RALLIART

Lancer Evolution VIII/VII
Super Traction Rear LSD Kit
RA534828K1

Installation/User Manual

Thank you for purchasing our Ralliart product.
This installation/user manual explains the procedure for installing this product as well as information on how to use it effectively. Please read this manual carefully to ensure thorough understanding of the details of this product before installation. Give this manual to the customer to save for future reference.

Important Safety Notice

Please follow the instructions in this manual carefully to ensure proper installation of this product.

- This manual contains the following warning symbols:

⚠ CAUTION This indicates important safety information that must be carefully observed.

⚠ CAUTION All safety messages that follow this symbol must be carefully observed in order to reduce the risk of personal injury or accidents.

NOTICE This indicates information that should be observed when installing parts.

- Install the parts to the car as instructed in this manual. Failure to follow the instructions may hamper the function of this product or cause car trouble.
- Be aware that Ralliart takes no responsibility for any product malfunction or car trouble that occurs during or after installation of this product.

After installing this product, please give the customer
this installation/user manual to save for future reference.

To the Owner

■ Precautions for Use

1. Do not use or install this product on non-applicable car models. Such installation could result in car damage or accidents.
2. Do not modify or disassemble this product in any manner.
3. Because this product is a mechanical (multi-plate type) LSD assembly, it may cause a dragging noise from the drive wheels or a rattling noise (chatter) from the differential gears during cornering maneuvers.
4. If you experience any problems when driving your car after this product is installed, stop your car immediately and have it checked at a repair shop. Failure to do so could result in car damage or accidents.
5. Install this product using only the specified parts supplied in the kit. Do not combine parts of other products into the assembly of this product.
6. Have your car inspected when necessary to maintain normal installation and operating conditions of this product.
7. If the original function of this product cannot be maintained due to damage or deterioration, replace it immediately.

■ Applicable Models

Car Model Name		Model	Series	Transmission Type
Lancer Evolution VIII	RS	CT9A	SJDFZ	6FM/T
			SNDFZ	5FM/T
Lancer Evolution VII	RS	CT9A	SNDFZ	5FM/T
Lancer Evolution VI (including TM edition)	RS	CP9A	SNDF	5FM/T
Lancer Evolution V	RS	CP9A	SNDF	5FM/T
Lancer Evolution IV	RS	CN9A	SNDF	5FM/T
Lancer Evolution III	RS	CE9A	SNDF	5FM/T
Lancer Evolution II	RS	CD9A	SNDF	5FM/T
Lancer Evolution I	RS	CD9A	SNDF	5FM/T

* This product cannot be installed on cars equipped with AYC (Active Yaw Control).

Precautions for Installation

⚠CAUTION

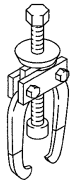
1. To ensure safety during installation, turn the ignition key to the “OFF” position and set the parking brake firmly.
2. Jack up the car body and firmly support it with a set of jack stands, using only the jacking and support points specified in the Car Owner’s Manual. Failure to use the designated jacking/support points could result in deformation of the body or other parts.

NOTICE

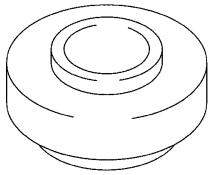
3. This Installation/User Manual explains only the essential points of the installation procedure for this product. For further details regarding installation procedure, refer to the Mitsubishi Motors Corporation (MMC) Workshop Manual for your car model.
4. All attachment bolts and nuts should be securely tightened at the specified torque.
5. Install this product using the specified set of parts only. Do not combine parts of other products into the assembly of this product.

Special Tools Required

Bearing puller

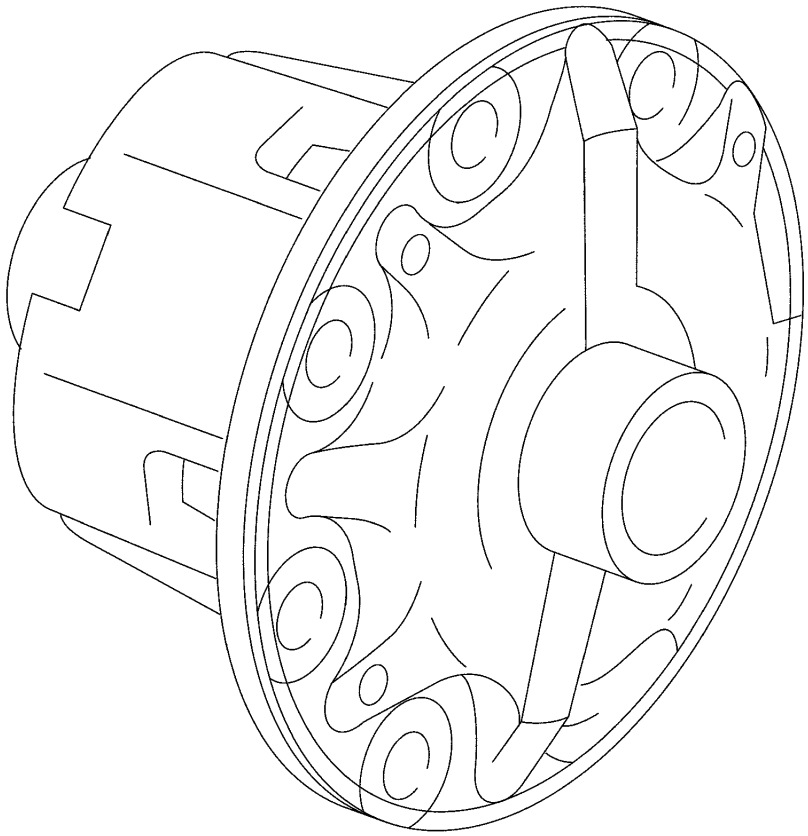


Bearing inner race installer



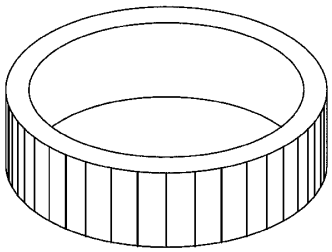
Kit Contents (Ensure that the following parts are contained in the kit.)

Rear LSD

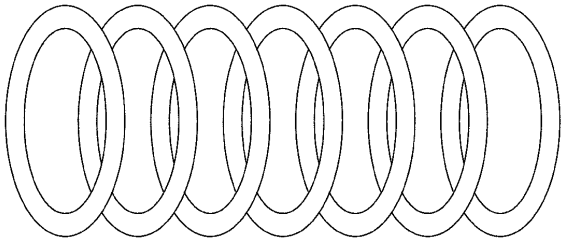


Other Parts Required (The following parts must be purchased separately for installation of this product)

Two MB393957 side bearings



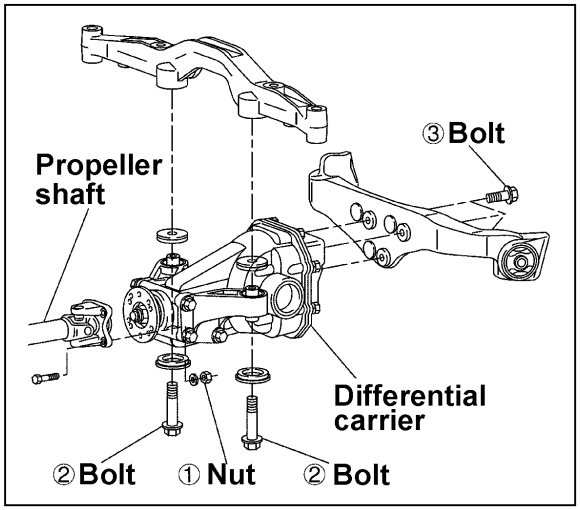
1 set of MB241903 spacers



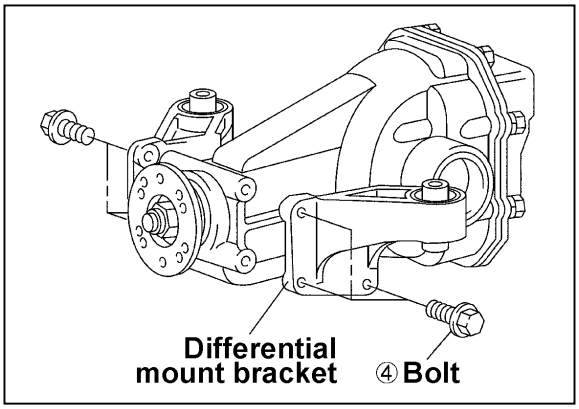
Installation Procedure

1. Removal of Rear Differential Carrier Assembly

Before removing the rear differential carrier assembly from the car, drain all differential oil from the differential carrier, and then remove the rear lower arm, rear stabilizer, and rear driveshaft.

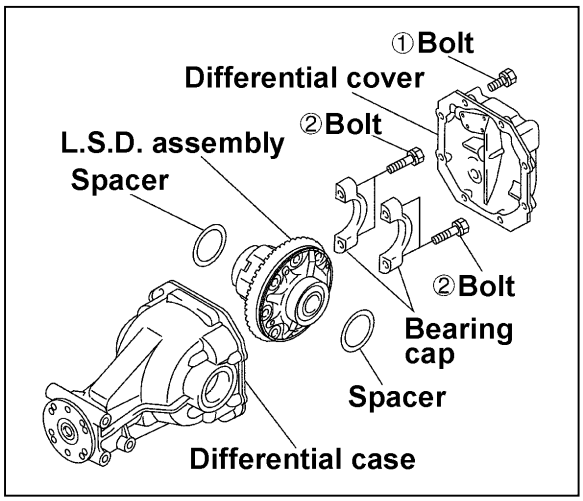


(1) Remove nuts ① and their corresponding bolts to disconnect the differential carrier from the propeller shaft.
(2) Remove bolts ② and ③ to disconnect the components attached to the differential carrier assembly.

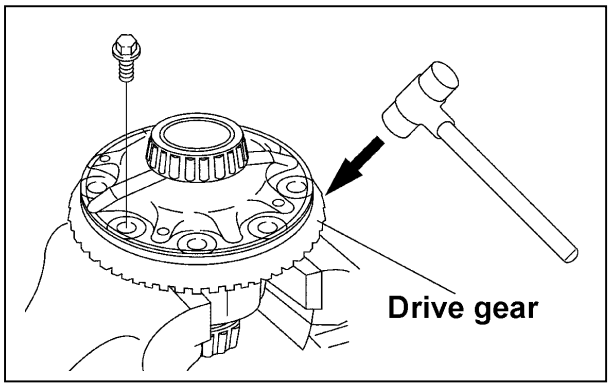


(3) Remove bolts ④ to disconnect the differential mount brackets from each side of the assembly.

2. Disassembly of Rear Differential Carrier Assembly



(1) Remove bolt ① to disconnect the differential cover from the carrier case.
(2) Remove bolts ② to detach the bearing caps.
(3) Remove the existing LSD assembly from the differential case.

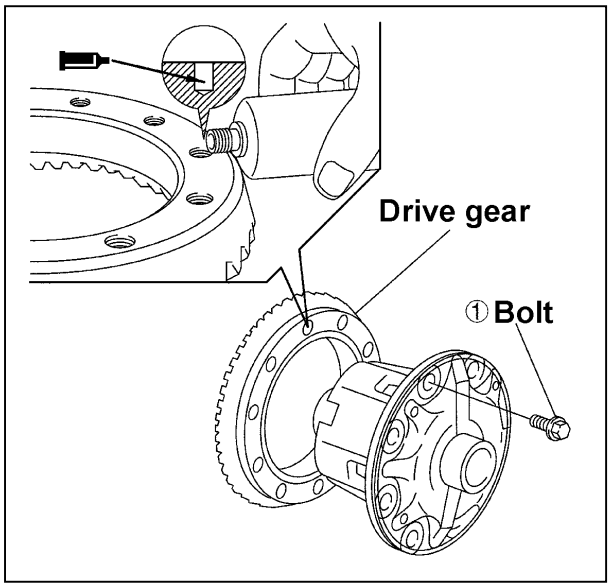


(4) Remove the attachment bolts that secure the drive gear to the existing LSD assembly. Hit the drive gear with a plastic hammer to make it easier to remove it from the LSD assembly.

NOTICE

The removed drive gear will be re-used when installing the new LSD assembly.

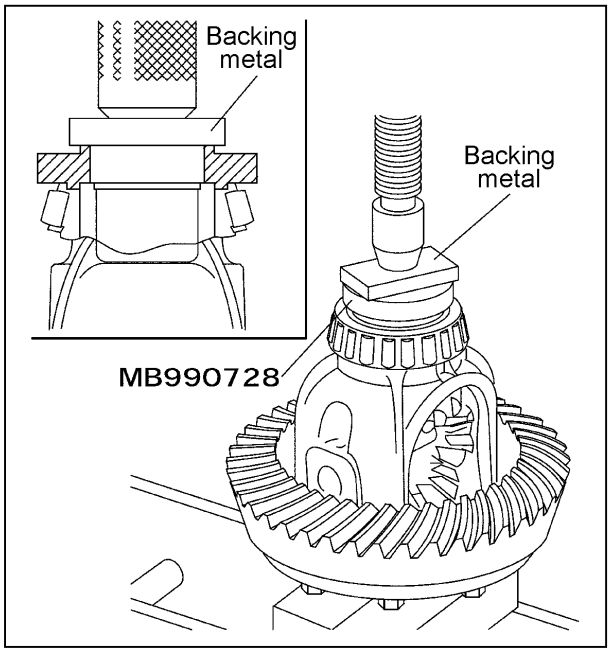
3. Assembly of New LSD Assembly



(1) Apply an anaerobic adhesive to the drive gear as shown at left. Attach the drive gear to the new LSD assembly using attaching bolts ①.

NOTICE

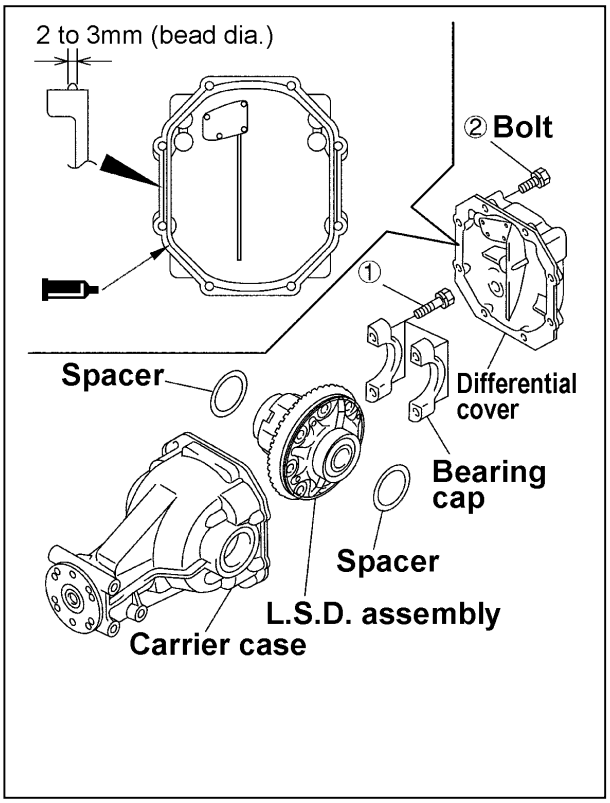
- Specified torque:
  Bolts ①: 84 ±4 N•m (8.5 kgfm)
- Anaerobic adhesive:
  ThreeBond 1303 or equivalent



(2) Fit a side bearing onto the LSD assembly using the special tools listed in this manual.

Installation Procedure

4. Assembly of Rear Differential Carrier Assembly

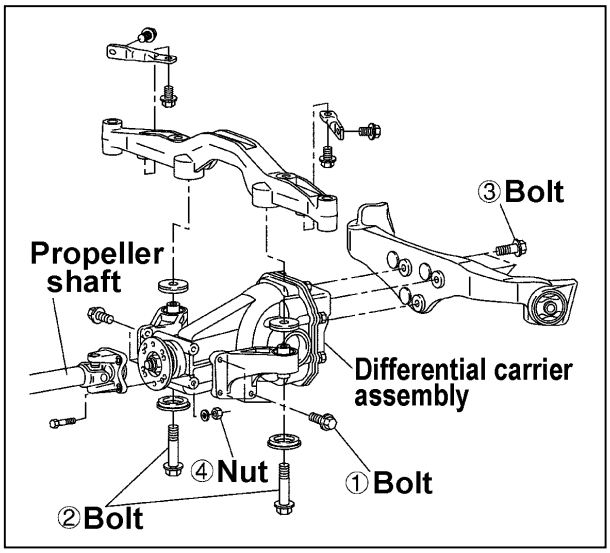


(1) Attach a side bearing outer race to the LSD assembly and also attach spacers that have been selected according to the backlash adjustment procedure specified in the MMC Workshop Manual. Install the LSD assembly on the carrier case.
(2) Align the alignment marks of the carrier case with those of each bearing cap, and secure the bearing caps to the carrier case by means of bolts ①.
(3) Apply a semi-drying sealing agent over the mating surface of the differential cover, and attach it to the carrier case using bolts ②.

NOTICE

- Specified torque:
  Bolts ①: 37 ±2 N•m (3.8 kgfm)
  Bolts ②: 36 ±5 N•m (3.7 kgfm)
- Semi-drying sealing agent:
  ThreeBond 1216 or equivalent

5. Installation of Rear Differential Carrier Assembly

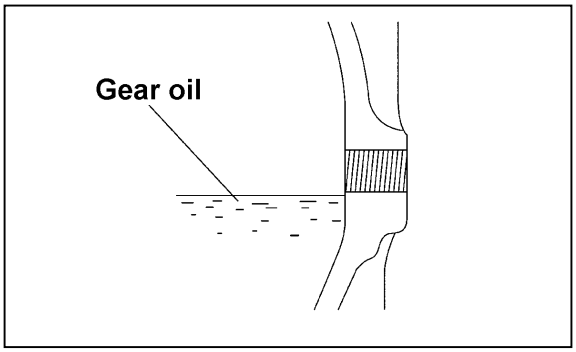


(1) Install the rear differential carrier assembly on the car in the reverse order of the removal procedure.

NOTICE

- Specified torque:
  Bolts ①: 88 ±10 N•m (9.0 kgfm)
  Bolts ②: 120 ±10 N•m (12.2 kgfm)
  Bolts ③: 88 ±10 N•m (9.0 kgfm)
  Nuts ④: 32 ±2 N•m (3.2 kgfm)

Installation Procedure



(2) Fill the specified differential oil into the differential case so that the fluid level reaches the bottom of the opening for the filler plug, then attach and tighten the filler plug at the specified torque.

NOTICE

- Specified differential oil:
  Mitsubishi Genuine Dia Queen LSD Gear Oil (GL-5)
- Specified torque:
  Filler plug: 49 ±9 N•m (5.0 kgfm)

Reference Information

■ Scheduled Interval for Fluid Change After Installation

Periodic replacement item	Replacement interval	Capacity (dm^3)	Product Name
Differential oil	20,000 km	0.55	Mitsubishi Genuine Dia Queen LSD Gear Oil (GL-5)

NOTICE

The above fluid change interval is a guideline only. The differential oil may deteriorate more quickly depending on its conditions of use. In such cases, it is recommended to replace the oil sooner than the above recommended interval.

NOTES

Overhaul Manual

Thank you for purchasing our product.
This overhaul manual explains the procedure for overhauling the super traction rear L.S.D. assembly installed on Lancer Evolution VIII/VII. Please read this manual carefully to ensure thorough understanding of the details of this product before overhaul. Give this manual to the customer to save for future reference.

Important Safety Notice

Please follow the instructions in this manual carefully to ensure proper installation of this product.

- This manual contains the following warning symbols.

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⚠ CAUTION All safety messages that follow this symbol must be carefully observed in order to reduce the risk of personal injury or accidents.

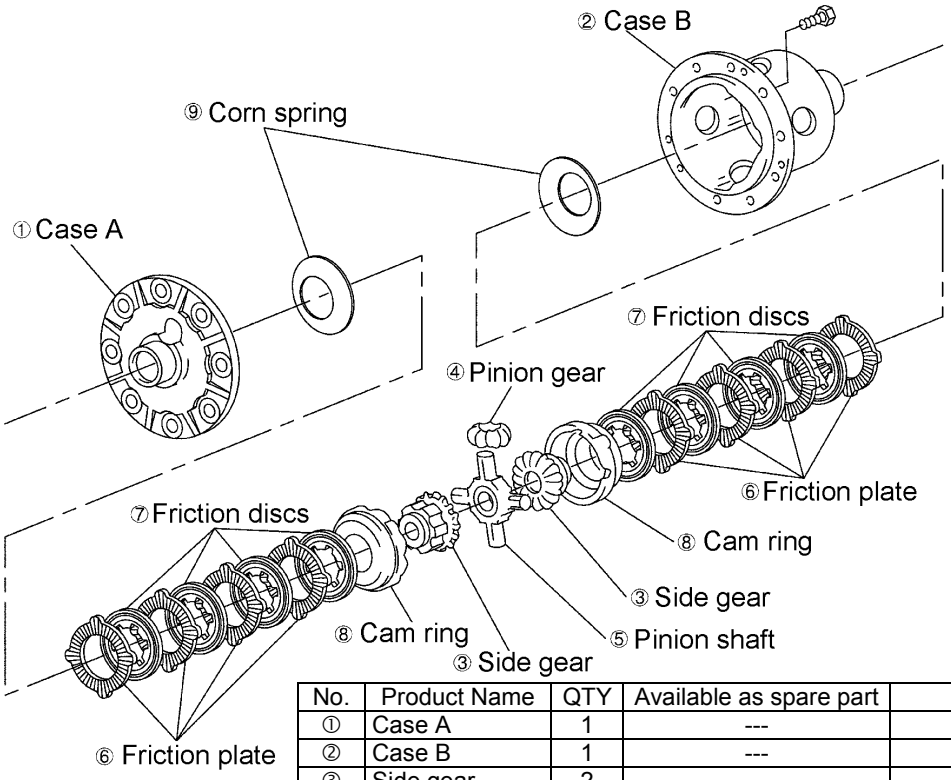
NOTICE This indicates information that must be observed when installing parts.

- Install the parts to the vehicle as instructed in this manual. Failure to follow the instructions may hamper the function of the product or cause vehicle trouble.
- Be aware that RALLIART takes no responsibility for any product malfunction or vehicle trouble that has occurred during or after the installation.

On completion of installation of the garnish, please give the customer this installation/user manual

Instructions

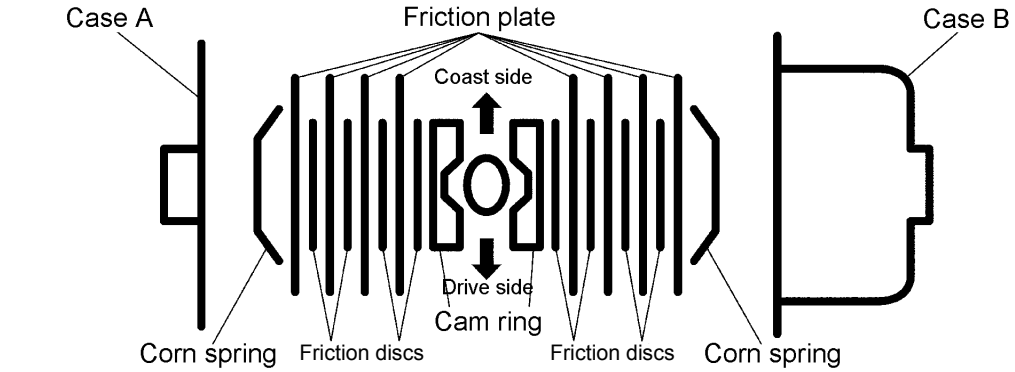
[Components of Rear LSD Assembly]



No.	Product Name	QTY	Available as spare part	Note
①	Case A	1	---	
②	Case B	1	---	
③	Side gear	2	---	
④	Pinion gear	4	---	
⑤	Pinion shaft	1	---	
⑥	Friction plate	8	O	Outer lug
⑦	Friction disc	8	O	Inner lug
⑧	Cam ring set	1	O	55°/35°-55°/55°
⑨	Corn spring	2	O	T=1.7mm (Ti=190N•m)

[Assembly of Rear LSD]

1. Assembly procedure and direction of each plate



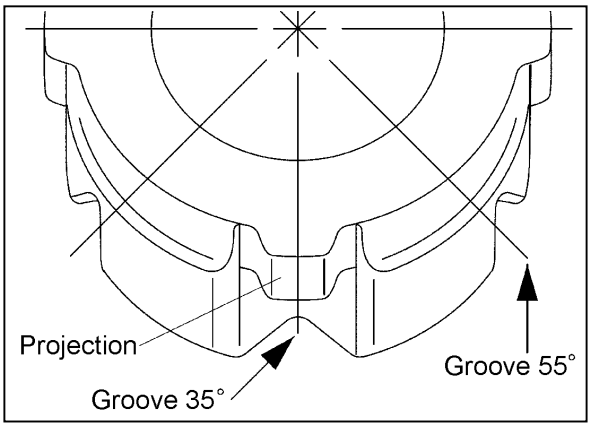
NOTICE

- Please refer to the above figure for the assembly procedure and direction of the plates in the instructions to be explained hereafter.

Instructions

2. Assembly of the pinion shaft and the cam rings

(1) The cam ring has grooves of angles of 35° (1.8-way) and 55° (2-way) in the coast side.



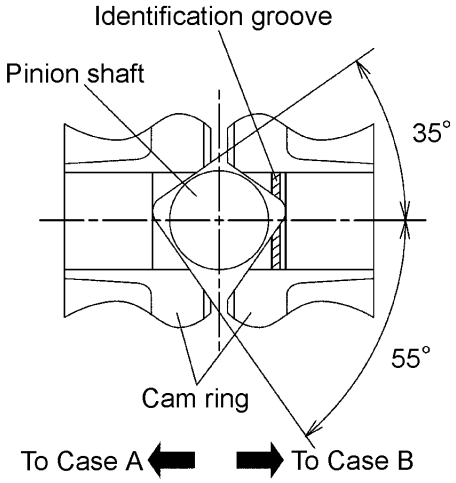
NOTICE

- The 35° groove in the coast side is located where there is a fitting projection in the cam ring.

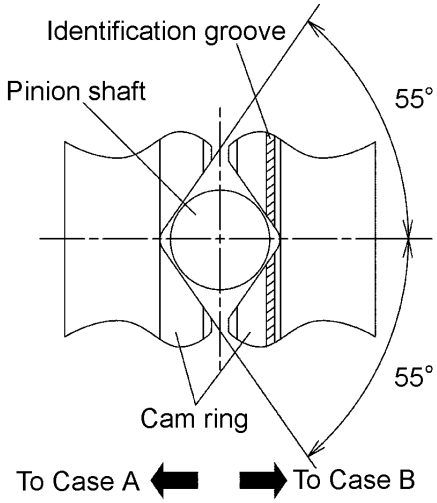
⚠CAUTION

(2) Align the pinion shaft and the mating surfaces of the cam rings snugly as shown in the figure below. Improper alignment could damage the LSD assembly.

In the case where the 35° groove (1.8 way) is assembled in the coast side

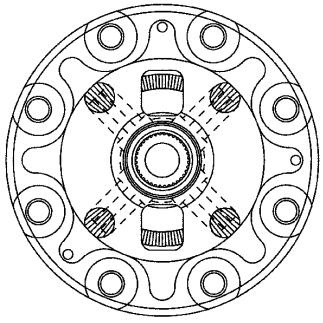


In the case where the 55° groove (2 way) is assembled in the coast side



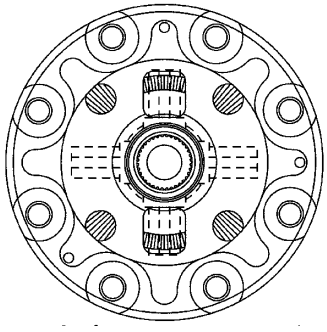
(3) After completion of the assembly, the assembly looks like either of the following figures.

View from the case A



Pinion shaft assembled in the 55°/35° groove

View from the case A

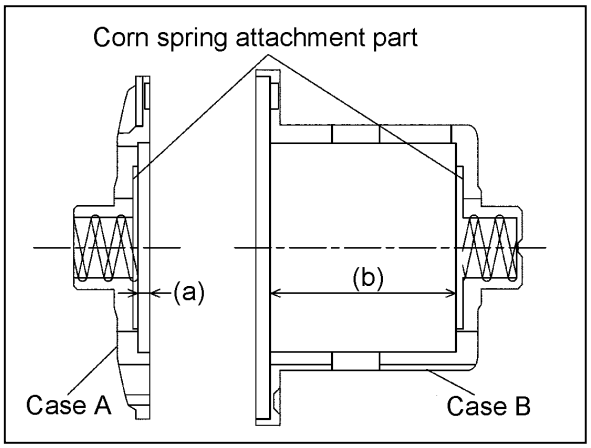


Pinion shaft assembled in the 55°/55° groove

Instructions

3. Assembly of the inner plates

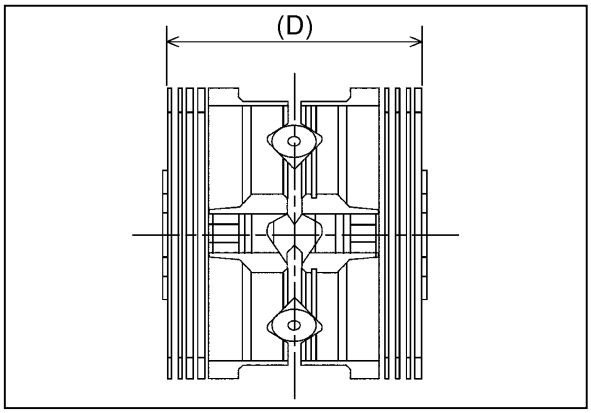
Measure the depth of the case (A) and the assembly height of the inner plates (D) as shown below, and assemble the inner plates, the case A, and the case B so that the clearance (S) in the assembled case is within the standard values (See the last Note in this page).



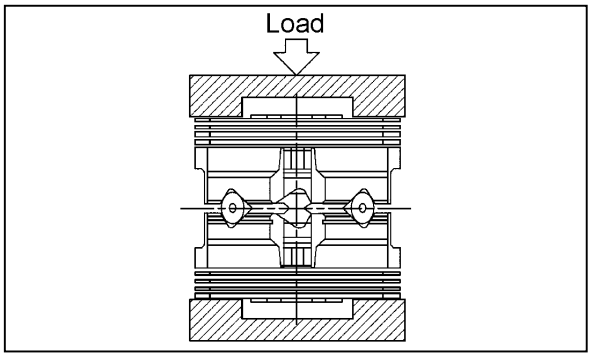
(1) Measurement of the depth (A)
Measure the depth of the case A and B, and calculate the depth (A) by adding the two measured values, (a) and (b);
(A) = (a) + (b)

NOTICE

- Measure the depth excluding the depth of the hollow part for setting the corn spring.



(2) Measurement of the assembled height (D) of the inner plates
Assemble the plates, cam rings, pinion shaft, pinion gears, and side gears, and measure the height (D) with a micrometer.



NOTICE

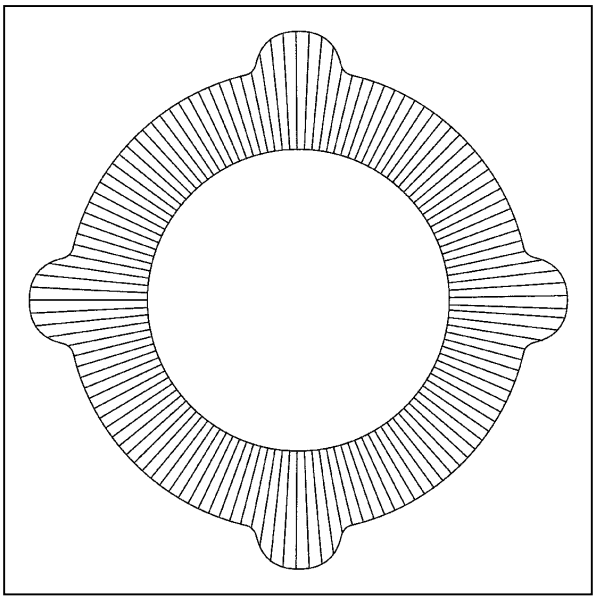
- Measure while pressing from both sides so that each plate contacts with each other.
- Clean every part sufficiently prior to measurement.
- Ensure that the pinion shaft is properly placed between two cam rings so that each corresponding groove faces each other.

(3) Measurement of the clearance
Calculate the clearance (S) from the depth (A) and the height of the inner plates (D).
(S) = (A) – (D)

NOTICE

- Clearance (S) Standard value: 0.06 to 0.25 mm

(4) Adjustment of clearance
Where the clearance is out of the standard values, replace the friction plates with those of proper thickness so that the assembly height of the inner plates is within the range of the standard values.

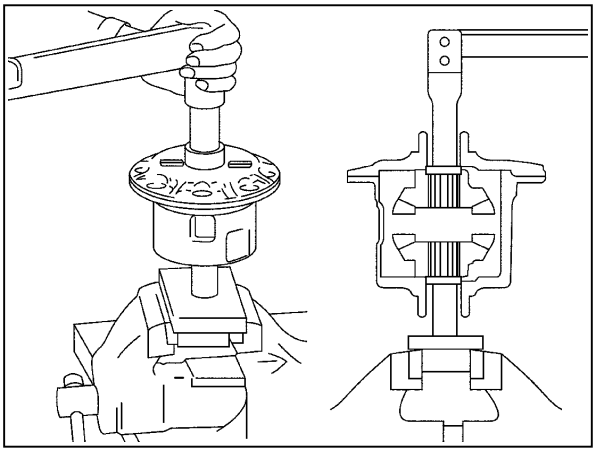


NOTICE

- Thickness of the alternative friction plates
  RA282104K1: 1.6 mm
  RA138432K1: 1.7 mm
  RA163449K1: 1.8 mm

5. Cam angle and initial torque at delivery

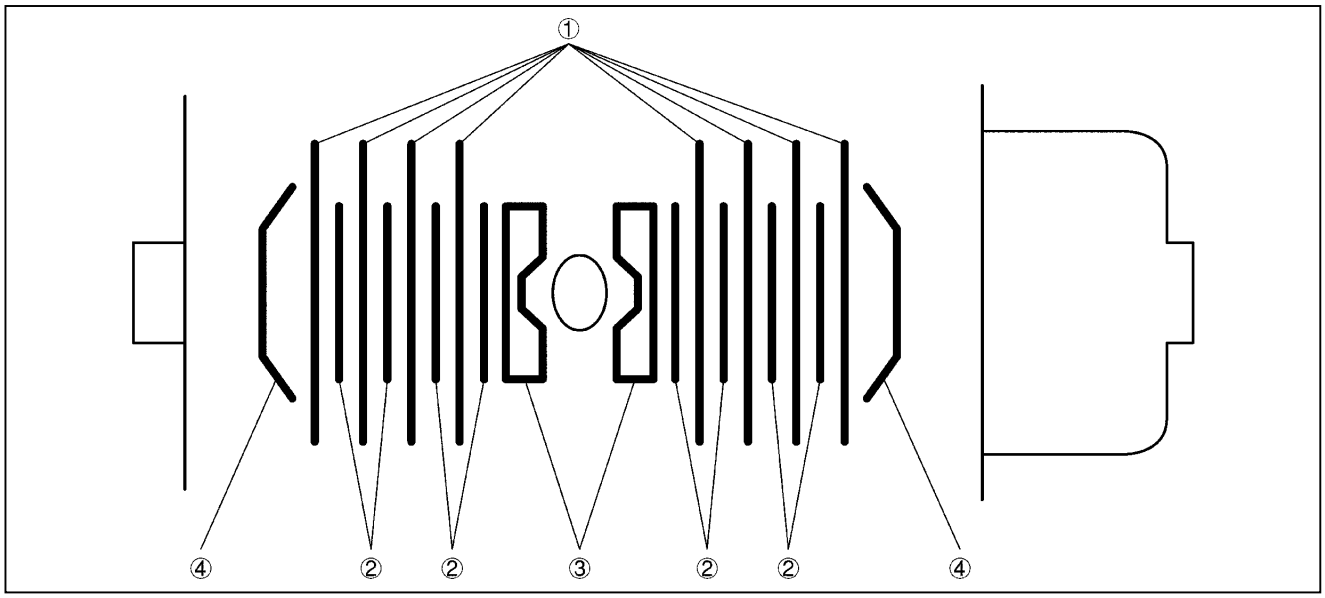
Cam angle	Initial torque
55°/55° (Drive side/coast side)	approx. 190N·m



* The initial torque is a value set at the installation in the vehicle. A half of the initial torque is to be measured in the procedure shown in the figure at left.

Instructions

[Spare parts]



No.	Part Name	Part Number	Price (yen)	Remarks
①	Friction plate	RA282104K1	2200/piece	Outer lug (T=1.6 mm)
		RA138432K1	2200/piece	Outer lug (T=1.7 mm)
		RA163449K1	2200/piece	Outer lug (T=1.8 mm)
②	Friction disc	RA138433K1	2200/piece	Inner lug (T=1.7 mm)
③	Cam ring set (Right and left per set)	RA192402S1	23000/set	55°/55°-55°/35°
④	Corn spring	RA792400K1	2900/piece	T=1.7 mm (Ti=190 N·m)
		RA783801K1	2900/piece	T=2.0 mm (Ti=255 N·m)