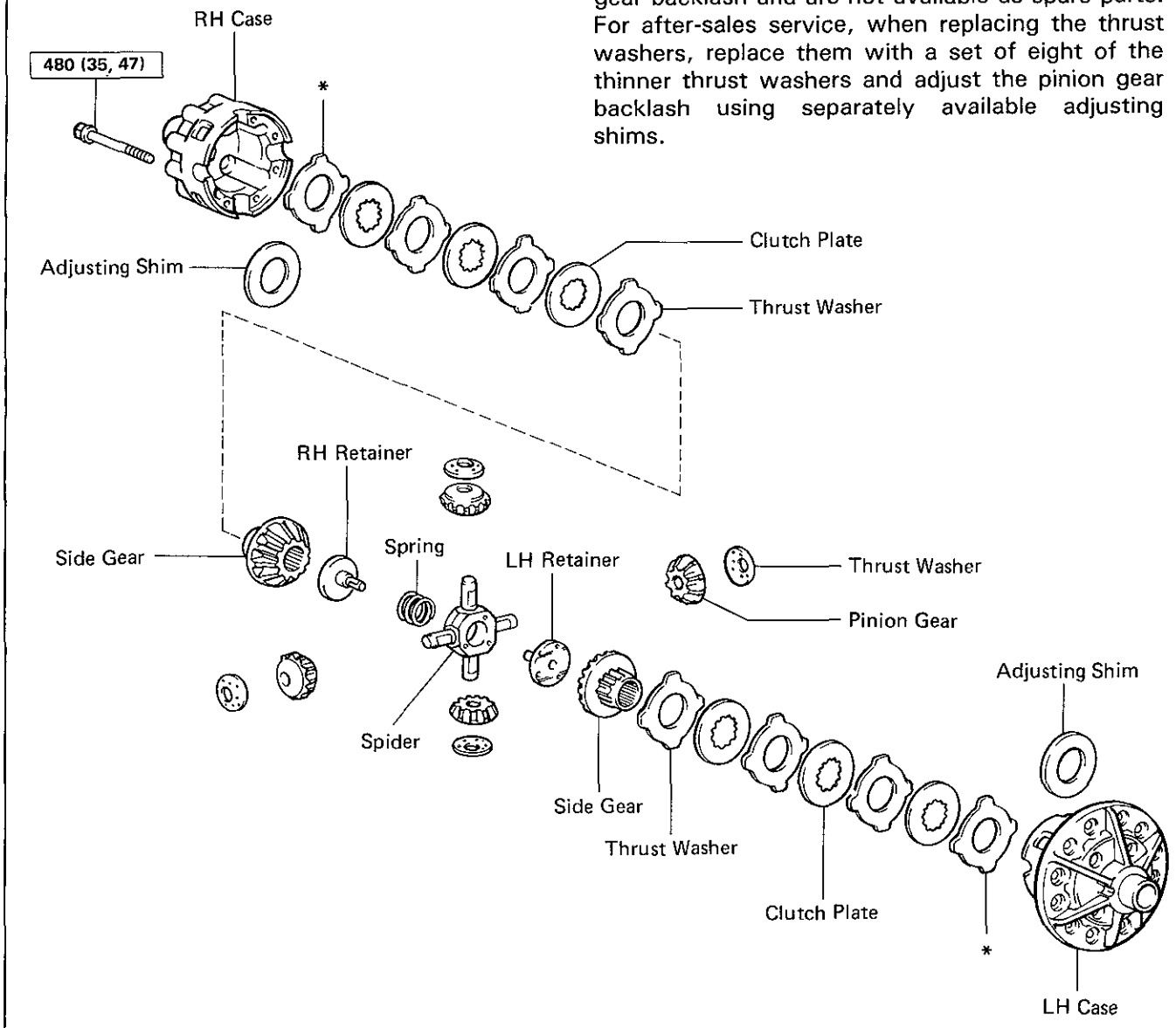
Differential Case (Limited Slip Differential)

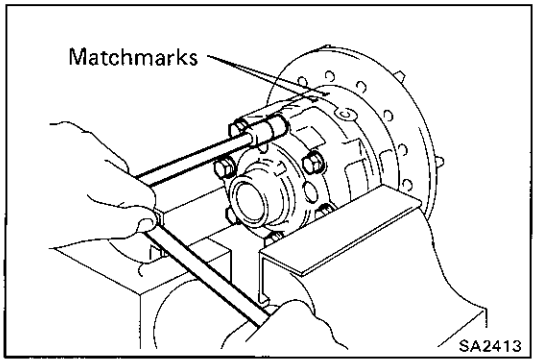
COMPONENTS

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 eight of the thinner thrust washers and adjust the pinion gear backlash using separately available adjusting shims.



REMOVAL OF DIFFERENTIAL CASE

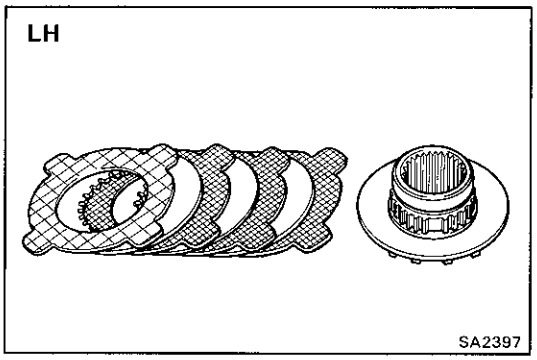
1. **REMOVE DIFFERENTIAL (See page SA-142)**
2. **REMOVE DIFFERENTIAL CASE FROM CARRIER (See page SA-146)**



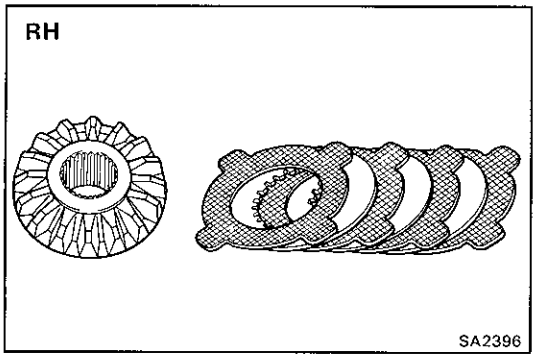
DISASSEMBLY OF DIFFERENTIAL CASE

(See page SA-174)

1. **DISASSEMBLE DIFFERENTIAL CASE**
   (a) Place matchmarks on the LH and RH cases.
   (b) Remove the eight bolts uniformly, a little at a time.
   (c) Using a plastic hammer, separate the LH and RH cases.



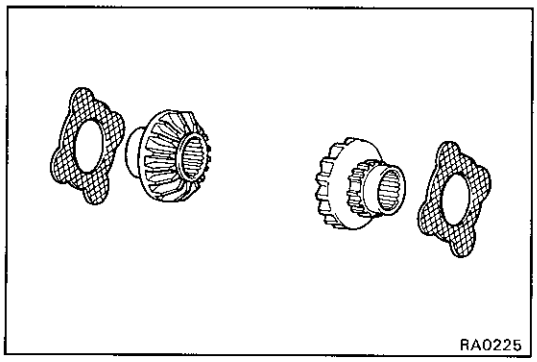
2. **REMOVE FOLLOWING PARTS FROM CASE:**
   HINT: Keep the disassembled parts in order.
   (a) Remove the following parts from the LH case:
      (1) Side gear
      (2) Side gear thrust washer (4 pieces)
      (3) Clutch plate (3 pieces)

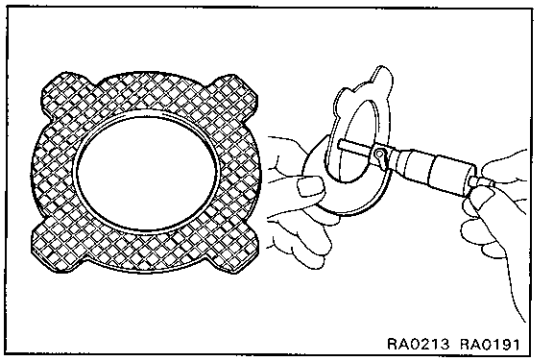


   (b) Remove the following parts from the RH case:
      (1) Spring LH retainer and two springs
      (2) Spider with pinion gear
      (3) Spring RH retainer
      (4) Side gear
      (5) Side gear thrust washer (4 pieces)
      (6) Clutch plate (3 pieces)

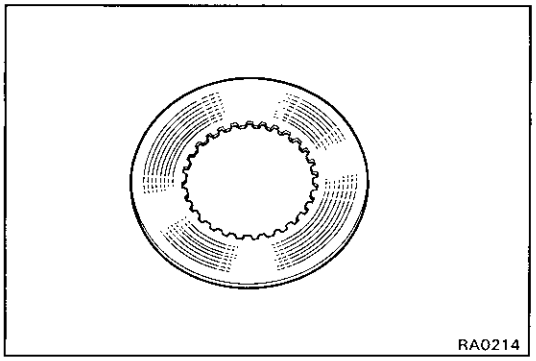
INSPECTION OF COMPONENTS

1. **REPLACE PARTS THAT ARE DAMAGED OR WORN**
   HINT: If replacing the side gear, also replace the thrust washer contacting it.





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:
   1.97 — 2.05 mm (0.0776 — 0.0807 in.)
   If necessary, replace the thrust washers
   HINT: If replacing the thrust washer, also replace the clutch plate contacting it.

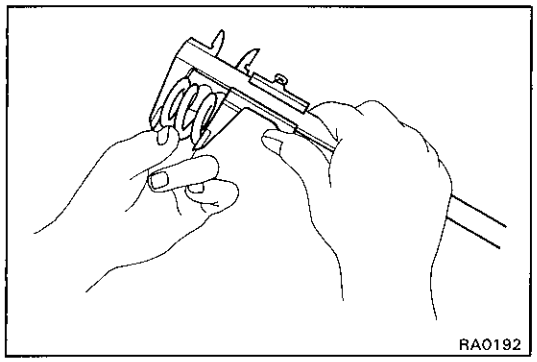


3. INSPECT CLUTCH PLATE FOR WEAR OR DAMAGE

Check that there is no abnormal wear.

(For reference) Thickness:

1.97 — 2.03 mm (0.0776 — 0.0799 in.)



4. INSPECT SPRING FREE LENGTH

Measure the free length of the spring.

(For reference) Lengh:

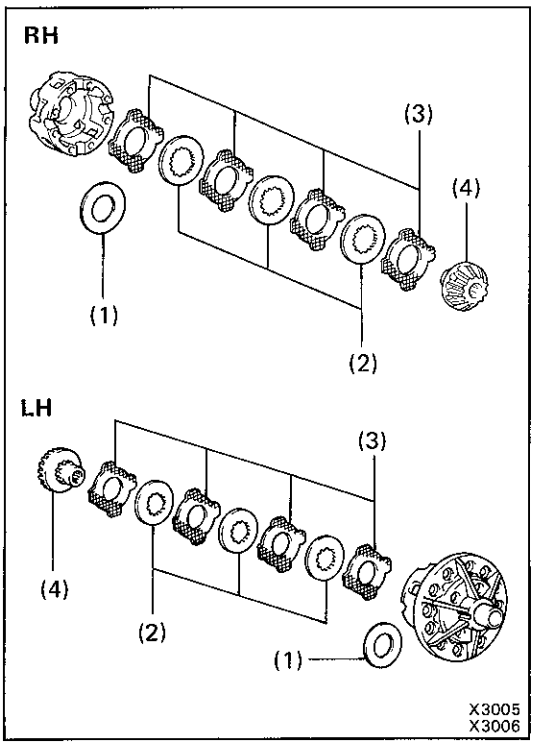
38.0 — 39.3 mm (1.496 — 1.547 in.)

ASSEMBLY OF DIFFERENTIAL CASE

(See page SA-174)

HINT:

- Using a rag, clean off any foreign matter from the parts.
- Apply LSD oil to the contact surfaces of the clutch plates and the thrust washers.
- When installing, the thrust washers (Marking A — M) are not used. To adjust the backlash, use one new thrust washer or the adjusting shim.



1. MEASURE SIDE GEAR BACKLASH

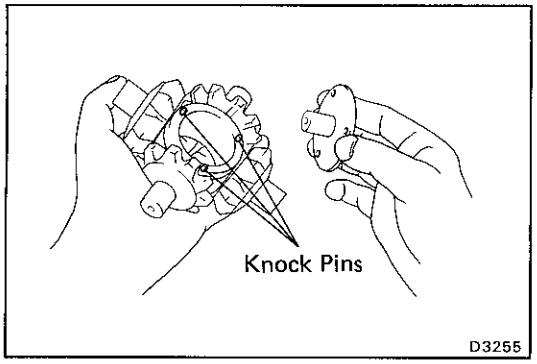
(a) Install the following parts to the LH and RH cases:

(1) Adjusting shim (0 to 3 pieces)

(2) Clutch plate (3 pieces)

(3) Side gear thrust washer (4 pieces)

(4) Side gear



(b) Install the four pinion gears and thrust washers to the spider.

(c) Align the LH retainer holes with the spider knock pins and install the LH retainer.

(d) Install the pinion gear and spider to the LH case.

HINT: Install the spider to the LH case tightly, and don't move the spring retainer.

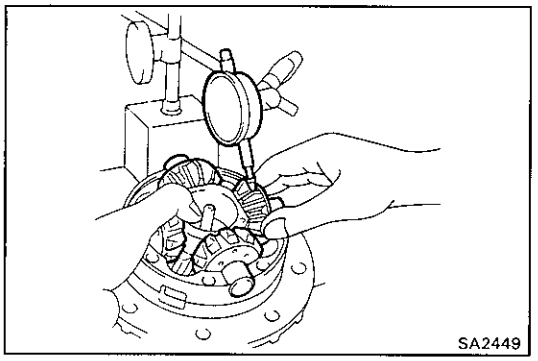
(e) Hold the side gear and spider, measure the side gear backlash.

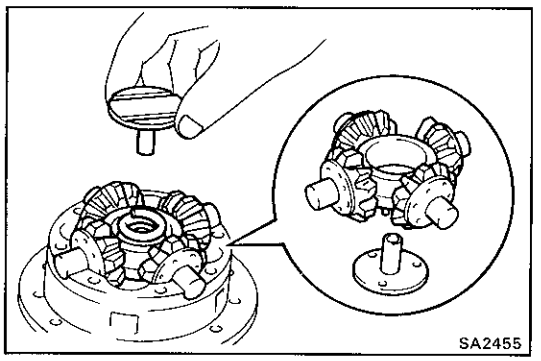
Backlash: 0.02 — 0.24 mm (0.0008 — 0.0094 in.)

HINT:

- Measure at all four locations.
- Measure the backlash at the LH case and at the RH case.
  If the backlash is not within specification, install a thrust washer of a different thickness.

Thrust washer thickness	mm (in.)
0.20 (0.0079)	1.30 (0.0118)
0.25 (0.0098)	0.35 (0.0138)



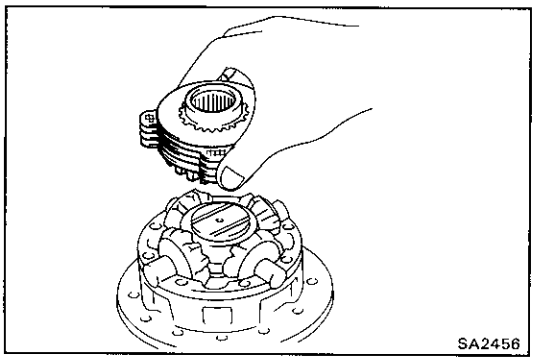


2. ASSEMBLE DIFFERENTIAL CASE

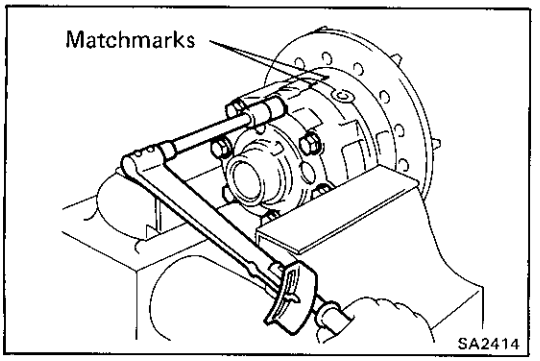
(a) Reinstall the spider and spring LH retainer to the LH case.

HINT: Install the spider to the LH case tightly, and don't move the spring.

(b) Install the compression spring and spring RH retainer.



(c) Install the side gear, thrust washers and clutch plates.



(d) Align 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.

(e) Tighten the eight bolts uniformly, a little at a time.

Torque: 480 kg-cm (35 ft-lb, 47 N·m)

INSTALLATION OF DIFFERENTIAL

1. INSTALL DIFFERENTIAL CASE CARRIER
(See page SA-146)

2. INSTALL DIFFERENTIAL
(See page SA-142)