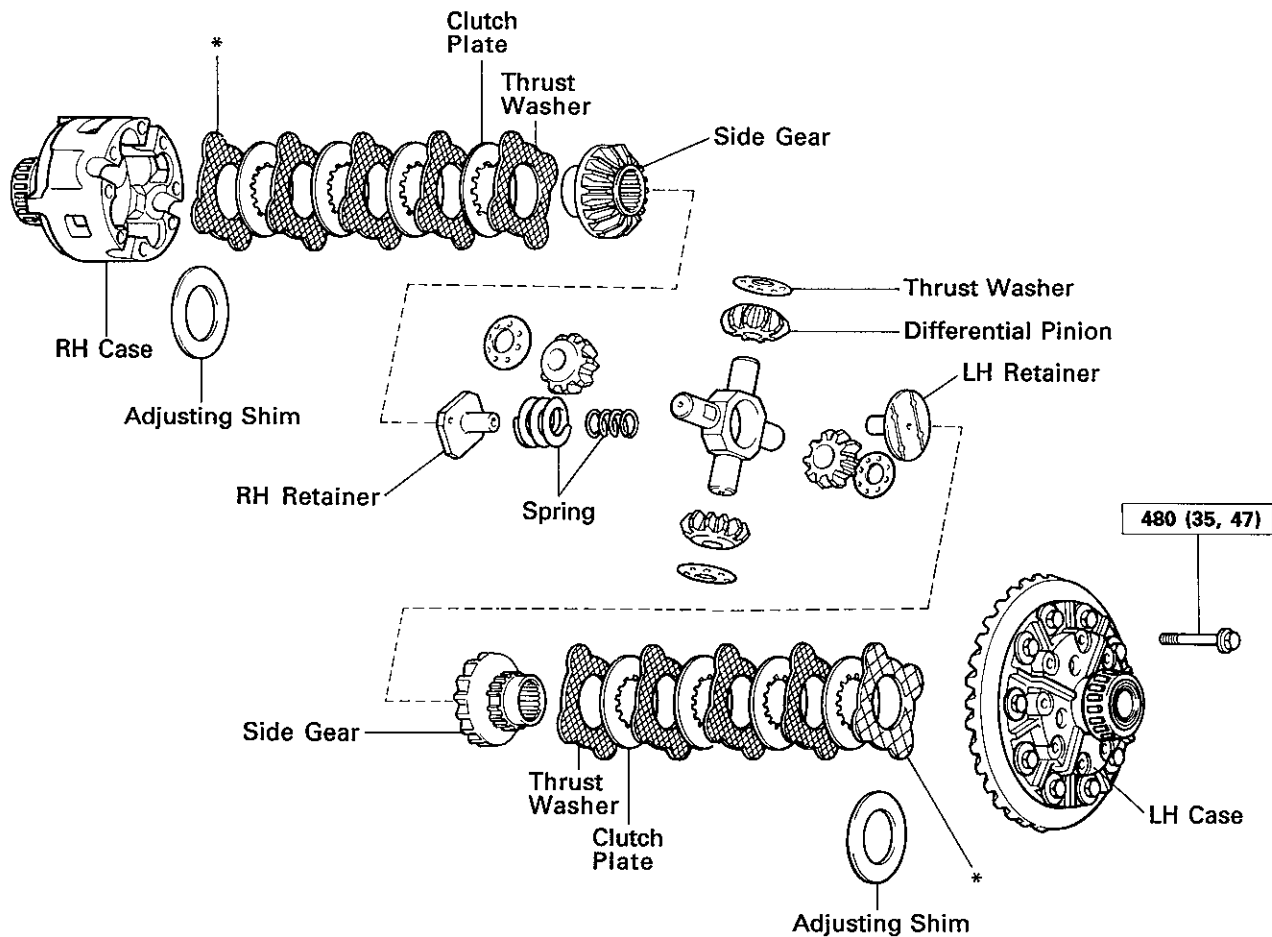


Differential Case (Limited Slip Differential)

COMPONENTS

HINT: * These thrust washers (thicker than the others) are used only by the manufacturer to adjust the pinion gear backlash and are not available as spare parts. For after-sales service, when replacing the thrust washers, replace them with a set of ten of the thinner thrust washers and adjust the pinion gear backlash using separately available adjusting shims.

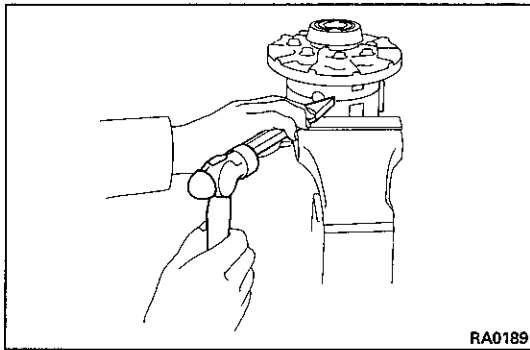


kg-cm (ft-lb, N·m) : Specified torque

SA0413

REMOVAL OF DIFFERENTIAL CASE

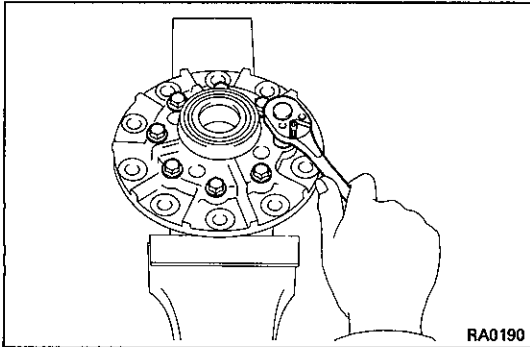
1. REMOVE DIFFERENTIAL (See page SA-125)
2. REMOVE DIFFERENTIAL CASE FROM CARRIER (See page SA-130)

DISASSEMBLY OF LIMITED SLIP DIFFERENTIAL**1. PUT MATCHMARKS ON RH AND LH CASE**

RA0189

2. REMOVE CASE BOLTS AND LH CASE WITH SIDE GEAR

Remove the bolts uniformly and a little at a time.

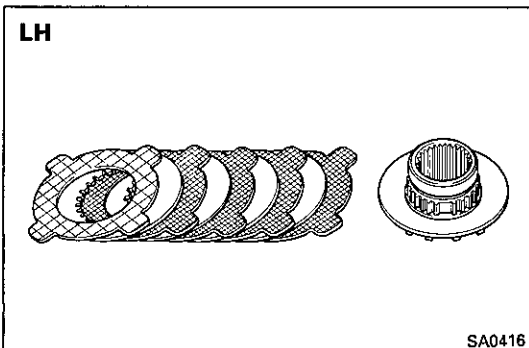


RA0190

3. REMOVE FOLLOWING PARTS FROM LH CASE:

- (a) Side gear
- (b) Side gear thrust washer (5 pieces)
- (c) Clutch plate (4 pieces)

HINT: Keep the disassembled parts in order.

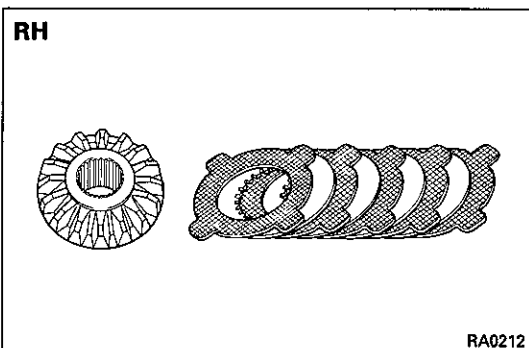


SA0416

4. REMOVE FOLLOWING PARTS FROM RH CASE:

- (a) Spring LH retainer and two spring
- (b) Spider with pinion gear
- (c) Spring RH retainer
- (d) Side gear
- (e) Side gear thrust washer (5 pieces)
- (f) Clutch plate (4 pieces)

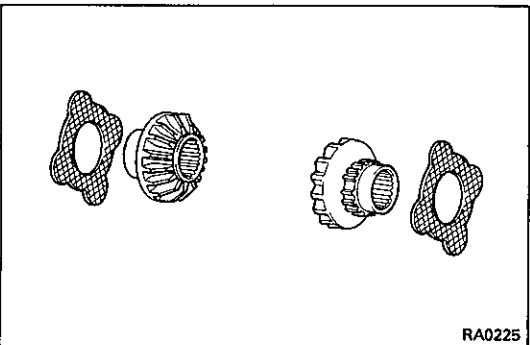
HINT: Keep the disassembled parts in order.



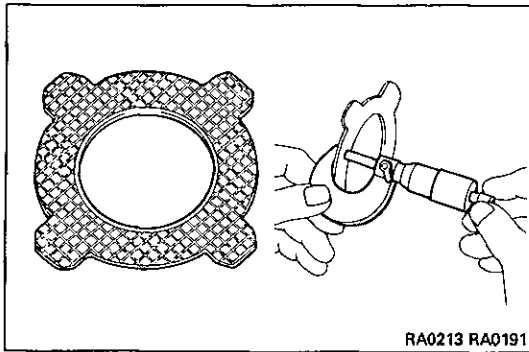
RA0212

INSPECTION OF COMPONENTS**1. REPLACE PARTS THAT ARE DAMAGED OR WORN**

HINT: If replacing the side gear, also replace the thrust washer making contact with it.



RA0225



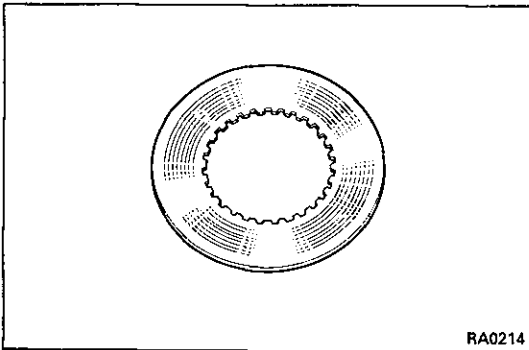
2. INSPECT THRUST WASHERS FOR WEAR OR DAMAGE

Check that the contact surface of the thrust washer is even and that no bare metal is showing.

(For reference) Thickness limit: 1.74 mm (0.0685 in.)

If necessary replace the thrust washers

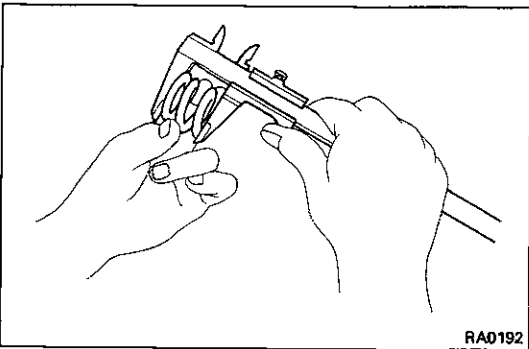
HINT: If replacing the thrust washer also replace the clutch plate making contact with it.



3. INSPECT CLUTCH PLATE FOR WEAR OR DAMAGE

Check see that there is no abnormal wear.

If necessary replace the clutch plate.

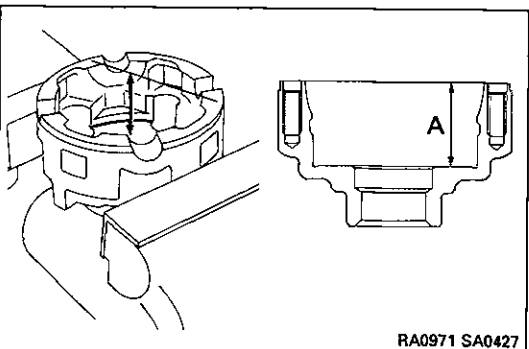


4. INSPECT SPRING FREE LENGTH

Measure the free length of the spring.

Limit: Large spring 31.3 mm (1.232 in.)

Small spring 31.3 mm (1.232 in.)



SELECT THE ADJUSTING SHIM

1. MEASURE THE RH CASE

Measure the RH case as shown in the figure.

"A" = Case dimension.

2. MEASURE THE SIDE GEAR, THRUST WASHER AND CLUTCH PLATE

(a) Assemble the side gear, thrust washers and clutch plates on the side gear.

HINT: Do not assemble the adjusting shims.

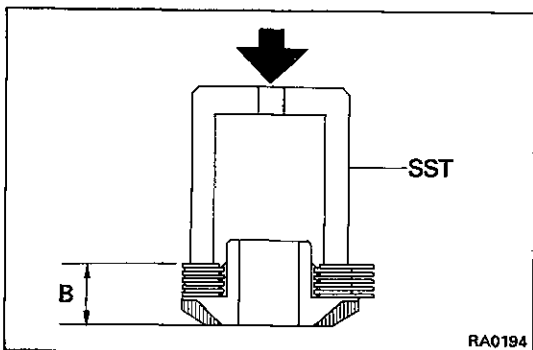
(b) Using SST to press down the thrust washers and clutch plates with about 10 kg (22 lb) of pressure, measure dimension "B".

SST 09726-35010

TOTAL SHIM THICKNESS C:

"C" = "A" - "B" - 16.15 mm (0.6358 in.)

(c) Referring to the selection table on the next page select the proper adjusting shims.



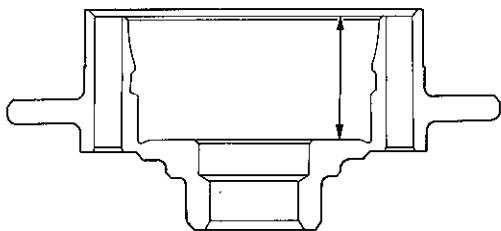
Adjusting shim thickness mm (in.)

Mark	Thickness	Mark	Thickness
A	0.15 (0.0059)	D	0.30 (0.0118)
B	0.20 (0.0079)	E	0.35 (0.0138)
C	0.25 (0.0098)		

Adjusting shim selection table mm (in.)

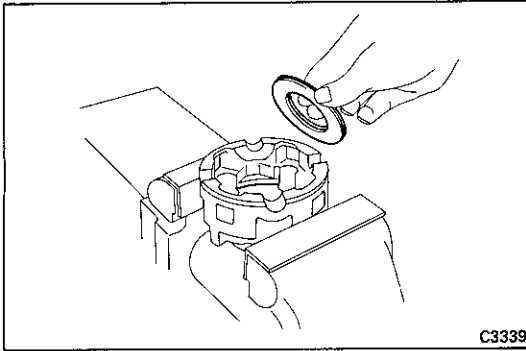
B Dimension	A Dimension							
	45.00 .00	.01	.02	.03	.04	.05	.06	.07
	(1.7717)	(1.7720)	(1.7724)	(1.7728)	(1.7732)	(1.7736)	(1.7740)	(1.7744)
28.10 (1.1063)							C + C + D	
.12 (1.1071)								
.14 (1.1079)						C + C + C		
.16 (1.1087)								
.18 (1.1094)					E + E			
.20 (1.1102)								
.22 (1.1110)					D + E			
.24 (1.1118)								
.26 (1.1126)								
.28 (1.1134)					D + D			
.30 (1.1142)								
.32 (1.1150)					C + D			
.34 (1.1157)								
.36 (1.1165)								
.38 (1.1173)					C + C			
.40 (1.1181)								
.42 (1.1189)					B + C			
.44 (1.1197)								
.46 (1.1205)								
.48 (1.1213)					B + B			
.50 (1.1220)								
.52 (1.1228)					E			
.54 (1.1236)								
.56 (1.1244)								
.58 (1.1252)					D			
.60 (1.1260)								
.62 (1.1268)					C			
.64 (1.1276)								
.66 (1.1283)			B					
.68 (1.1291)	A							
.70 (1.1299)								

LH Case



SA0428

3. SELECT THE ADJUSTING SHIMS FOR THE LH CASE IN THE SAME PROCEDURE



ASSEMBLY OF DIFFERENTIAL CASE

HINT: Apply LSD oil to each component.

1. ASSEMBLE RH CASE

(a) If necessary, install the adjusting shims.

(b) Install the thrust washers and clutch plates as shown in the figure.

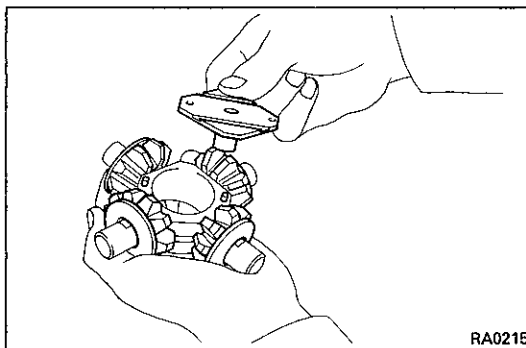
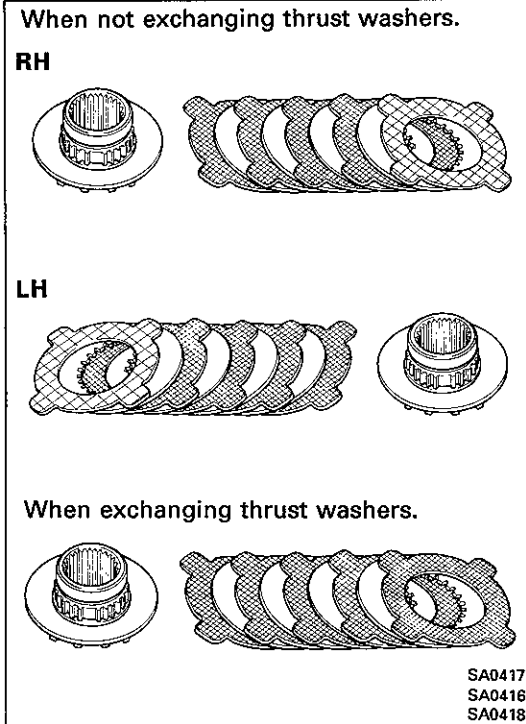
HINT: If the thrust washers are not exchanged, a thrust washer thicker than the other thrust washers can be installed on each side gear.

Install the thicker thrust washers in the outermost position with the thrust washer side with less oil grooves facing toward the differential case.

When exchanging the thrust washers, all thrust washers are the same so the installation order and direction of each thrust washer is not specified.

(c) Install the side gear.

2. ASSEMBLE THE LH CASE IN THE SAME PROCEDURE



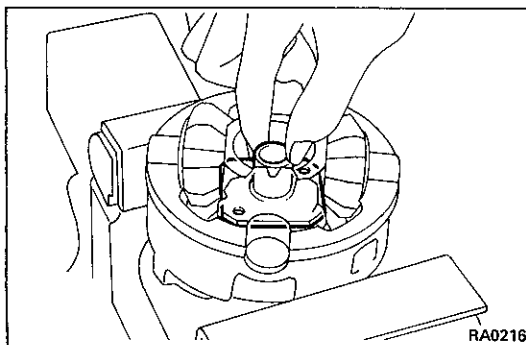
3. INSTALL PINION GEARS, WASHERS AND RH RETAINER TO SPIDER

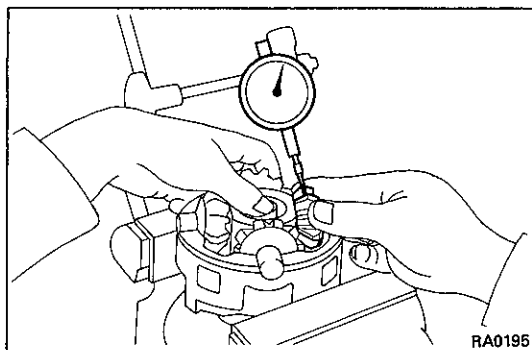
(a) Install the pinion gears and washers.

(b) Align the RH retainer holes with the spider knock pins and install the RH retainer.

4. INSTALL SPIDER TO RH CASE

Check that the RH retainer is securely on the spider pin.





5. MEASURE PINION GEAR BACKLASH

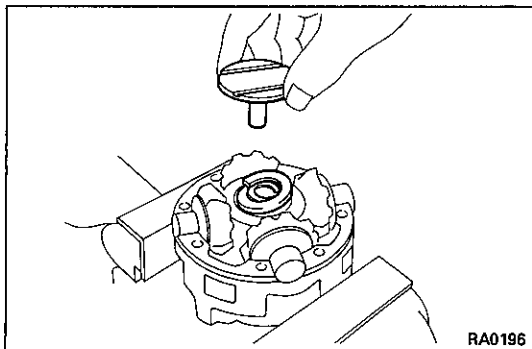
- (a) Secure the side gear and measure the backlash while pushing in the spring retainer.

Backlash: 0.05 – 0.20 mm (0.0020 – 0.0079 in.)

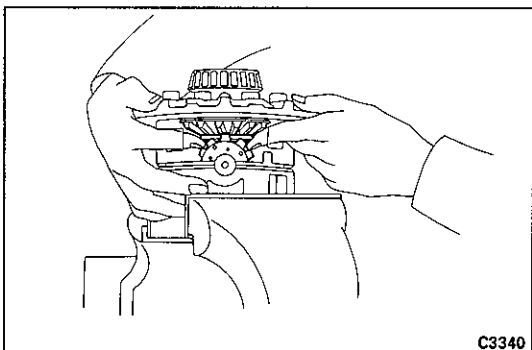
HINT: Measure at all four locations.

If the backlash is not within specification, select an adjusting shim.

6. MEASURE THE LH CASE IN THE SAME MANNER



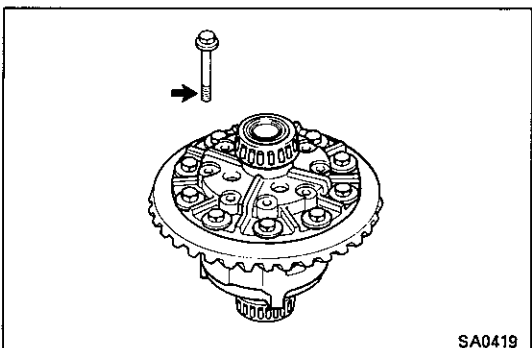
7. INSTALL SPRINGS AND LH RETAINER



8. ASSEMBLE RH AND LH CASES

Align the matchmarks and assemble the RH and LH cases.

HINT: Be careful not to drop the side gear, and check the pinion and side gear alignment.

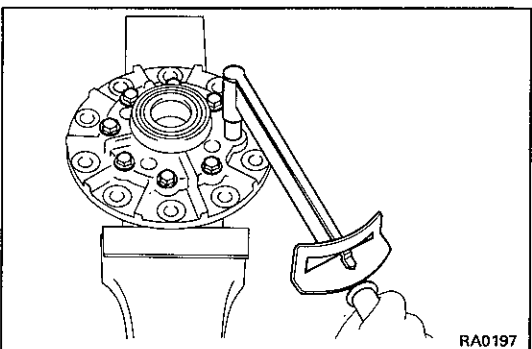


9. INSTALL CASE SET BOLTS

- (a) Coat the bolts with gear oil.

- (b) Tighten the bolts uniformly and a little at a time.

Torque: 480 kg-cm (35 ft-lb, 47 N·m)



INSTALLATION OF DIFFERENTIAL

1. **INSTALL DIFFERENTIAL CASE IN CARRIER**
(See page SA-134)
2. **INSTALL DIFFERENTIAL**
(See page SA-125)