
1. Take the pink 4-P connector located under the assistant seat. Short-circuit the **RED/GRN** wire (holding solenoid) and **BLK** wire with a piece of jumper wire, and connect a circuit tester to the **BLU/GRN** wire (stroke switch: positive +) and **BLK** wire (negative -).



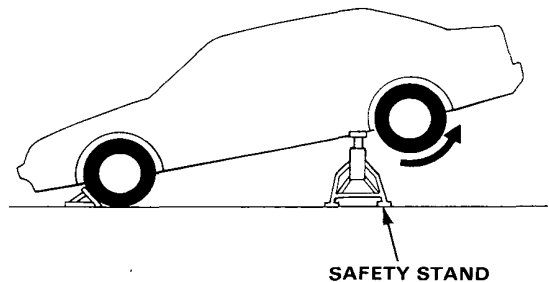
2. Block the front wheels securely. Jack up the rear of the car and place safety stands under the side sill reinforcement sections.
3. Make sure that the 4WD system is engaged.



4. Turn the ignition switch to **ON**.
5. Make sure that the circuit tester indicates the battery voltage.
If the tester indicates 0V, check for the faulty stroke switch circuit.
6. Using another piece of jumper wire, short-circuit the **RED/YEL** wire (suction solenoid) and **BLK** wire momentarily (less than 5 sec.).



7. Check that the circuit tester indicates 0V and the rear wheels can be turned by hand.
 - If the rear wheels cannot be turned by hand, check for broken wire harnesses and faulty solenoid.
 - If the rear wheels turn but the tester does not indicate 0V, check for a fault in the stroke switch circuit.



Troubleshooting

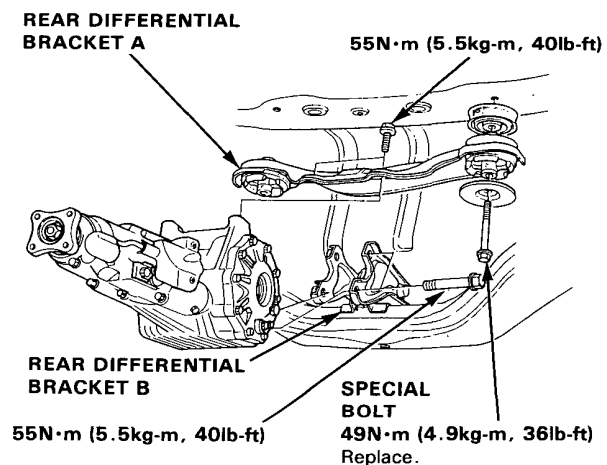
CAUTION: Most problems in the unit are to be diagnosed by identifying noises from the gears or bearings. Care should be taken during diagnosis not to confuse the differential noises with those from other drive train components.

Symptom	Probable Cause	Remedy
Consistent noise during cruising.	• Lack of oil	• Replenish oil
	• Foreign matter stuck in gears, etc.	• Clean and inspect. • Replace any damaged or faulty parts.
	• Improper tooth contact between ring gear and hypoid pinion. • Worn or damaged side bearing. • Worn or damaged hypoid pinion taper bearing.	• Adjust or replace.
	• Worn ring gear or hypoid pinion. • Deformed ring gear or differential carrier. • Damaged gears, etc.	• Replace.
Gear noises while accelerating	• Lack of oil	• Replenish oil
	• Foreign matter stuck in gears, etc.	• Clean and inspect. • Replace damaged parts.
	• Gears not engaged properly or misadjusted. • Improper hypoid pinion preload.	• Clean and inspect. • Replace damaged parts.
	• Chipped or damaged gears	• Replace.
Gear noises while coasting	• Improper hypoid pinion preload. • Chipped or damaged gears.	• Adjust or replace.
Bearing noises while accelerating or coasting/ decelerating	• Cracked or damaged hypoid pinion taper bearing or side bearing.	• Replace.
Abnormal noises while starting or accelerating	• Excessive backlash between ring gear and hypoid pinion gear. • Improper ring gear or hypoid pinion preload.	• Adjust.
	• Worn viscous side spline.	• Replace.
Oil leak	• Oil level too high	• Lower to proper level.
	• Clogged breather hole.	• Clean or replace.
	• Loose differential carrier or inadequate sealing.	• Recheck torque or apply sealant.
	• Worn or damaged oil seal.	• Replace.
Overheating	• Lack of oil.	• Replenish.
	• Insufficient backlash between ring gear and hypoid pinion gear.	• Adjust.
	• Excessive ring gear or hypoid pinion preload.	• Adjust.
Shock noises from the rear when starting	• Excessive backlash between ring gear and hypoid pinion gear.	• Adjust.
Shock noises from rear differential when rounding a curve in reverse gear at full speed	• Dog clutch out of engagement.	• Adjust or replace.

Differential

Removal/Installation

1. Disconnect the harness connectors.
2. Drain oil from the differential.
3. Remove the propeller shaft.
4. Remove the right and left rear drive shafts.
5. Remove the two mounting bolts from the rear differential bracket B.
6. Remove the rear differential bracket A.
7. Remove the rear differential from the rear differential bracket A.



8. Installation is in the reverse order of removal. After installing the rear differential, pour the specified amount of the ATF oil into the clutch housing and the hypoid gear oil into the differential carrier (see page 5 of 40).

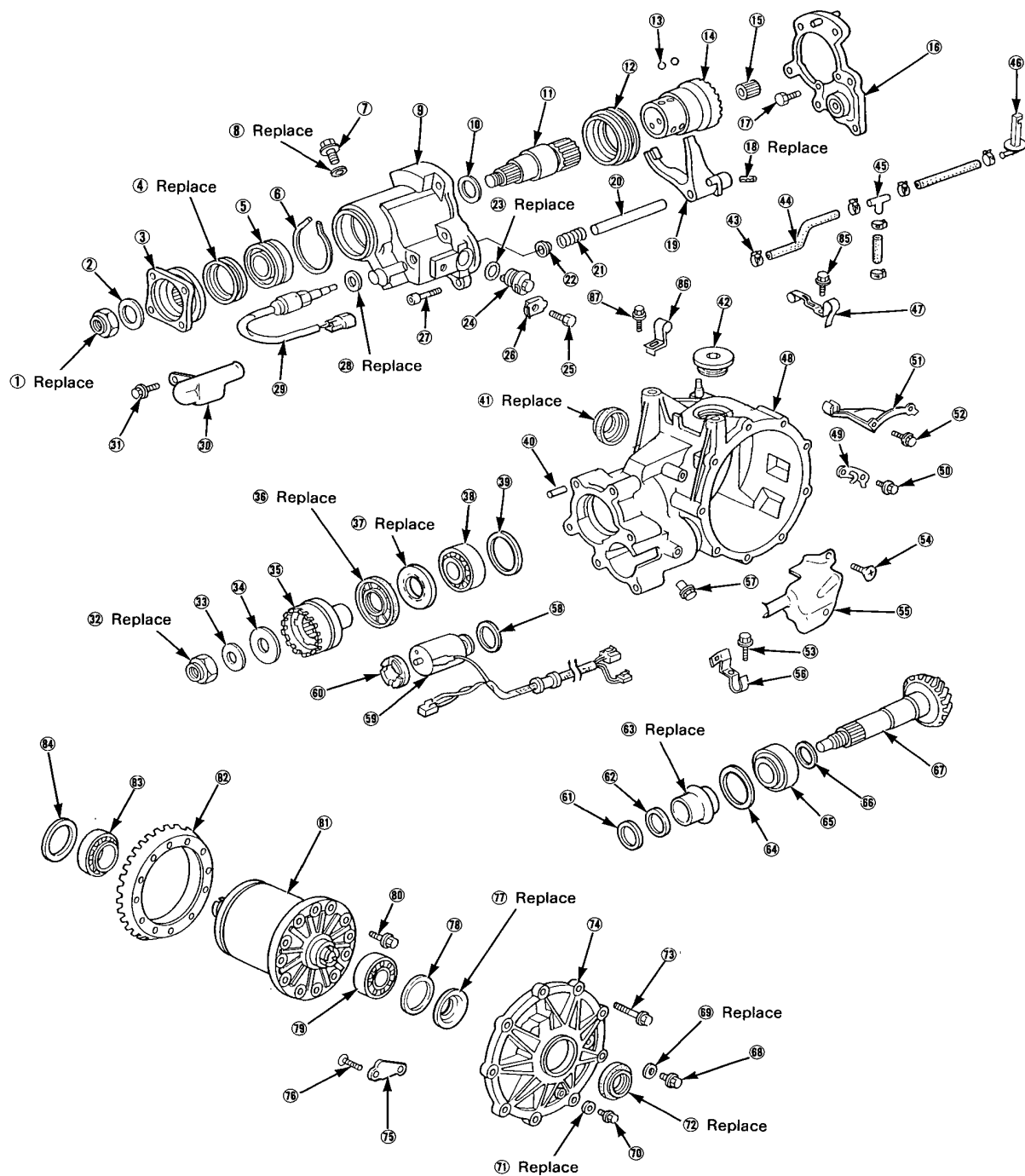
Differential

Illustrated Index

CAUTION: Coat the clutch housing side parts with ATF and the differential carrier side parts with hypoid gear oil.

NOTE:

- Clean the parts (except solenoid) thoroughly in cleaning solvent and dry them with compressed air. Blow out all passages.
- Coat the rotating or sliding sections of the parts with oil before reassembly.



-
- ① LOCKNUT 20mm 99N·m (9.9kg-m, 72lb-ft)
 - ② SPRING WASHER 20mm
 - ③ COMPANION FLANGE
 - ④ OIL SEAL
 - ⑤ BALL BEARING
 - ⑥ SNAP RING 59mm
 - ⑦ FILLER BOLT 14mm
40N·m (4.0kg-m, 29lb-ft)
 - ⑧ WASHER 14mm
 - ⑨ CLUTCH HOUSING
 - ⑩ SHIM 30mm
 - ⑪ 2—4 INPUT SHAFT
 - ⑫ 2—4 SLEEVE
 - ⑬ STEEL BALL
 - ⑭ DOG CLUTCH HUB
 - ⑮ NEEDLE BEARING 20 x 26 x 17
 - ⑯ INTERMEDIATE PLATE
 - ⑰ BOLT 8mm 24N·m (2.4kg-m, 18lb-ft)
 - ⑱ SPRING PIN
 - ⑲ 2—4 SHIFT FORK
 - ⑳ 2—4 SHIFT SHAFT
 - ㉑ 2—4 SHIFT SPRING
 - ㉒ 2—4 SHIFT SPACER
 - ㉓ O-RING
 - ㉔ 2—4 SHIFT COLUMN
 - ㉕ LOCK BOLT 17N·m (1.7kg-m, 13lb-ft)
 - ㉖ LOCK BOLT WASHER
 - ㉗ SOCKET BOLT 24N·m (2.4kg-m, 18lb-ft)
 - ㉘ WASHER 14mm
 - ㉙ STROKE SWITCH 25 N·m (2.5kg-m, 18lb-ft)
 - ㉚ STROKE SWITCH PROTECTOR
 - ㉛ BOLT 8mm 26N·m (2.6kg-m, 19lb-ft)
 - ㉜ LOCKNUT 26mm
150—300N·m (15—30kg-m, 109—217lb-ft)
(Within preload)
 - ㉝ SPRING WASHER 26mm
 - ㉞ HUB WASHER
 - ㉟ DOG PIECE
 - ㊱ OIL SEAL
 - ㊲ OIL SEAL
 - ㊳ TAPER BEARING
 - ㊴ OUTER SPACER 62mm
 - ㊵ DOWEL PIN
 - ㊶ OIL SEAL
 - ㊷ SEALING BOLT 34mm
 - ㊸ TUBE CLAMP
 - ㊹ TUBE
 - ㊺ 3-WAY JOINT
 - ㊻ BREATHER TUBE JOINT
 - ㊼ BREATHER PIPE JOINT
 - ㊽ DIFFERENTIAL CARRIER
 - ㊾ BREATHER CHAMBER PLATE
 - ㊿ BOLT 6mm 11N·m (1.1kg-m, 8lb-ft)
 - ① OIL GUTTER PLATE
 - ② BOLT 6mm 11N·m (1.1kg-m, 8lb-ft)
 - ③ BOLT 6mm 13N·m (1.3kg-m, 10lb-ft)
 - ④ FLAT SCREW
 - ⑤ HARNESS PROTECTOR
 - ⑥ STROKE SWITCH CLAMP
 - ⑦ CHECK BOLT 10mm
17N·m (1.7kg-m, 13lb-ft)
 - ⑧ SOLENOID SPACER
 - ⑨ 2—4 SOLENOID ASSEMBLY
 - ⑩ SOLENOID MOUNTING SPACER
 - ⑪ SHIM 30mm
 - ⑫ SHIM 30mm
 - ⑬ PINION SPACER
 - ⑭ OUTER SPACER 72mm
 - ⑮ TAPER BEARING 32207C
 - ⑯ SHIM 35mm
 - ⑰ HYPOID PINION
 - ⑱ FILLER BOLT 20mm
48N·m (4.8kg-m, 35lb-ft)
 - ⑲ WASHER 20mm
 - ㉑ DRAINBOLT 14mm
40N·m (4.0kg-m, 29lb-ft)
 - ㉒ WASHER 14mm
 - ㉓ OIL SEAL
 - ㉔ BOLT 8mm 24N·m (2.4kg-m, 18lb-ft)
 - ㉕ CARRIER COVER
 - ㉖ OIL CHAMBER PLATE
 - ㉗ FLAT SCREW
 - ㉘ OIL GUIDE PLATE
 - ㉙ SHIM 66.5mm
 - ㉚ TAPER BEARING
 - ㉛ SPECIAL BOLT 10mm
105N·m (10.5kg-m, 76lb-ft)
 - ㉜ VISCOUS ASSEMBLY
 - ㉝ HYPOID RING GEAR
 - ㉞ TAPER BEARING
 - ㉟ SHIM 66mm
 - ㊱ BOLT 6mm 13N·m (1.3kg-m, 10lb-ft)
 - ㊲ HARNESS CLAMP
 - ㊳ BOLT 6mm 13N·m (1.3kg-m, 10lb-ft)

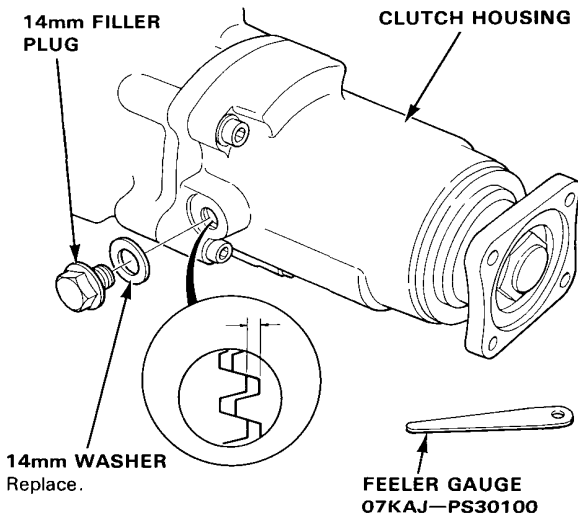
Disassembly

Inspection before Disassembly

1. Remove the 14mm filler plug from the clutch housing. Measure the dog clutch clearance using the feeler gauge.

CAUTION: Measure the clearance at four diagonally opposed points.

Standard: 0.05mm (0.002in) feeler gauge can be inserted, while 0.25mm (0.01in) cannot.

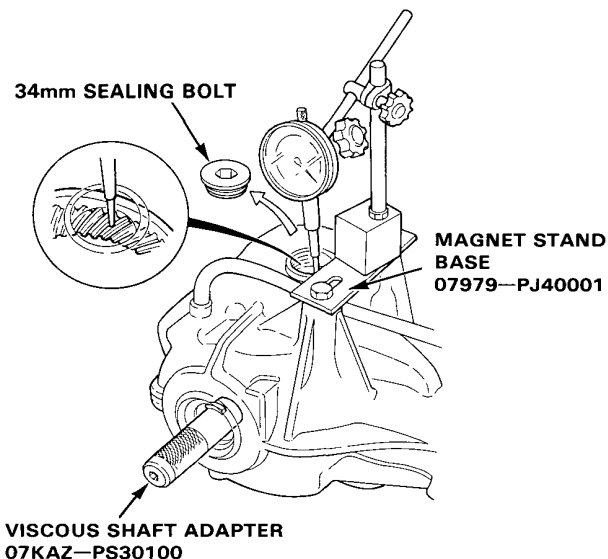


2. Remove the 34mm sealing bolt from the differential carrier and measure the ring gear backlash.

CAUTION: Measure the backlash at four diagonally opposed points.

Standard: 0.10—0.15mm (0.004—0.006in)

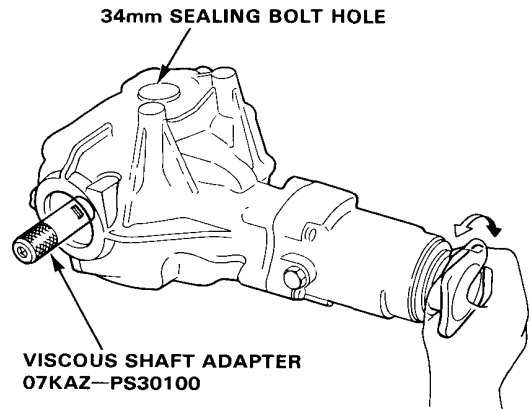
NOTE: Measure the backlash by holding the dog piece and moving the viscous shaft adapter.



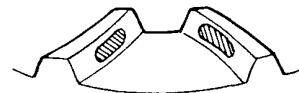
3. Check the tooth contact between the ring gear and hypoid pinion through the 34mm sealing bolt hole.

NOTE: Paint the ring gear teeth (on both sides of each tooth) lightly and evenly with Prussian Blue. Applying load to the ring gear, rotate the companion flange one full turn both forward and backward.

CAUTION: Check at three equally spaced points.



GOOD TOOTH CONTACT PATTERN

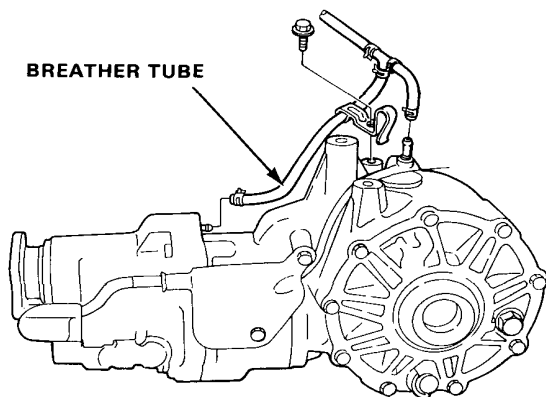


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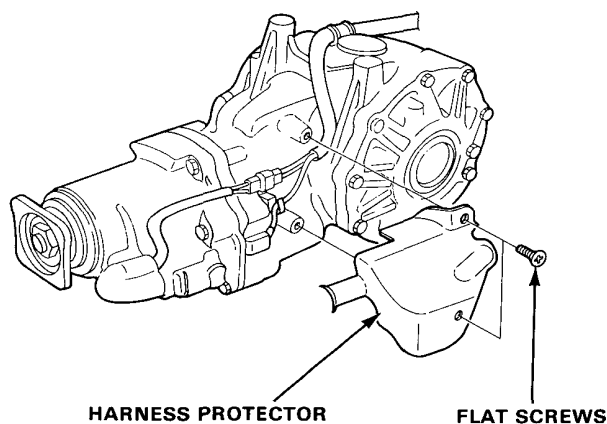
Differential

Disassembly (cont'd)

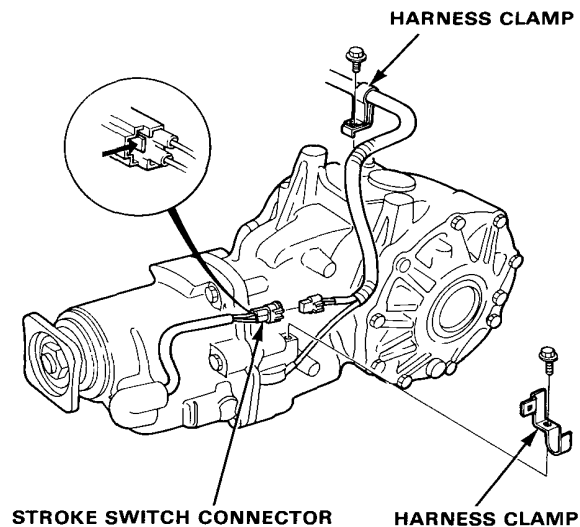
4. Disconnect the breather tube.



5. Remove the flat screws and the harness protector.



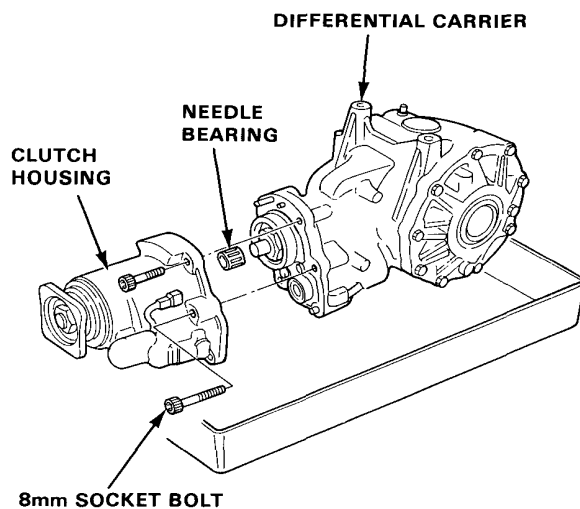
6. Remove the harness clamps and disconnect the stroke switch connector.



7. Remove the 8mm socket bolt and remove the clutch housing from the differential carrier.

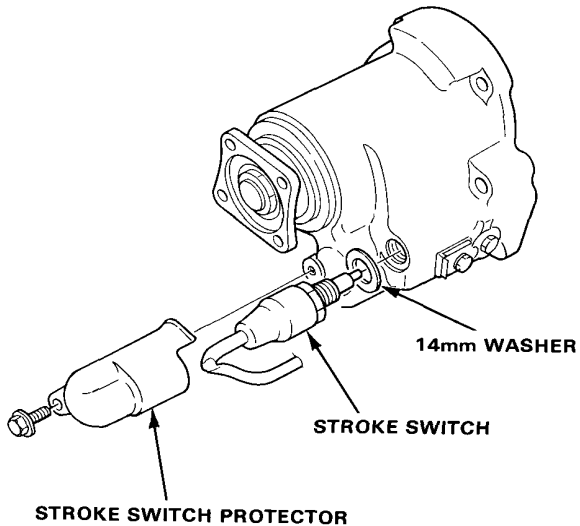
NOTE:

- Put a pan under the clutch housing and differential carrier when separating them, because ATF will flow out.
- Separate the clutch housing from the differential carrier by tapping lightly on the companion flange with a plastic hammer.

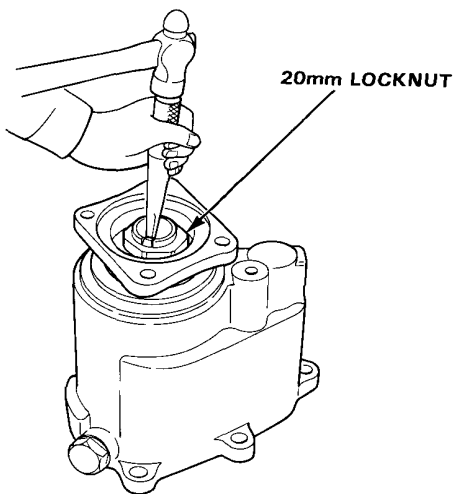


Clutch Housing

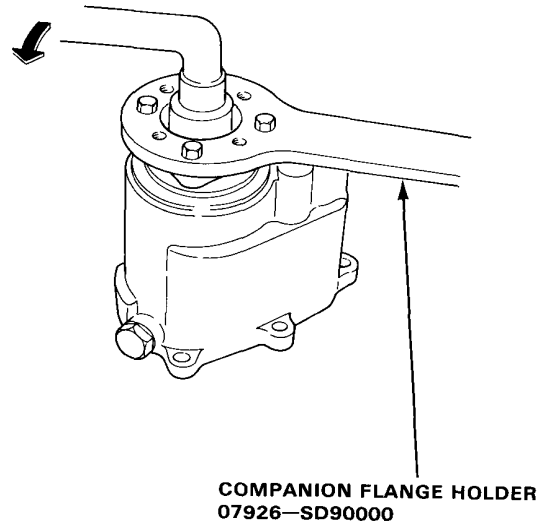
8. Remove the stroke switch protector and stroke switch.



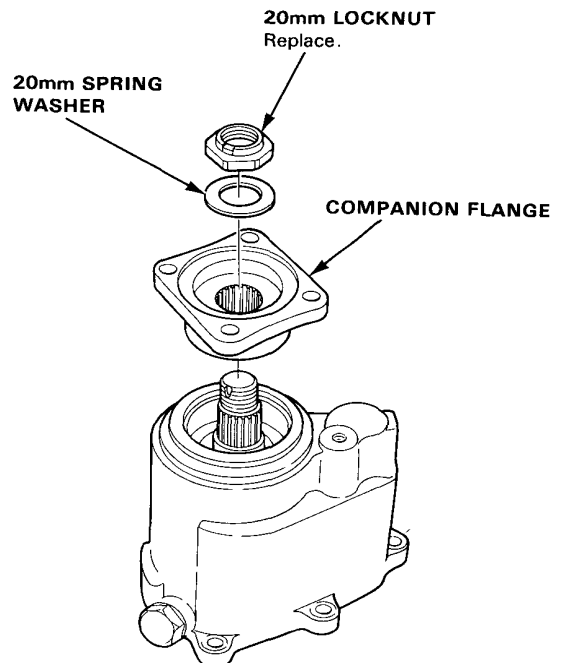
9. Pry off the staked area of the 20mm locknut.



10. Hold the companion flange with the Companion Flange Holder and loosen the 20mm locknut.



11. Remove the 20mm locknut, 20mm spring washer, and the companion flange.



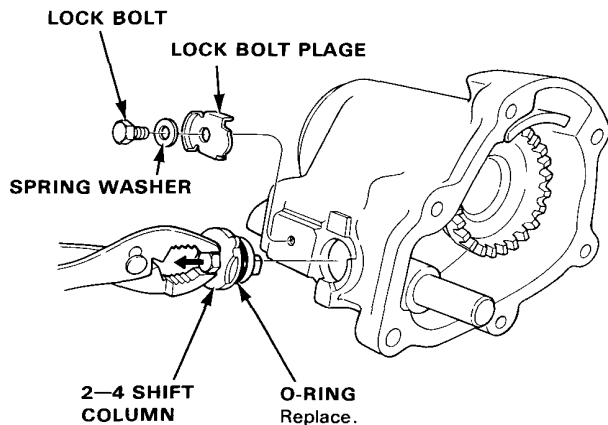
(cont'd)

Differential

Disassembly (cont'd)

12. Remove the locknut and lock bolt plate, then pull out the 2-4 shift column.

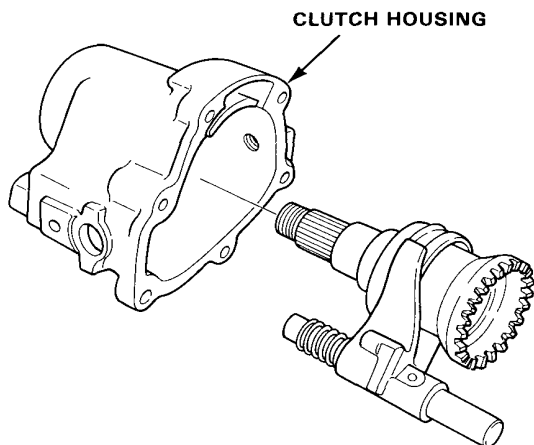
NOTE: Use a pair of pliers to remove the 2-4 shift column.



13. Remove the 2-4 input shaft, dog clutch hub, 2-4 sleeve, steel balls, 30mm shim, 2-4 shift shaft, 2-4 shift fork, 2-4 shift spring, and the 2-4 shift spacer as a set.

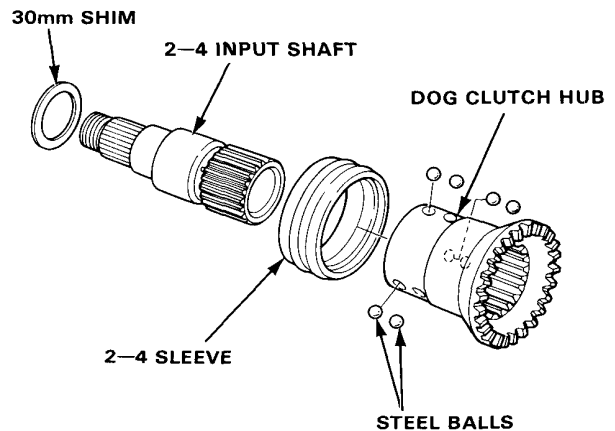
NOTE:

- Put the clutch housing in a pan and remove the parts with care in order not to loose the steel balls.
- Remove the parts by tapping lightly on the 2-4 input shaft with a plastic hammer.

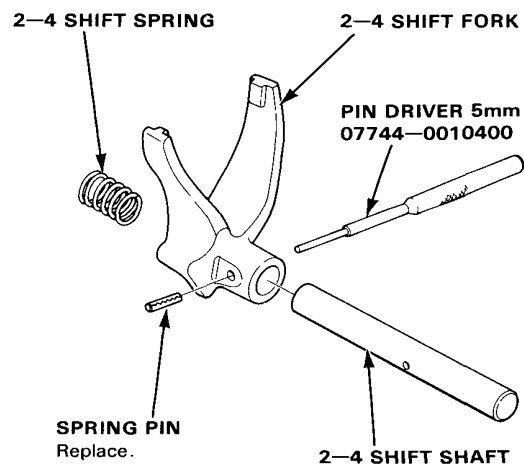


- 1) Disassemble the 2-4 input shaft, dog clutch hub, 2-4 sleeve, steel balls, and the 30mm shim.

CAUTION: Before disassembly, mark the 2-4 input shaft and dog clutch hub to ensure correct reassembly.

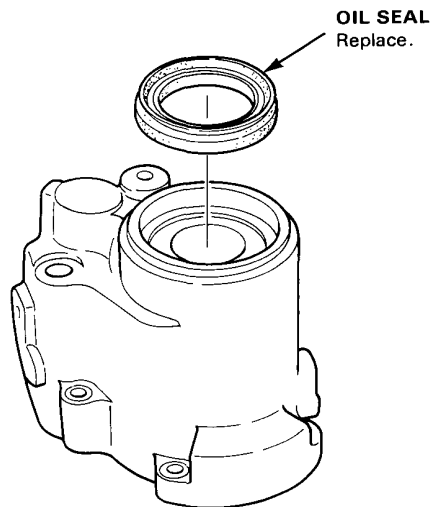


- 2) Disassemble the 2-4 shift shaft, 2-4 shift fork, 2-4 shift spring, and the 2-4 shift spacer.

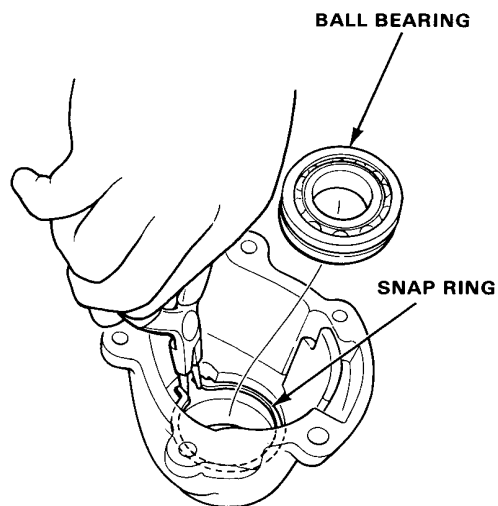


14. Remove the oil seal.

CAUTION: Do not damage the oil seal surface.



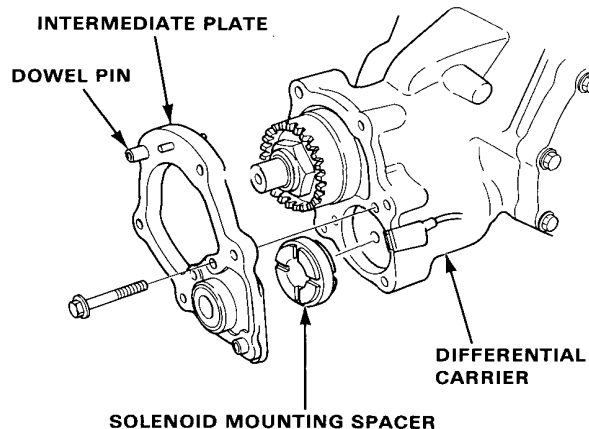
15. Expand the snap ring and remove the ball bearing.



Intermediate Plate

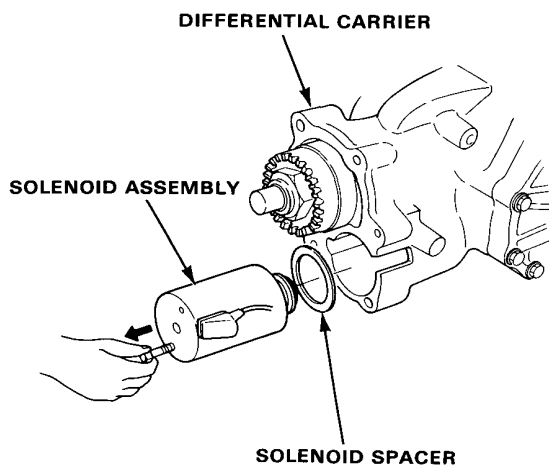
16. Remove the bolts and remove the intermediate plate and solenoid mounting spacer from the differential carrier.

NOTE: Remove the intermediate plate by tapping it lightly with a plastic hammer.



17. Screw the 6mm bolt into the solenoid assembly, and remove the solenoid assembly and solenoid spacer from the differential carrier.

CAUTION: Do not remove by pulling the harness.



(cont'd)

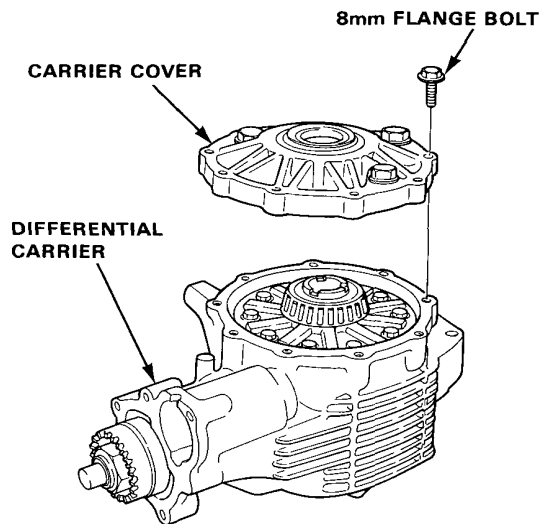
Differential

Disassembly (cont'd)

Carrier Cover

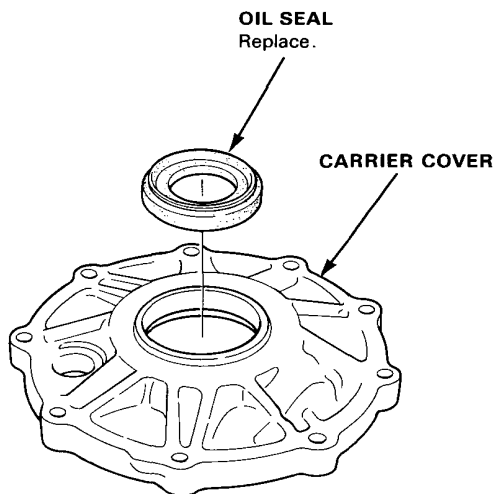
18. Remove the 8mm flange bolts from the carrier cover and the carrier cover from the differential carrier.

NOTE: Remove the carrier cover by tapping it lightly with a plastic hammer.



19. Remove the oil seal.

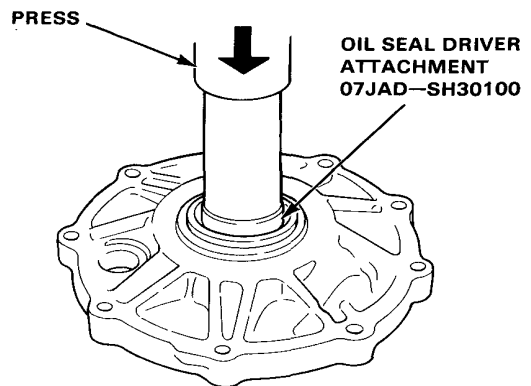
CAUTION: Do not damage the oil seal surface.



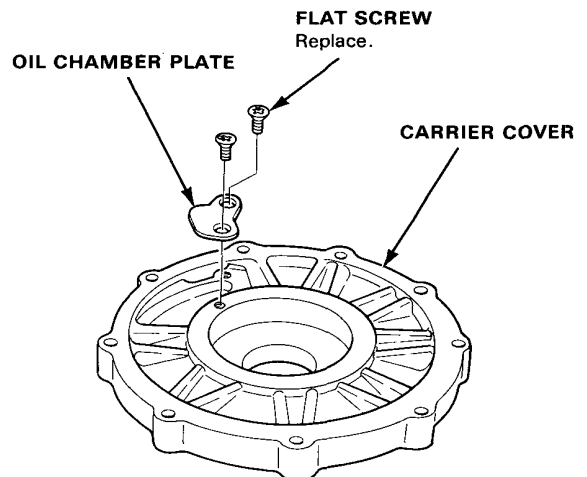
20. Drive out the oil plate, 66.5mm shim, and the taper bearing outer race using the Oil Seal Driver Attachment.

CAUTION :

- Take care not to damage the carrier cover sealing surface.
- Replace the oil guide plate if it is deformed.

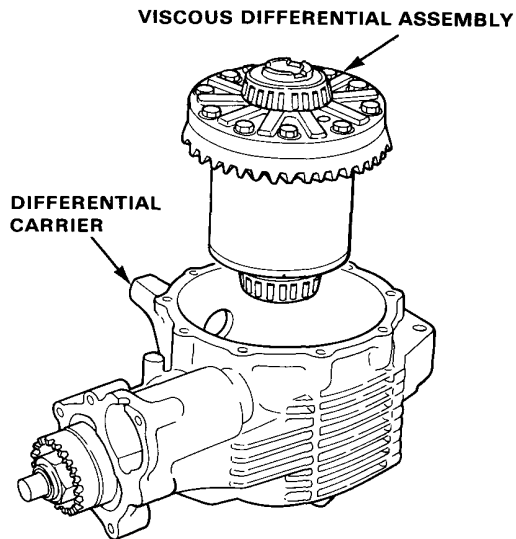


21. Straighten the staked area, then remove the flat screws and oil chamber plate.

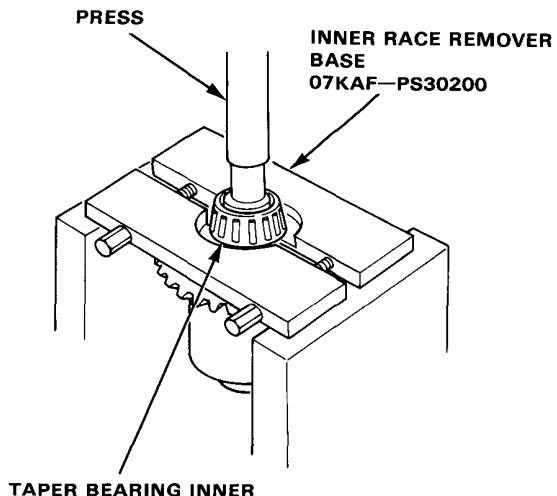


Viscous Differential Assembly

22. Remove the viscous differential assembly, ring gear, and the taper bearing inner from the differential carrier as an assembly.



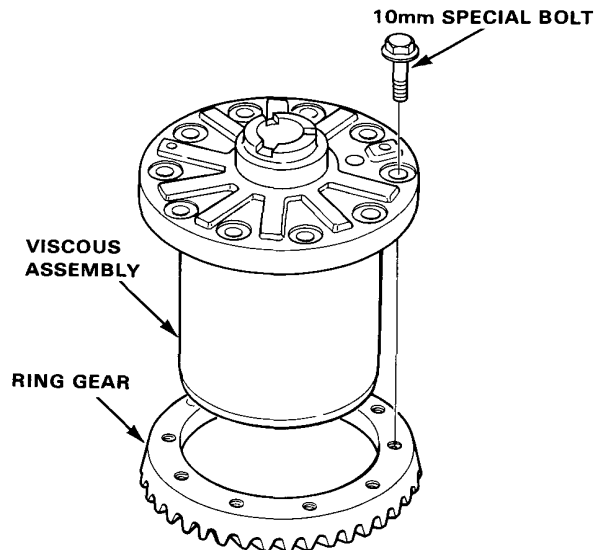
23. Pull off the taper bearing inner using the press and the Inner Race Remover Base.



24. Remove the 10mm special bolts and the ring gear.

CAUTION:

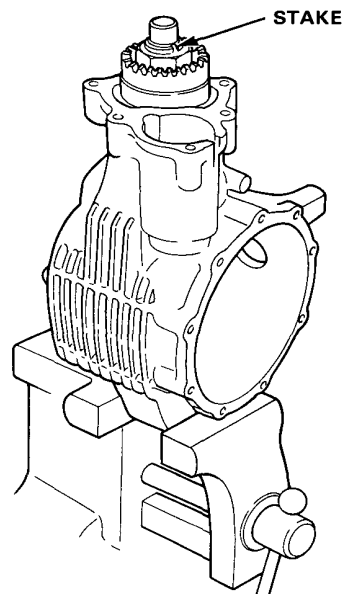
- Remove the 10mm special bolts by loosening them in a criss-cross pattern in several steps.
- Do not remove the torx bolts from the viscous coupling.



Differential Carrier

25. Straighten the staked area of the 26mm locknut.

CAUTION: Make sure the staked area gets completely straightened.



(cont'd)

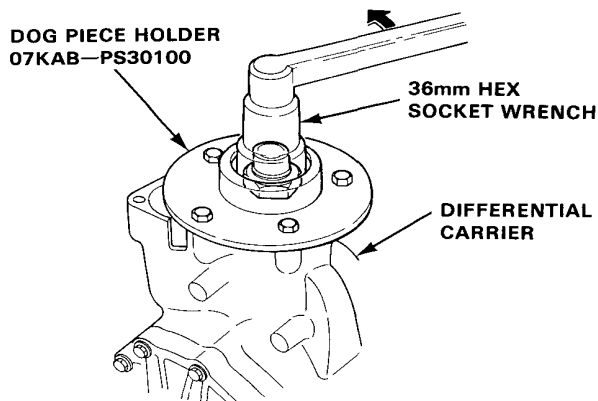
Differential

Disassembly (cont'd)

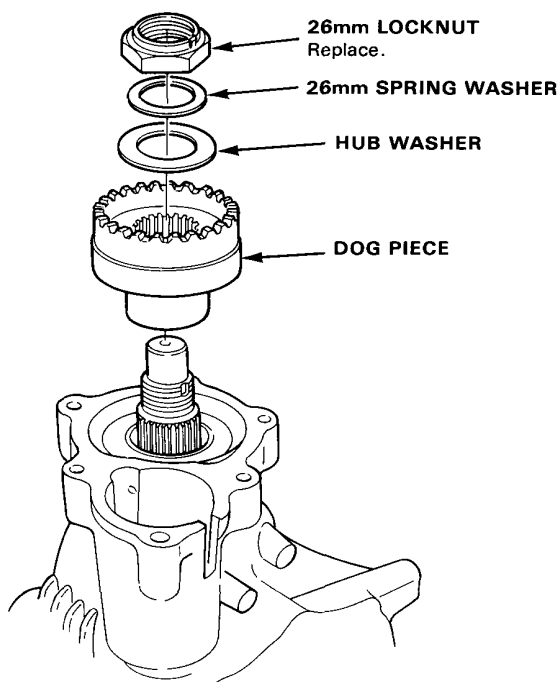
26. Attach the Dog Piece Holder to the differential carrier and loosen the 26mm locknut.

CAUTION:

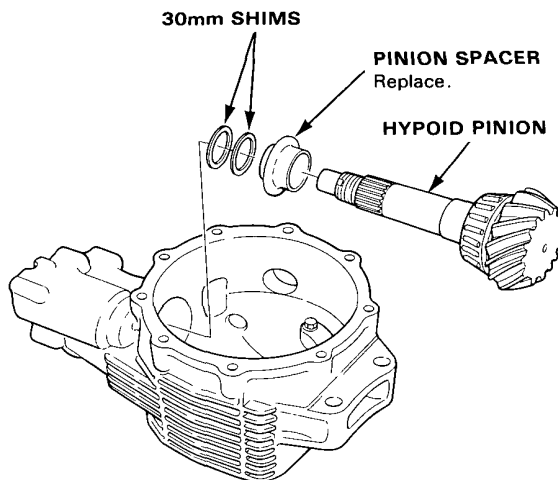
- Attach the Dog Piece Holder securely to the differential carrier.
- Make sure that the carrier cover is installed on the differential carrier.
- Use an appropriate socket wrench that can reach the locknut.



27. Remove the 26mm locknut, 26mm spring washer, hub washer, and the dog piece.

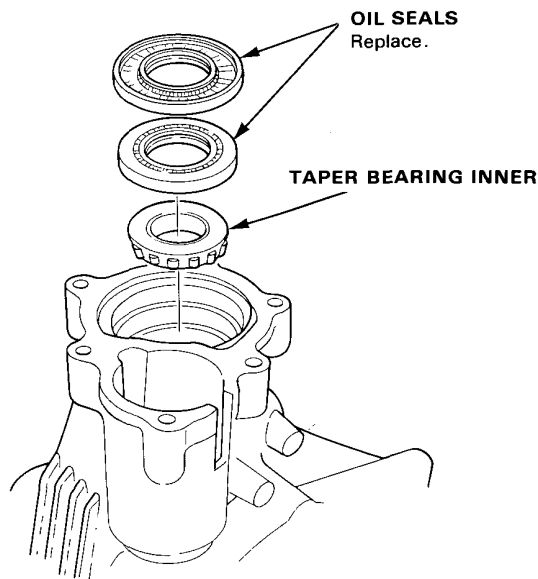


28. Remove the hypoid pinion, 35mm shim, taper bearing inner, pinion spacer, and the two 30mm shims.

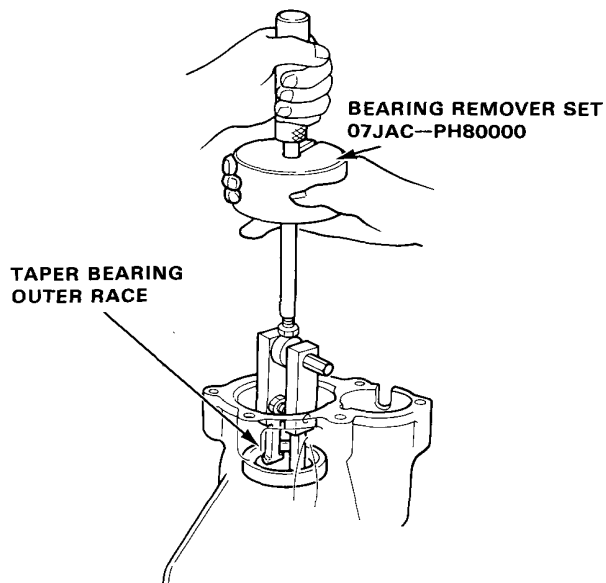


29. Remove the two-liquid separator oil seals and taper bearing inner.

CAUTION: Do not damage the oil seal surface.

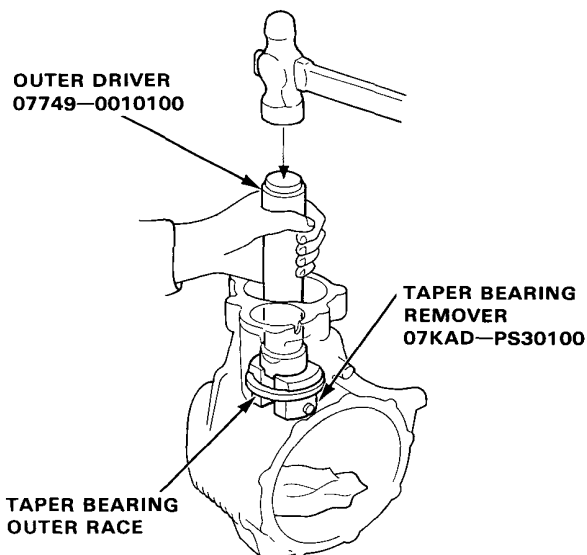


30. Remove the taper bearing outer race and 62mm outer spacer using the Bearing Remover Set.

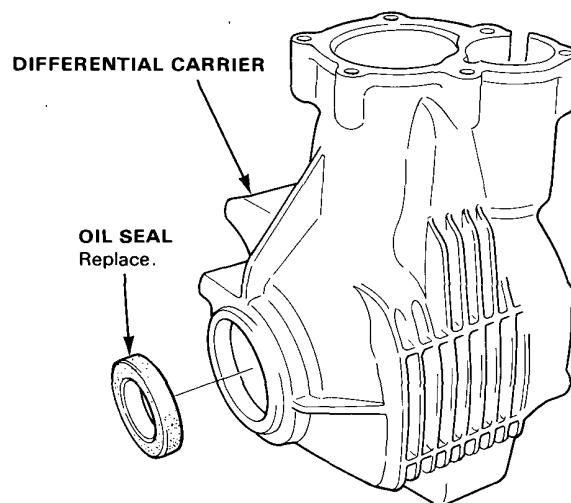


31. Drive out the taper bearing outer race and 72mm outer spacer using the Outer Driver and Taper Bearing Remover.

CAUTION: To prevent damage to the differential carrier, place a shop towel or equivalent material into the differential carrier.

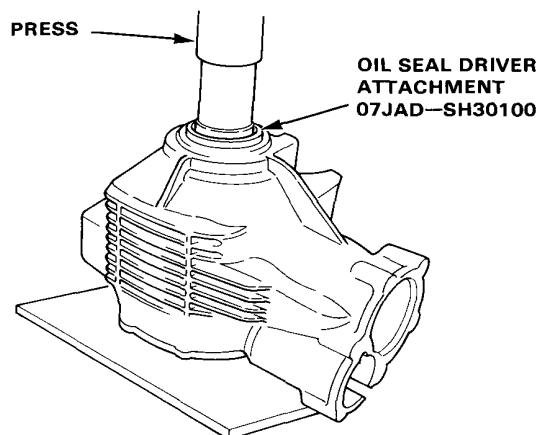


32. Remove the oil seal from the differential carrier.
CAUTION: Do not damage the oil surface.



33. Drive out the taper bearing outer race and 66mm shim using the Oil Seal Driver Attachment.

CAUTION: To prevent damage to the differential carrier, place a shop towel or equivalent material into the differential carrier and remove the parts with the carrier cover mounted on the differential carrier.

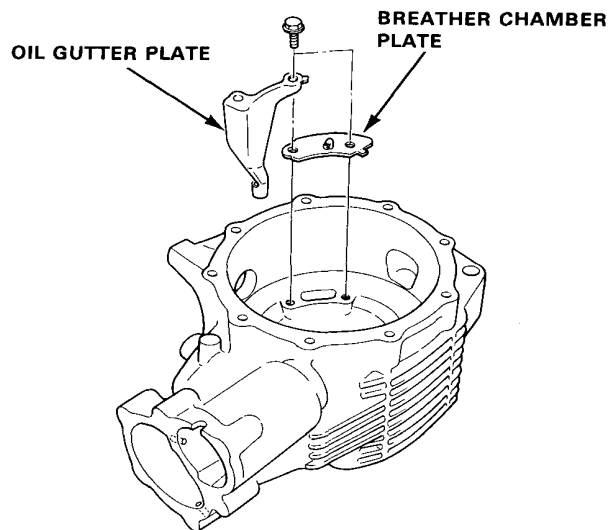


(cont'd)

Differential

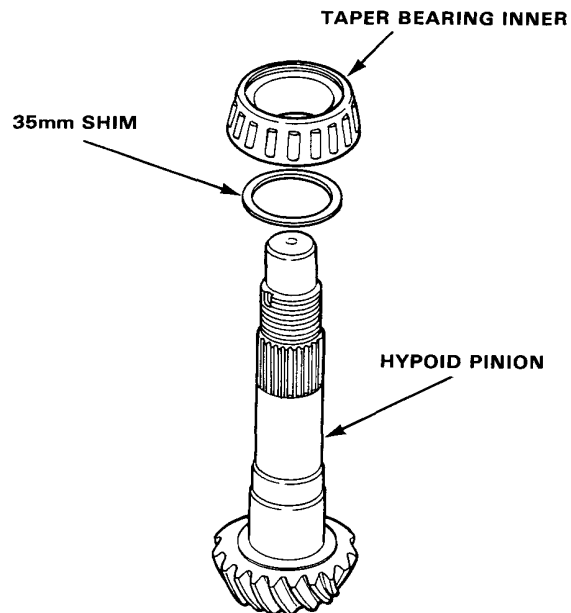
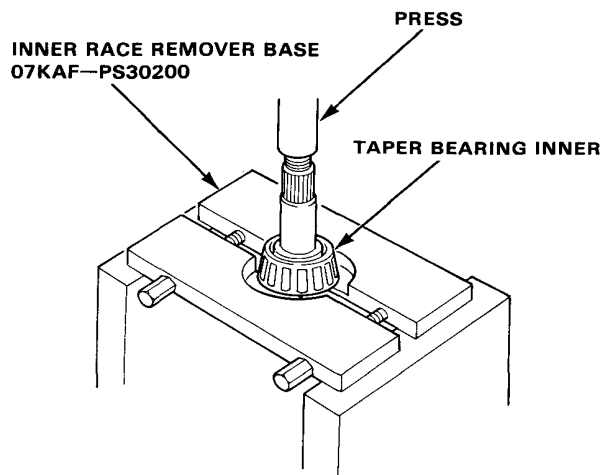
Disassembly (cont'd)

34. Remove the breather chamber plate and oil gutter plate by removing the bolts.



Hypoid Pinion

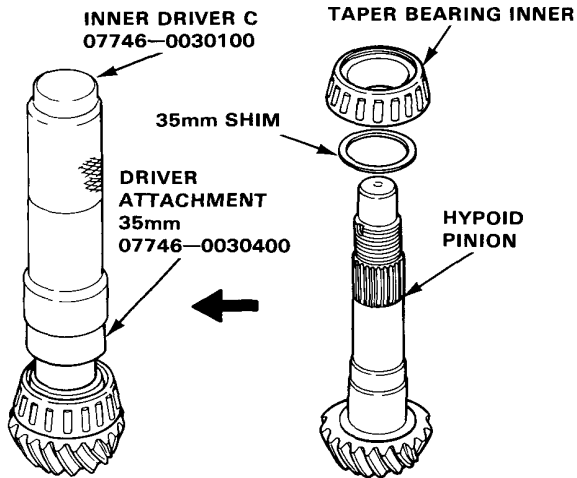
35. Remove the taper bearing inner and 35mm shim using the Inner Race Remover Base.



Reassembly

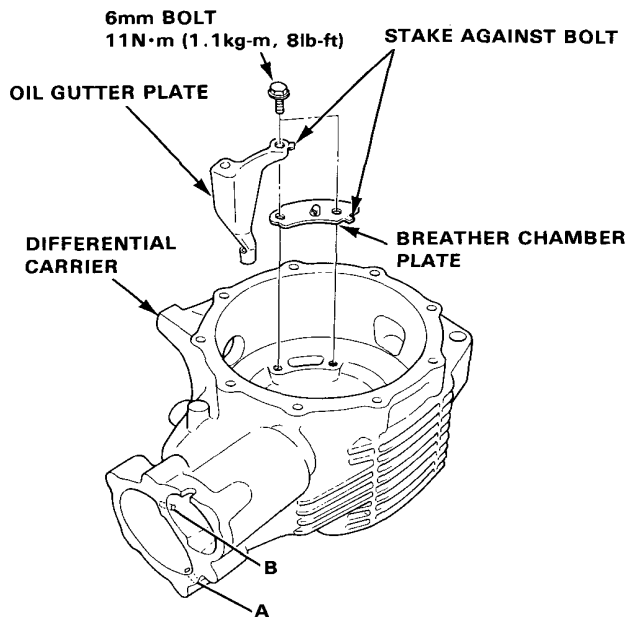
Hypoid Pinion

1. Adjust the hypoid pinion height if necessary (see page 37 of 40).
2. Install the 35mm shim over the hypoid pinion, and press the taper bearing inner into place using the Inner Driver C and 35mm Driver Attachment.



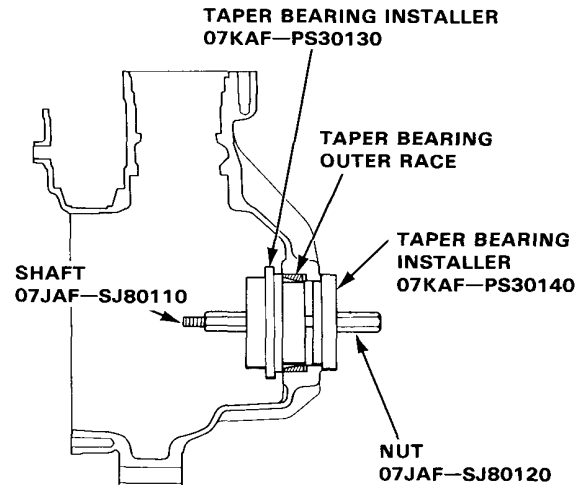
Differential Carrier

3. Check A and B of the differential carrier for clogging. Install the breather chamber plate and oil gutter plate in the differential carrier and stake the ends of the plates against the bolts.

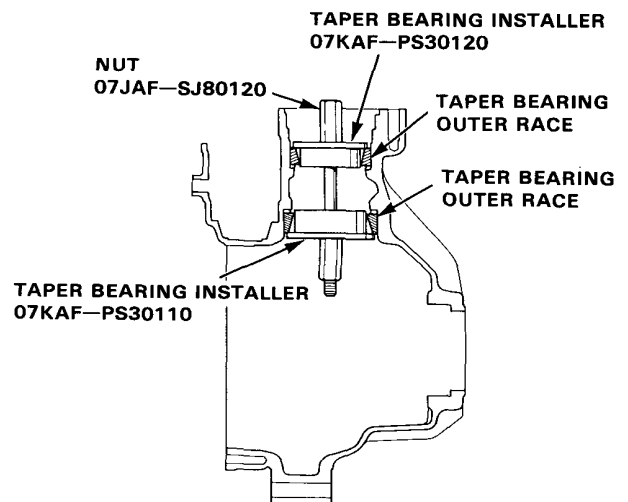


4. Install the 66mm shim. Press the taper bearing outer race into place using the Taper Bearing Installers, Shaft, and Nut.

CAUTION: Do not install the oil seal.



5. Install the 72mm and 62mm outer spacers, and press the taper bearing outer races simultaneously into place using the Taper Bearing Installers and Nut.
- NOTE: Insert the taper bearing outer races lightly before pressing them into place using the special tools.



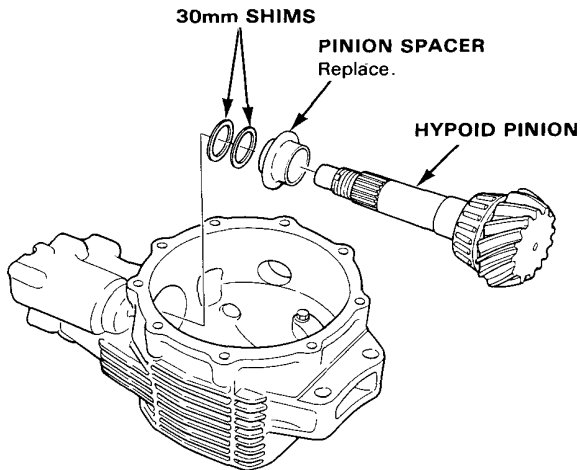
(cont'd)

Differential

Reassembly (cont'd)

6. Install the hypoid pinion assembled in step 2, the pinion spacer, and the two 30mm shims as a set.

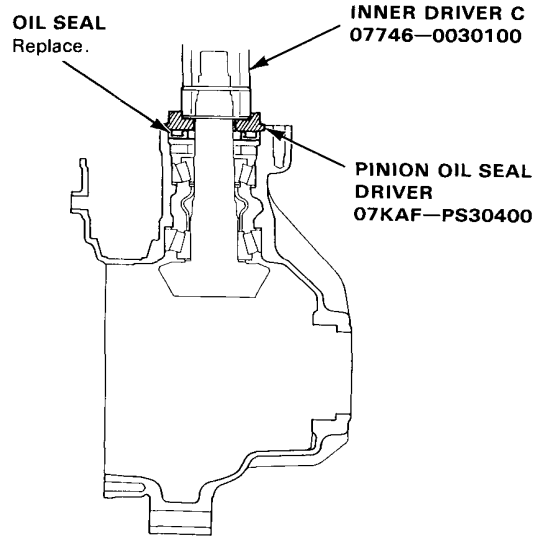
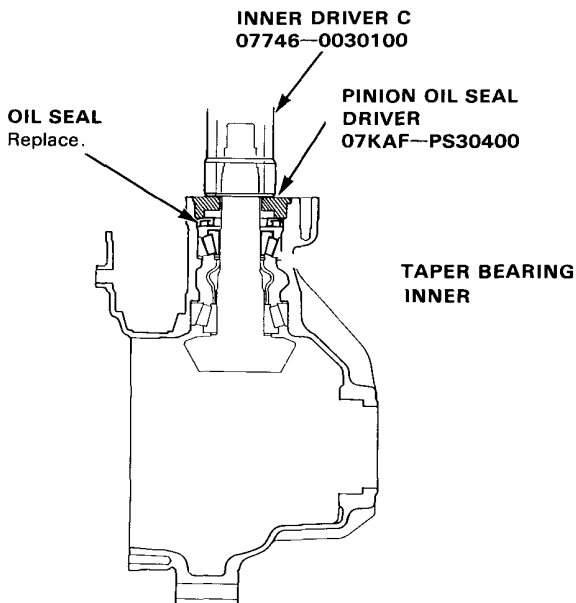
CAUTION: Be sure to replace the pinion spacer with a new one.



7. Install the taper bearing inner, then press the two-liquid separator oil seals into place using the Inner Driver C and Pinion Oil Seal Driver.

CAUTION:

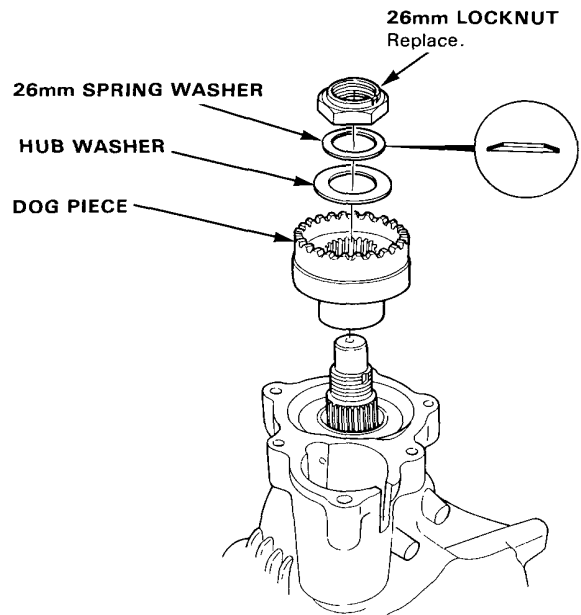
- Drive in the oil seals in the proper position shown in the drawing.
- Note the installation direction of the oil seals.



8. Install the dog piece, hub washer, 26mm spring washer, and the 26mm locknut.

CAUTION:

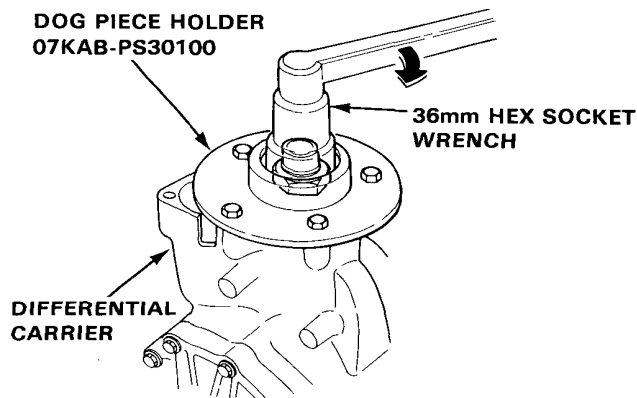
- Be sure to replace the 26mm locknut with a new one.
- Note the installation direction of the 26mm spring washer.



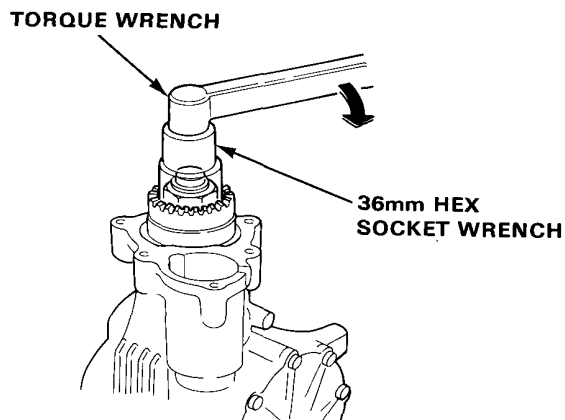
9. Attach the Dog Piece Holder to the differential carrier. Adjust the hypoid pinion preload to 10.0–16.3kg-cm by tightening the 26mm locknut gradually to a torque between 15.0 and 30.0kg-m.

CAUTION:

- If the hypoid pinion preload exceeds 16.3kg-cm when tightening the 26mm locknut to the torque of 15.0kg-m, replace the pinion spacer (do not adjust the preload by loosening the 26mm locknut).
- Replace the spacer if the preload is below the specification even when tightening the 26mm locknut to a torque of more than 30kg-m.
- Before measuring the preload, rotate the hypoid pinion bearing several times to assure proper bearing contact.

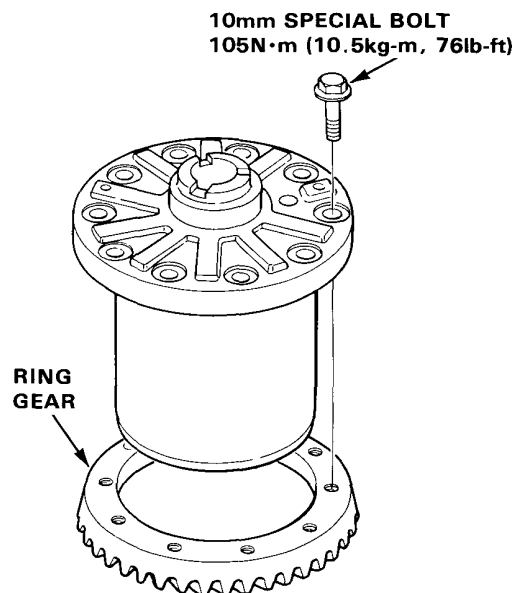


Preload: 1.0–1.63N·m (10.0–16.3kg-cm, 9–14lb-in)

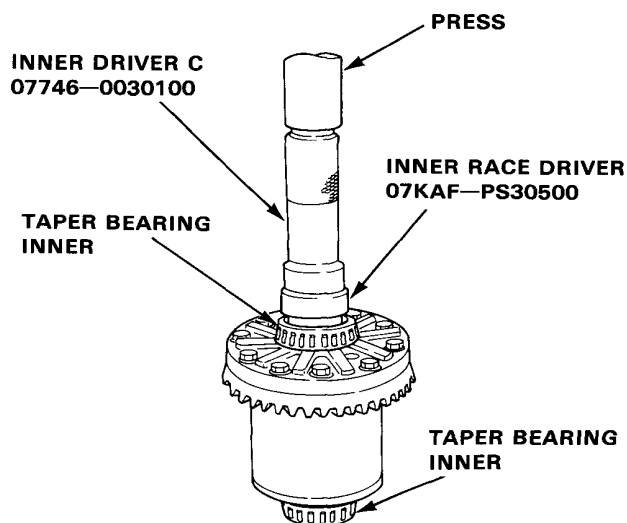


Viscous Differential Assembly

10. Install the ring gear by tightening the bolts in a criss-cross pattern in several steps.



11. Press the taper bearing inner into place using the Inner Driver C and Inner Race Driver.

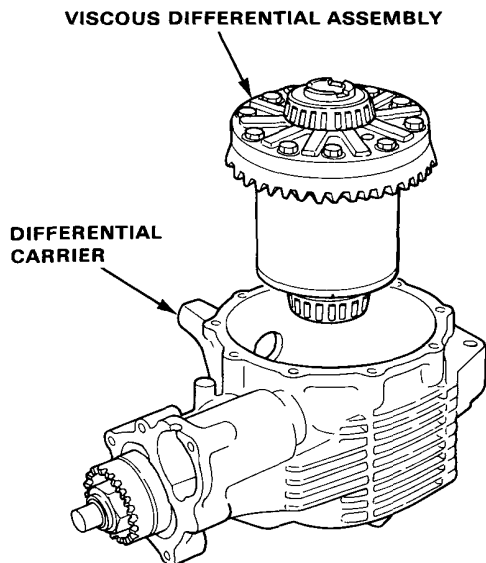


(cont'd)

Differential

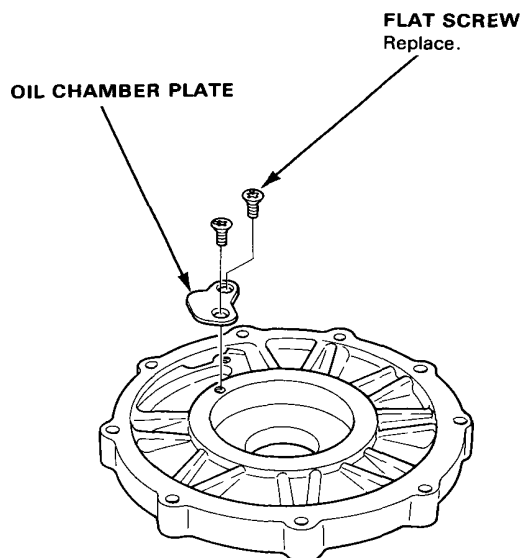
Reassembly (cont'd)

12. Install the viscous differential assembly in the differential carrier.



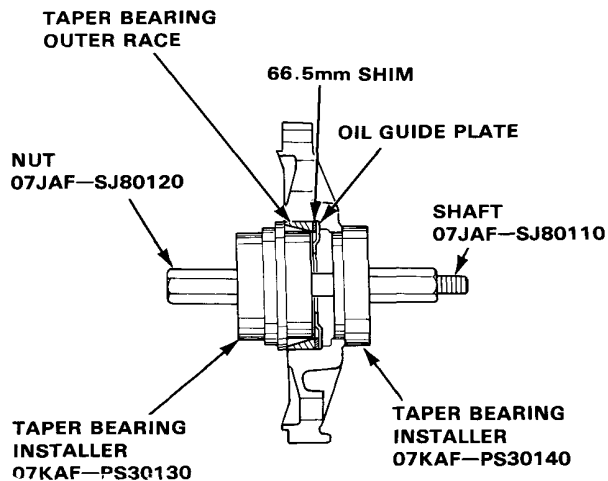
Carrier Cover

13. Install the oil chamber plate and stake it against the flat screws.



14. Install the oil guide plate, 66.5mm shim, and taper bearing outer race using the Taper Bearing Installers, Nut, and Shaft.

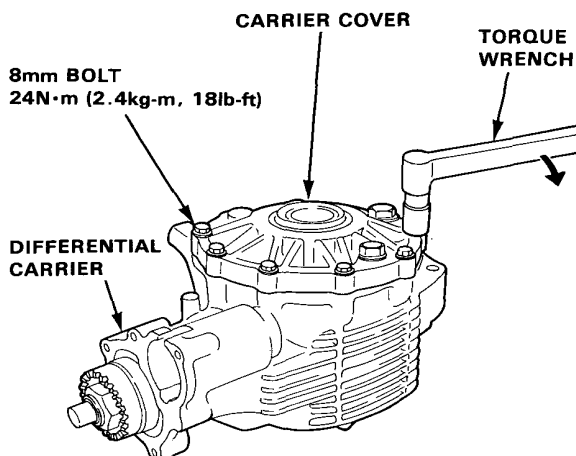
CAUTION: Do not install the oil seal.



15. Install the assembled carrier cover on the differential carrier.

CAUTION:

- Tighten the bolts in a criss-cross pattern in several steps.
- Before installation, clean the mating surfaces of the carrier cover and differential carrier thoroughly and apply Honda Genuine Liquid Gasket (P/N 08718-0001).

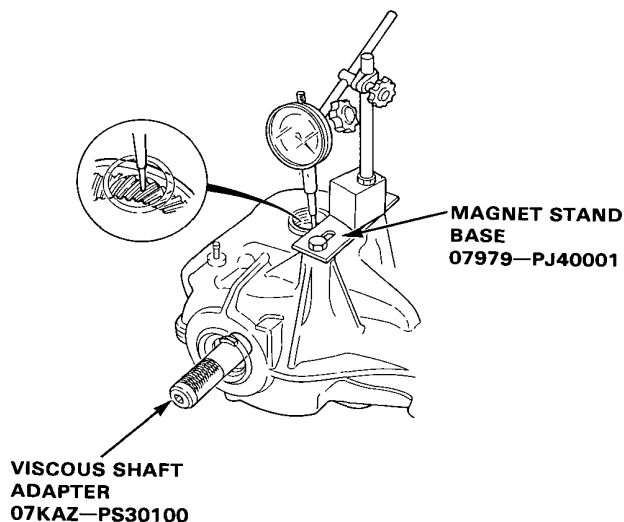


16. Measure the ring gear backlash through the sealing bolt hole.

CAUTION: Measure the backlash at four diagonally opposed points.

Standard: 0.10—0.15mm (0.004—0.006in.)

NOTE: Measure the backlash by holding the dog piece and moving the viscous shaft adapter.

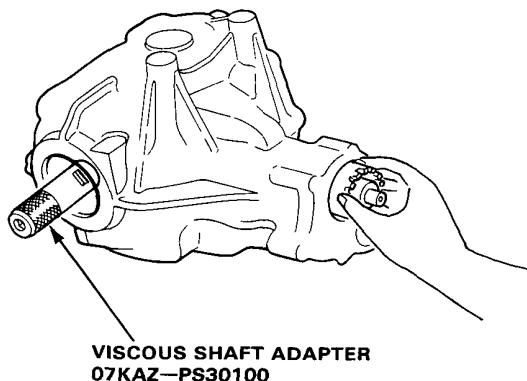


17. If the backlash is out of tolerance, adjust it (see page 38 of 40).

18. Check the tooth contact between the ring gear and hypoid pinion through the sealing bolt hole.

NOTE: Paint the ring gear teeth (on both sides of each tooth) lightly and evenly with Prussian Blue. Applying load to the ring gear, rotate the hypoid pinion one full turn both forward and backward.

CAUTION: Check at three equally spaced points.



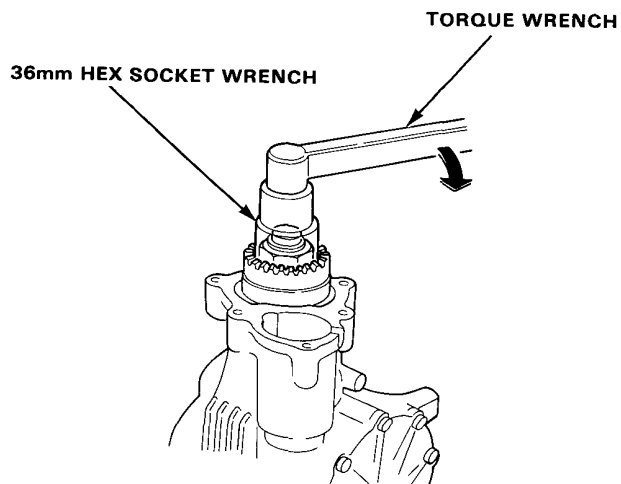
GOOD TOOTH CONTACT PATTERN



19. If the contact pattern shows incorrect contact, adjust it (see page 39 of 40).

20. Measure the total preload.

Preload: 1.11—1.78N·m (11.1—17.8kg-cm,
10—15lb-in)



21. If the total preload is out of tolerance, adjust it by changing the 66mm shim and 66.5mm shim to shims of proper thickness. The backlash must remain within tolerance (see page 38 of 40).

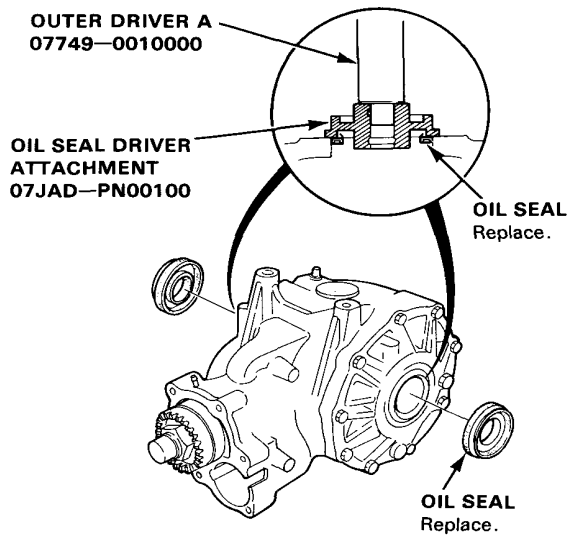
(cont'd)

Differential

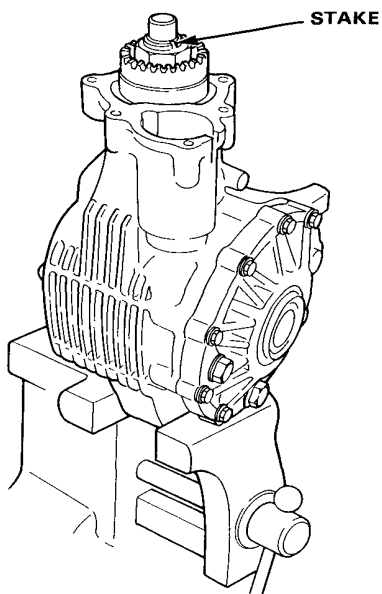
Reassembly (cont'd)

22. Attach the Outer Driver A and Oil Seal Driver Attachment to the differential carrier and carrier cover and press the oil seals into place.

CAUTION: Press-fit the oil seals into the correct position shown in the drawing.



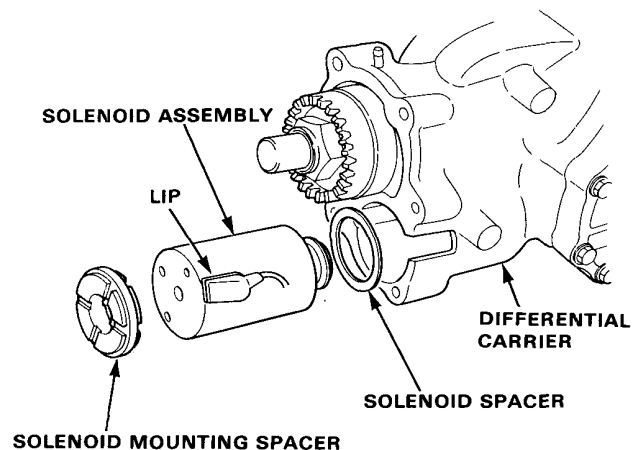
23. Stake the 26mm locknut.



24. Check the solenoid assembly for operation (see page 39 of 40).

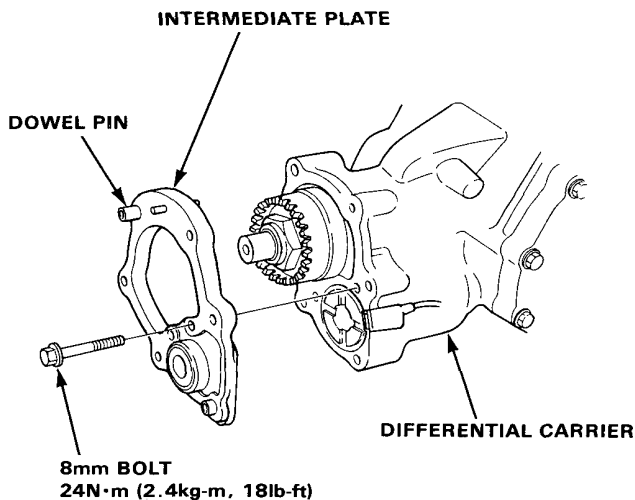
25. Install the solenoid spacer, solenoid assembly, and the solenoid mounting spacer in the differential carrier.

CAUTION: Coat the entire circumference of the lip with the sealant (Cemedain 366E or equivalent).



Intermediate Plate

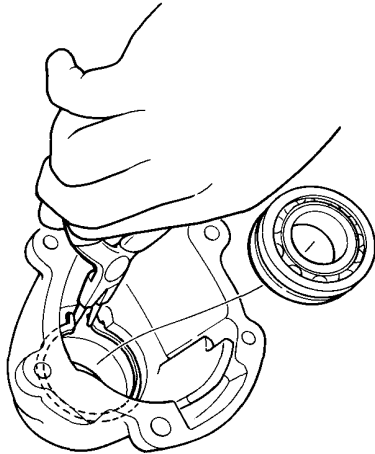
26. Install the intermediate plate on the differential carrier.
- NOTE:** Before installation, clean the mating surfaces of the intermediate plate and differential carrier thoroughly, and apply Honda Genuine Liquid Gasket (P/N 08718-0001).



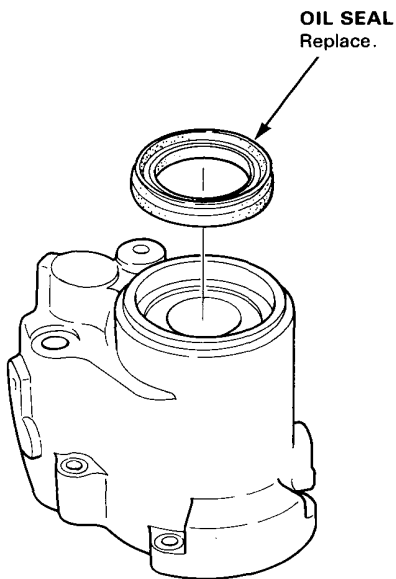
Clutch Housing

27. Expand the snap ring and install the ball bearing.

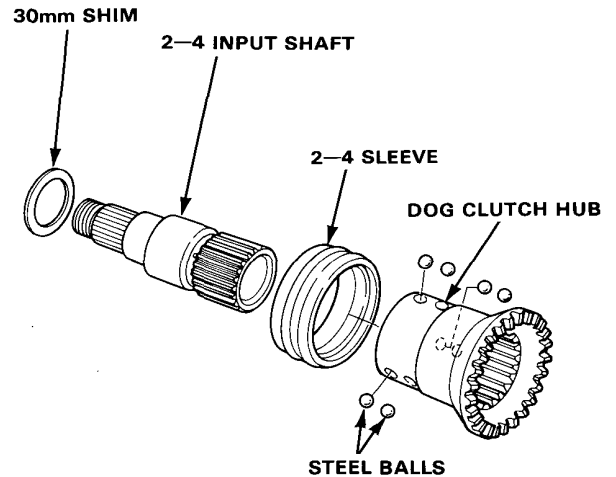
CAUTION: Make sure that the snap ring is set securely in the groove of the ball bearing.



28. Press the oil seal into place using the pinion Oil Seal Driver (07KAF—PS30400).

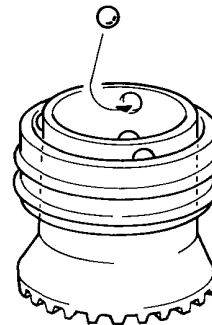


29. Assemble the 2—4 input shaft, steel balls, dog clutch hub, 2—4 sleeve, and the 30mm shim.



1) Install the 2—4 sleeve over the dog clutch hub and insert the steel balls into the dog clutch hub.

CAUTION: To prevent the steel balls from dropping out of the dog clutch hub, multi-purpose grease may be applied to the holes in the hub. Be sure not to apply more grease than to the half of each hole.



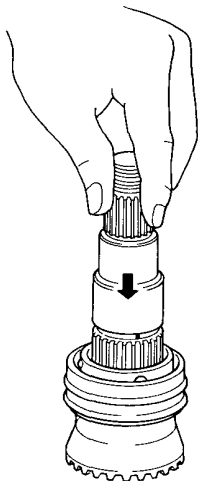
(cont'd)

Differential

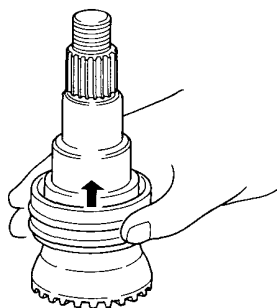
Reassembly (cont'd)

- 2) Insert the 2-4 input shaft into the dog clutch hub until the shaft contacts the steel balls.

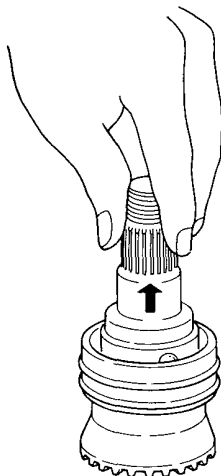
CAUTION: Be sure that the alignment mark on the 2-4 input shaft aligns with the alignment mark on the dog clutch hub.



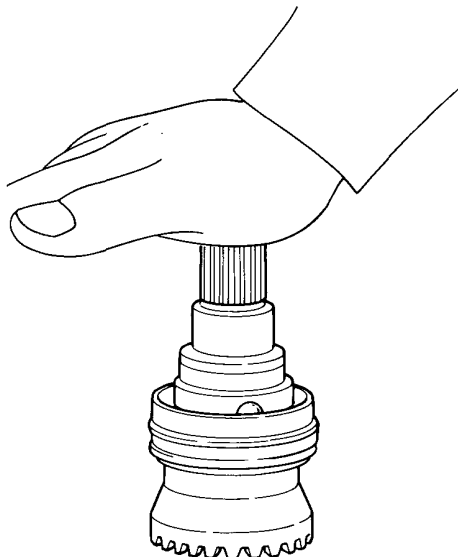
- 3) Pull up the 2-4 sleeve. The 2-4 input shaft should drop.



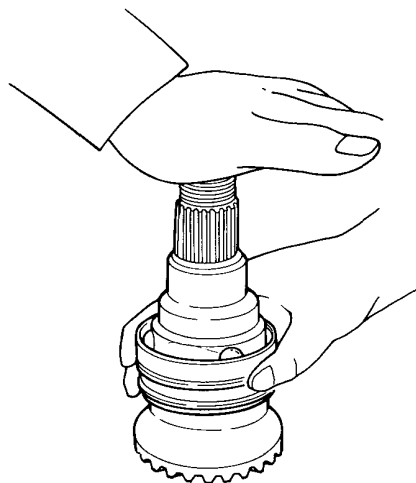
- 4) Pull up the 2-4 input shaft.



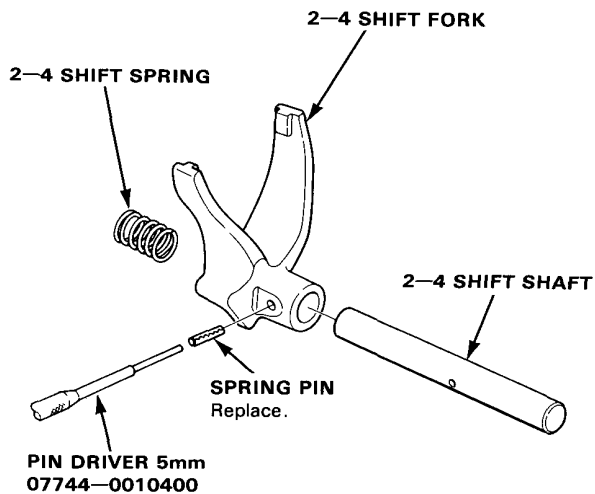
- 5) Set the 2-4 sleeve in the 4WD position. Push the 2-4 input shaft firmly with the palm and make sure that it does not move.



- 6) Pushing the 2-4 input shaft with the palm, make sure that the 2-4 sleeve can be lifted by little force.

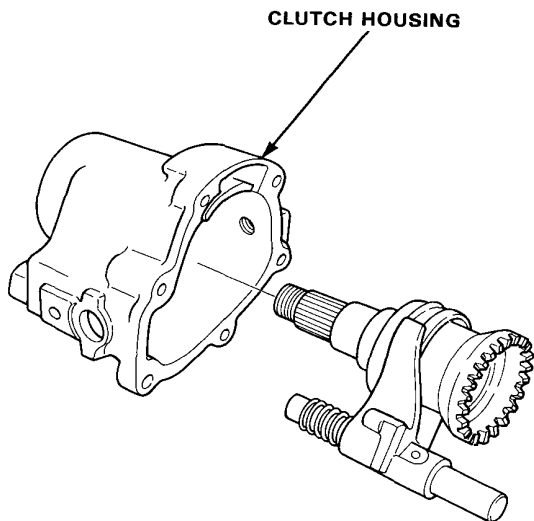


30. Assemble the 2-4 shift shaft, 2-4 shift fork, 2-4 shift spring, and the 2-4 shift spacer.



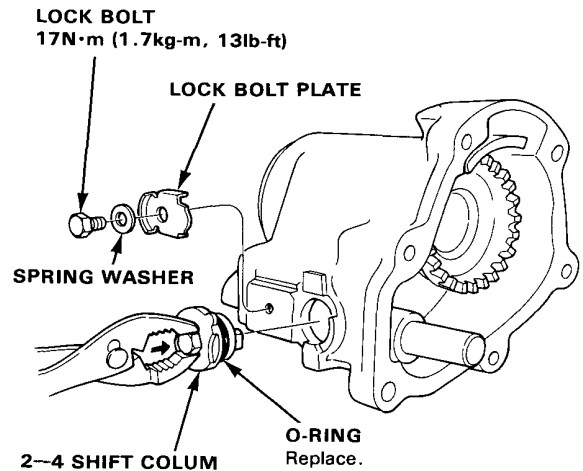
31. Assemble the 2-4 input shaft and dog clutch hub assembled in step 29 with the 2-4 shift fork and 2-4 shift shaft assembled in step 30, then install the assembly in the clutch housing.

CAUTION: Look if the 2-4 shift spring is on the 2-4 shift spacer.



32. Install the 2-4 shift column in the clutch housing. Check that it shifts smoothly from "4" to "2" and vice versa. Install the lock bolt washer and tighten the lock bolt.

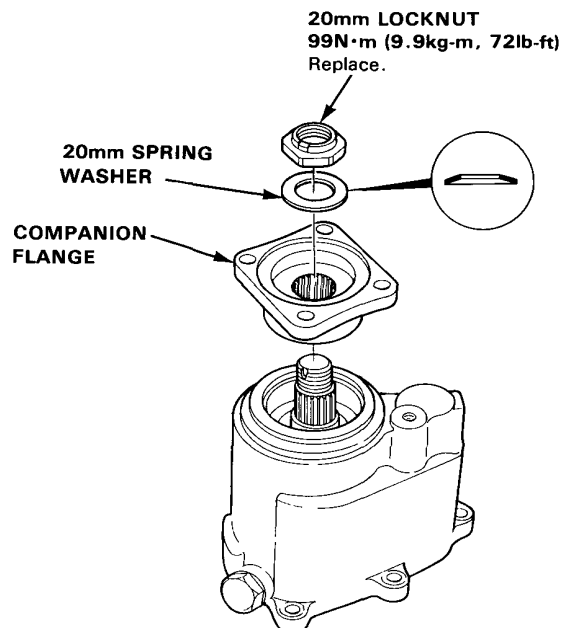
NOTE: Push the 2-4 shift column into the clutch housing using a pair of pliers or equivalent tool.



33. Install the companion flange, 20mm spring washer, and the 20mm locknut.

CAUTION:

- Replace the 20mm locknut with a new one.
- Note the installation direction of the 20mm spring washer.

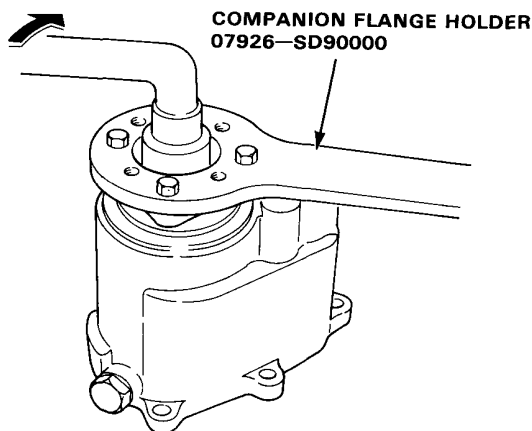


(cont'd)

Differential

Reassembly (cont'd)

34. Attach the Companion Flange Holder to the companion flange and tighten the 20mm locknut.

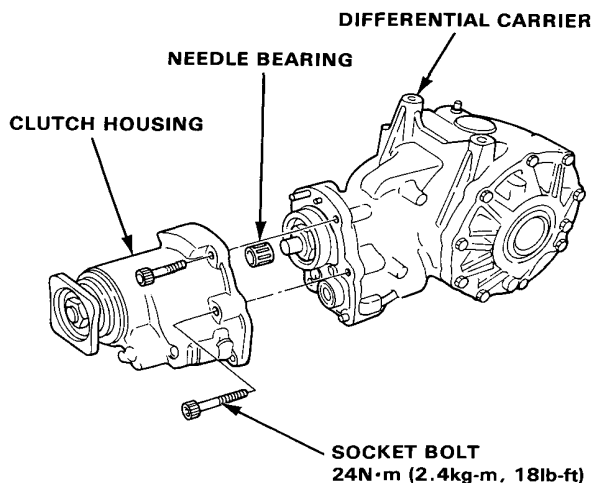


35. Measure the dog clutch height and adjust it if necessary (see page 36 of 40).

36. Install the assembled clutch housing on the differential carrier.

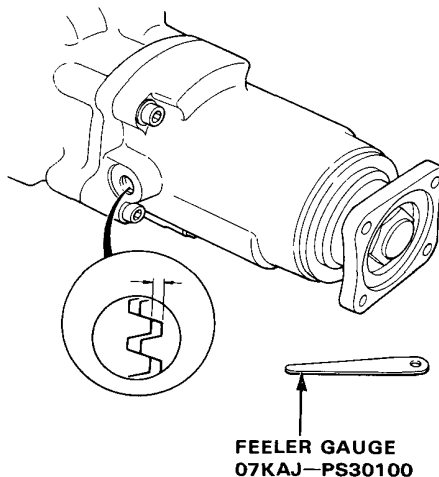
CAUTION:

- Tighten the bolts in a criss-cross pattern in several steps.
- Before assembly, clean the mating surfaces of the clutch housing and intermediate plate thoroughly and apply Honda Genuine Lequid Gasket (P/N 08718-0001).

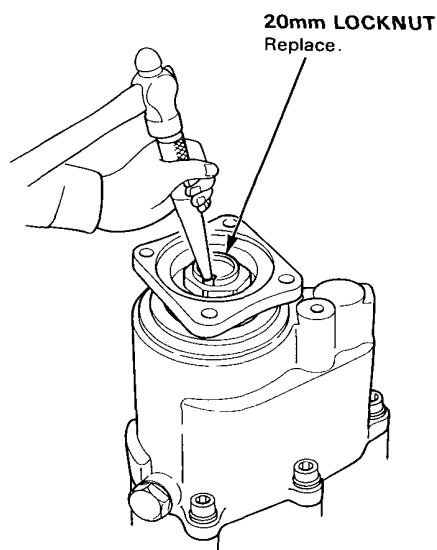


37. Using the feeler gauge, measure the dog clutch clearance through the 14 mm filler-bolt hole in the clutch housing.

CAUTION: Measure at four diagonally opposed points. Standard: 0.05mm (0.002in.) feeler gauge can be inserted, while 0.25mm (0.01in.) cannot.

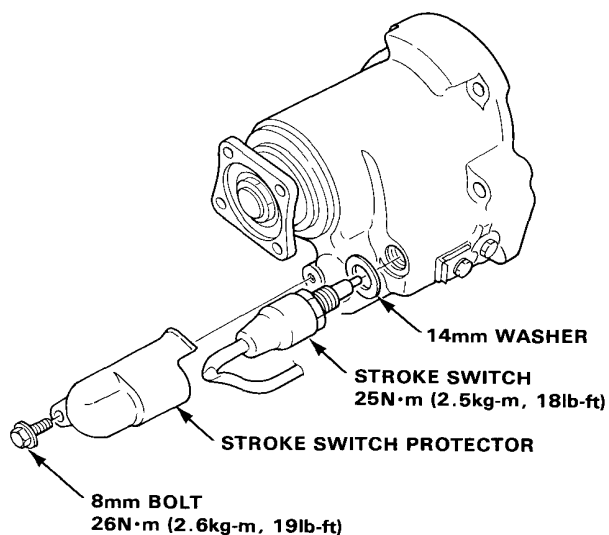


38. Stake the 20mm locknut.

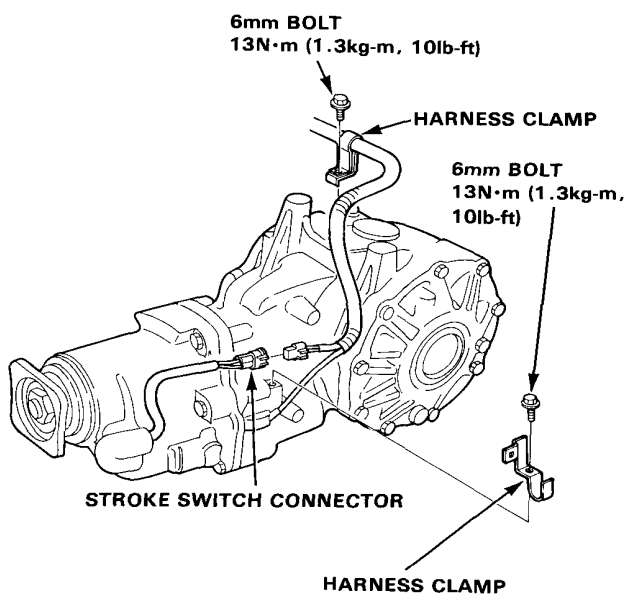


39. Check the stroke switch for operation (see page 40 of 40).

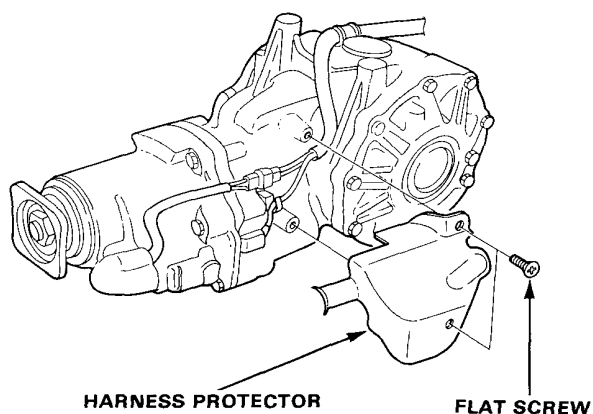
40. Install the stroke switch and stroke switch protector.



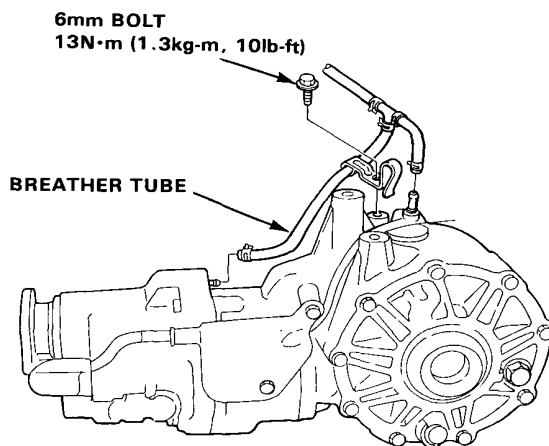
41. Install the harness clamp and stroke switch connector.



42. Install the harness protector.



43. Install the breather tube.



44. With the solenoid mounted on the differential assembly, check the solenoid for operation (see page 40 of 40).

45. After installation, test-drive and make sure that the ALB warning light does not come on when the ALB is ON.

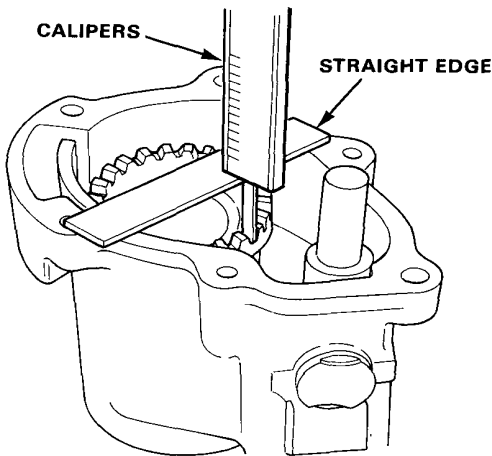
Dog Clutch Clearance

Adjustment

Dog Clutch Hub Side

1. Place a straight edge on the clutch housing end as shown and measure the dog clutch hub depth using the calipers. Measure the depth at many points.

Dog clutch hub depth is calculated by subtracting the thickness of the straight edge from the calipers reading.

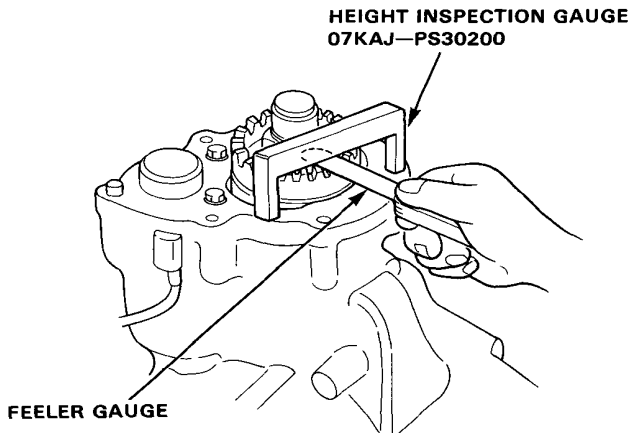


Dog Piece Side

2. With the intermediate plate mounted on the differential carrier, attach the Height Inspection Gauge to the differential carrier. Measure the clearance to the dog piece ridge at many points using a feeler gauge.

CAUTION: Make sure that the dog piece inclination is within 0.1mm (0.004in.).

Clearance to the dog piece ridge can be calculated by subtracting the feeler gauge reading from the dimension of 19.8mm (0.78in.), which is the inner height of the Height Inspection Gauge.



3. Calculate the dog clutch clearance from the results obtained in steps 1 and 2.

Dog clutch clearance can be calculated by subtracting the clearance to the dog piece ridge from the dog clutch hub depth.

4. Select the appropriate 30mm shim using the table below.

CAUTION: Be sure that the calculation results obtained at all measuring points are within the tolerance.

Clearance: 0.05—0.25mm (0.002—0.01in.)

	PART NUMBER	THICKNESS
A	42380-PS3-010	1.00 mm (0.0394 in.)
B	42381-PS3-010	1.20 mm (0.0472 in.)
C	42382-PS3-010	1.40 mm (0.0551 in.)
D	42383-PS3-010	1.60 mm (0.0630 in.)
E	42384-PS3-010	1.80 mm (0.0709 in.)
F	42385-PS3-010	2.00 mm (0.0787 in.)
G	42386-PS3-010	1.50 mm (0.0591 in.)
H	42387-PS3-000	1.10 mm (0.0433 in.)
I	42388-PS3-000	1.30 mm (0.0512 in.)
J	42389-PS3-000	1.70 mm (0.0670 in.)
K	42390-PS3-000	1.90 mm (0.0748 in.)

5. Using a feeler gauge, check the dog clutch clearance through the 14mm filler bolt hole in the clutch housing.

CAUTION: Check the clearance at four diagonally opposed points.

Standard: 0.05mm (0.002in.) feeler gauge can be inserted, while 0.25mm (0.01in.) cannot.

Hypoid Pinion Height

Adjustment

Adjustment Is Required

- When the hypoid pinion and ring gear are replaced. Calculate the 35mm shim thickness and select the appropriate shim.

NOTE: Replace the hypoid pinion and gear as a set.

X: Calculated thickness of the replacement shim

A: Number on top of the existing hypoid pinion

B: Number on top of the replacement hypoid pinion

C: Thickness of the existing shim

$$X = \frac{A}{100} - \frac{B}{100} + C$$

NOTE: Number on top of the hypoid pinion is shown in

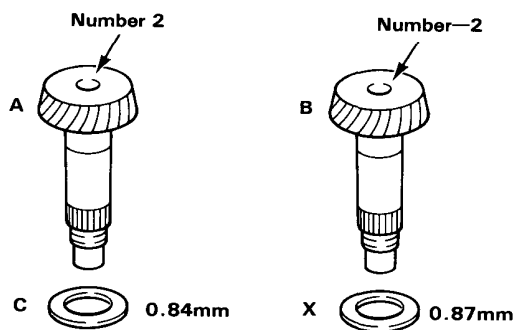
$$\frac{1}{100} \text{ mm.}$$

Example 1) $X = 0.02 - (-0.02) + 0.84$

$$X = 0.04 + 0.84$$

$$X = 0.88$$

Use the 35mm shim which is 0.87mm in thickness.

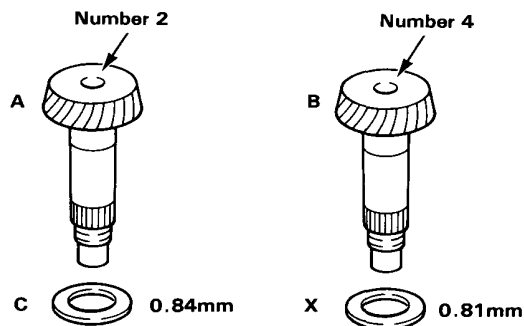


Example 2) $X = 0.02 - 0.04 + 0.84$

$$X = -0.02 + 0.84$$

$$X = 0.82$$

Use the 35mm shim which is 0.81mm in thickness.



- When the hypoid pinion bearing is replaced. Measure the thicknesses of the new and the existing bearing and calculate the difference in thickness between the two bearings.

Select the shim whose thickness is equal to the calculated difference in thickness between the two bearings.

For selecting the appropriate shim use the table below.

35 mm SHIM

	PART NUMBER	THICKNESS
A	41361-PS3-000	0.72 mm (0.0283 in.)
B	41362-PS3-000	0.75 mm (0.0295 in.)
C	41363-PS3-000	0.78 mm (0.0307 in.)
D	41364-PS3-000	0.81 mm (0.0319 in.)
E	41365-PS3-000	0.84 mm (0.0331 in.)
F	41366-PS3-000	0.87 mm (0.0343 in.)
G	41367-PS3-000	0.90 mm (0.0354 in.)
H	41368-PS3-000	0.93 mm (0.0366 in.)
I	41369-PS3-000	0.96 mm (0.0378 in.)
J	41370-PS3-000	0.99 mm (0.0390 in.)
K	41371-PS3-000	1.02 mm (0.0402 in.)
L	41372-PS3-000	1.05 mm (0.0413 in.)
M	41373-PS3-000	1.08 mm (0.0425 in.)
N	41374-PS3-000	1.11 mm (0.0437 in.)
O	41375-PS3-000	1.14 mm (0.0449 in.)

Adjustment Is Not Required

- When you replace the differential carrier, ring gear, hypoid pinion, and the 35mm shim as a set.
- When the viscous assembly is replaced.

Ring Gear Backlash

Adjustment

- Adjust the ring gear backlash by selecting the proper 66mm shim for the differential carrier and 66.5mm shim for the carrier cover using the tables shown.

CAUTION:

- If the backlash is excessive, move the ring gear toward the hypoid pinion.
- If the backlash is too small, move the ring gear away from the hypoid pinion.
- Do not change the total thickness of the shims.

- After adjustment, measure the ring gear backlash through the 34mm sealing bolt hole.

CAUTION: Measure at four diagonally opposed points.
Standard: 0.10–0.15mm (0.004–0.006in.)

66 mm SHIM

	PART NUMBER	THICKNESS
A	41411-PS3-000	1.40 mm (0.0551 in.)
B	41412-PS3-000	1.43 mm (0.0563 in.)
C	41413-PS3-000	1.46 mm (0.0575 in.)
D	41414-PS3-000	1.49 mm (0.0587 in.)
E	41415-PS3-000	1.52 mm (0.0598 in.)
F	41416-PS3-000	1.55 mm (0.0610 in.)
G	41417-PS3-000	1.58 mm (0.0622 in.)
H	41418-PS3-000	1.61 mm (0.0634 in.)
I	41418-PS3-000	1.64 mm (0.0646 in.)
J	41420-PS3-000	1.67 mm (0.0657 in.)
K	41421-PS3-000	1.70 mm (0.0669 in.)
L	41422-PS3-000	1.73 mm (0.0681 in.)
M	41423-PS3-000	1.76 mm (0.0693 in.)
N	41424-PS3-000	1.79 mm (0.0705 in.)
O	41425-PS3-000	1.82 mm (0.0717 in.)
P	41426-PS3-000	1.85 mm (0.0728 in.)
Q	41427-PS3-000	1.88 mm (0.0740 in.)
R	41428-PS3-000	1.91 mm (0.0752 in.)
S	41429-PS3-000	1.94 mm (0.0764 in.)
T	41430-PS3-000	1.97 mm (0.0776 in.)
U	41431-PS3-000	0.60 mm (0.0236 in.)

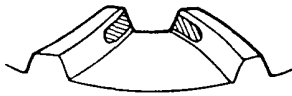
66.5 mm SHIM

	PART NUMBER	THICKNESS
A	41449-PS3-010	1.40 mm (0.0551 in.)
B	41450-PS3-010	1.43 mm (0.0563 in.)
C	41451-PS3-010	1.46 mm (0.0575 in.)
D	41452-PS3-010	1.49 mm (0.0587 in.)
E	41453-PS3-010	1.52 mm (0.0598 in.)
F	41454-PS3-010	1.55 mm (0.0610 in.)
G	41455-PS3-100	1.58 mm (0.0622 in.)
H	41456-PS3-010	1.61 mm (0.0634 in.)
I	41457-PS3-010	1.64 mm (0.0646 in.)
J	41458-PS3-010	1.67 mm (0.0657 in.)
K	41459-PS3-010	1.70 mm (0.0669 in.)
L	41460-PS3-010	1.73 mm (0.0681 in.)
M	41461-PS3-010	1.76 mm (0.0693 in.)
N	41462-PS3-010	1.79 mm (0.0705 in.)
O	41463-PS3-010	1.82 mm (0.0717 in.)
P	41464-PS3-010	1.85 mm (0.0728 in.)
Q	41465-PS3-010	1.88 mm (0.0740 in.)
R	41466-PS3-010	1.91 mm (0.0752 in.)
S	41467-PS3-010	1.94 mm (0.0764 in.)
T	41468-PS3-010	1.97 mm (0.0776 in.)
U	41469-PS3-010	0.60 mm (0.0236 in.)

Ring Gear & Hypoid Pinion Tooth Contact

Adjustment

1. TOE CONTACT



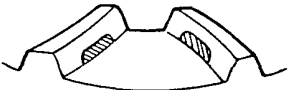
- Use a thinner 35mm shim to move the drive pinion away from the ring gear.

2. HEEL CONTACT



- Use a thicker 35mm shim to move the drive pinion toward the ring gear.

3. FLANK CONTACT



- Adjust within the range of the standard backlash (move the ring gear away from the drive pinion).
- If adjustment cannot be made within the range of the standard backlash, adjust in the same way as TOE CONTACT.

4. FACE CONTACT



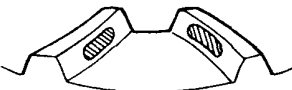
- Adjust in the range of the standard backlash (move the ring gear toward the drive pinion).
- If adjustment cannot be made in the range of the standard backlash, adjust in the same way as HEEL CONTACT.

- After adjusting check the tooth contact between the ring gear and hypoid pinion through the 34mm sealing bolt hole.

NOTE: Paint the ring gear teeth (on both sides of each tooth) lightly and evenly with Prussian Blue. Applying load to the ring gear, rotate the companion flange one full turn both forward and backward.

CAUTION: Check at three equally spaced points.

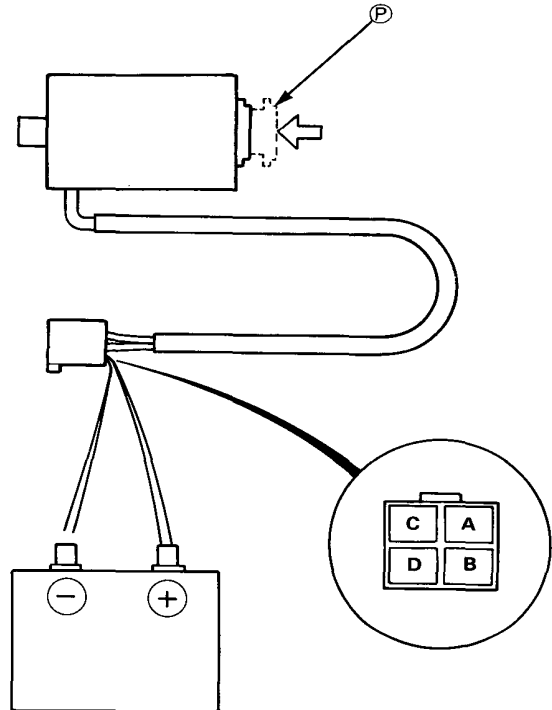
6. CORRECT TOOTH CONTACT



Solenoid Assembly

Inspection

- Connect the A and C terminals of the solenoid assembly 4-P connector to the battery positive (+) terminal.
NOTE: Take care not to pinch your finger during inspection.



- Connect the B terminal of the 4-P connector to the battery negative (-) terminal. Make sure that "P" is drawn in quickly and does not return when its end is pushed firmly with a finger.

NOTE: Align the end of "P" with the end of the solenoid.

CAUTION: Do not connect to the battery for more than 5 seconds. The solenoid could get damaged.

- Connect the D terminal of the 4-P connector to the battery negative (-) terminal. Make sure that "P" is drawn in quickly and does not return when its end is pushed firmly with a finger.

NOTE: Align the end of "P" with the end of the solenoid.

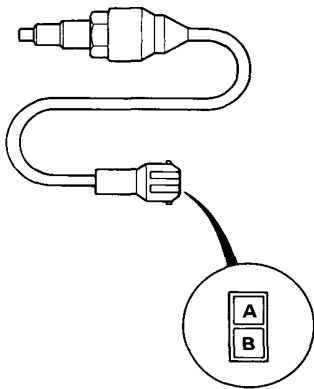
CAUTION: Do not connect to the battery for more than 5 seconds. The solenoid could get damaged.

- If "P" is not drawn in quickly in the above steps 2 and 3, check for continuity between the A and B terminals, and between the C and D terminals of the 4-P connector.

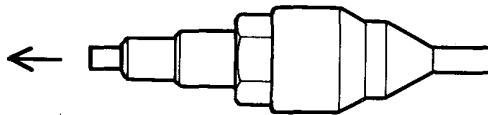
Stroke Switch

Inspection

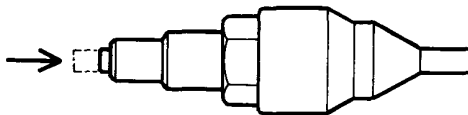
Check for continuity between the terminals of the stroke switch connector.



1. There must be continuity between the A and B terminals (with 4WD engaged).



2. There must be no continuity between A and B terminals (with 4WD disengaged).

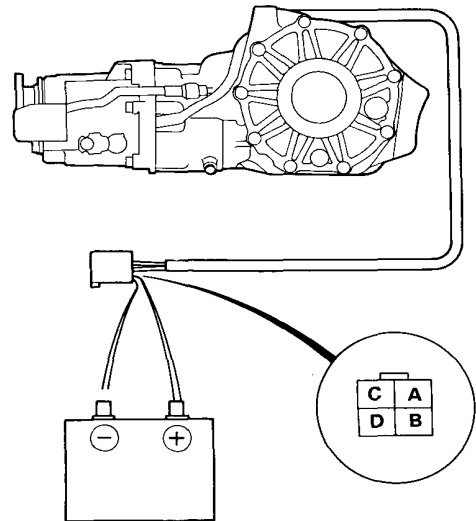


3. The stroke switch is faulty if there are any abnormalities at the above checks 1 and 2.

Solenoid-On-Differential Assembly

Inspection

1. Connect the A and C terminals of the solenoid assembly 4-P connector to the battery positive (+) terminal.
NOTE: Make sure that the 2-4 shift column is at "4".



2. Rotate the companion flange by hand. You must feel resistance.
3. Connect the B and D terminals of the 4-P connector simultaneously to the battery negative (-) terminal, then immediately disconnect the B terminal.

CAUTION: Do not connect the B terminal of the 4-P connector to the battery for more than 5 seconds and the D terminal for more than 5 minutes. The solenoid could get damaged.

4. Disconnect the 4-P connector D terminal from the battery.
- 1) Check if the solenoid sound can be heard.
- 2) Rotate the companion flange by hand and make sure that it rotates smoothly and lightly.
4. Disconnect the 4-P connector D terminal from the battery.
- 1) Check if the solenoid sound can be heard.
- 2) Rotate the companion flange by hand. You must feel resistance.
5. If the solenoid sound cannot be heard and resistance is felt while rotating the companion flange by hand in step 3, check for continuity between the A and B terminals and between the C and D terminals of the 4-P connector. If there is continuity, check each part in the clutch housing for operation.