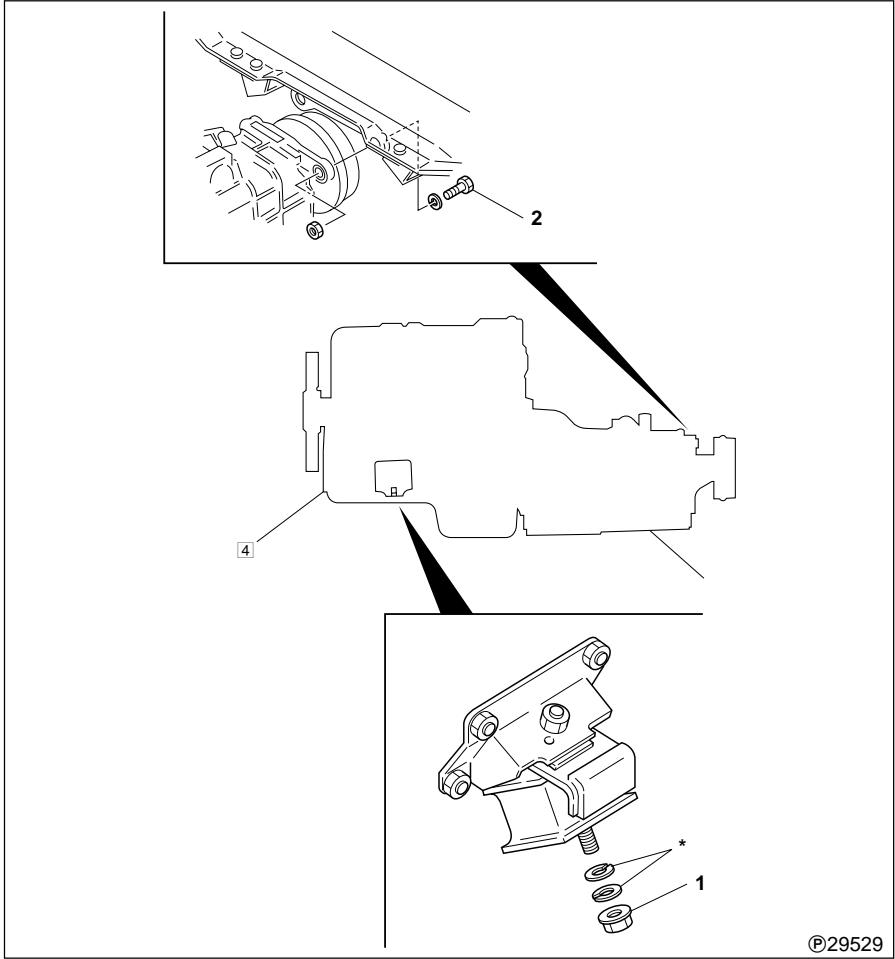
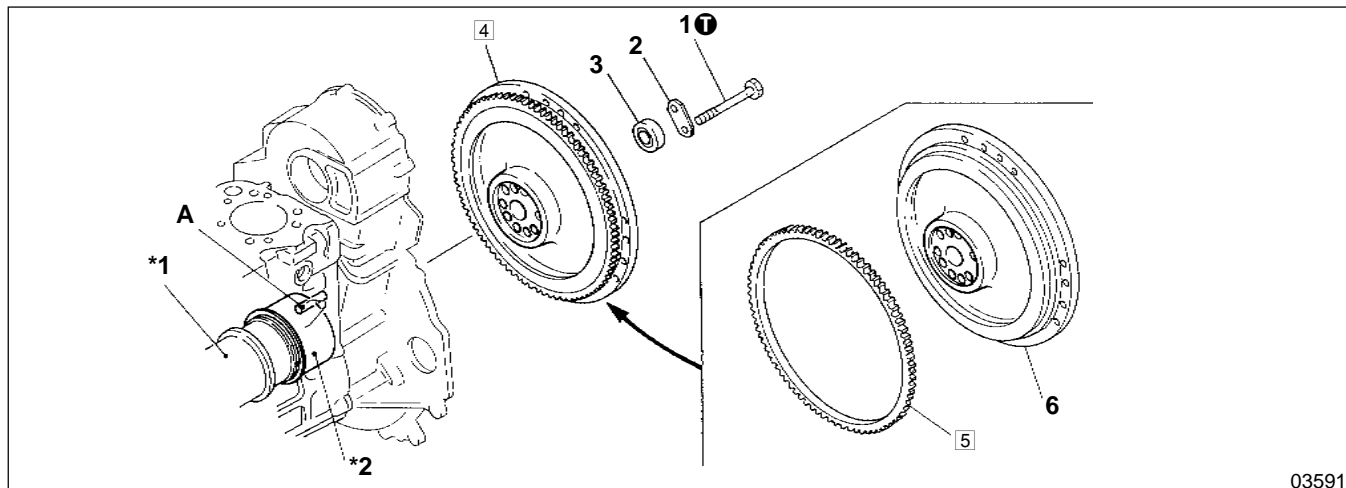


2001 MODEL CHANGES

Item	'01 Model	⇐ '00 Model												
Gr 00 General Power Train Table and Vehicle Identification number have been updated.	📖 Gr 00	—												
Gr 01 Maintenance Schedule The schedule for 4M50T2 engine has been added.	📖 Gr 01	—												
Gr 10 REMOVAL & INSTALLATION • Removal and installation procedures for 4M50T2 established	<p data-bbox="579 447 959 474">Removal and Installation of Engine</p>  <p data-bbox="1382 1402 1463 1430">©29529</p> <ul data-bbox="579 1465 1446 1545" style="list-style-type: none"> ● Removal sequence 1 Nut 3 Transmission assembly 📖 Gr22 *: Wide cab vehicle only 2 Bolt 4 Engine assembly <p data-bbox="579 1556 1469 1640">WARNING ⚠️ When lifting the engine assembly 4, be sure to use a lifting gear or engine hoist capable of lifting an engine of 3.9 to 4.7 kN {880 to 1060 lbs, 400 to 480 kg}.</p> <ul data-bbox="579 1667 1013 1724" style="list-style-type: none"> ● Installation sequence Follow the removal sequence in reverse. <p data-bbox="579 1730 1469 1757">🔧 Tightening torque Unit: N·m{lb·ft, kgf·m}</p> <table border="1" data-bbox="579 1766 1469 1885"> <thead> <tr> <th>Location</th> <th>Parts to be tightened</th> <th>Tightening torque</th> <th>Remarks</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Nut (For attaching front mounting)</td> <td>69 to 99 {51 to 65, 7 to 9}</td> <td>—</td> </tr> <tr> <td>2</td> <td>Bolt (For attaching rear mounting)</td> <td>125 to 175 {94 to 130, 13 to 18}</td> <td>—</td> </tr> </tbody> </table>		Location	Parts to be tightened	Tightening torque	Remarks	1	Nut (For attaching front mounting)	69 to 99 {51 to 65, 7 to 9}	—	2	Bolt (For attaching rear mounting)	125 to 175 {94 to 130, 13 to 18}	—
Location	Parts to be tightened	Tightening torque	Remarks											
1	Nut (For attaching front mounting)	69 to 99 {51 to 65, 7 to 9}	—											
2	Bolt (For attaching rear mounting)	125 to 175 {94 to 130, 13 to 18}	—											

FLYWHEEL



03591

● Disassembly sequence

- 1 Bolt
- 2 Plate
- 3 Bearing
- 4 Flywheel assembly
- 5 Ring gear

6 Flywheel

*1: Crankshaft  Gr.11

*2: Crankshaft power take-off pulley

 P.11-6

A: Location Pin




● Assembly sequence

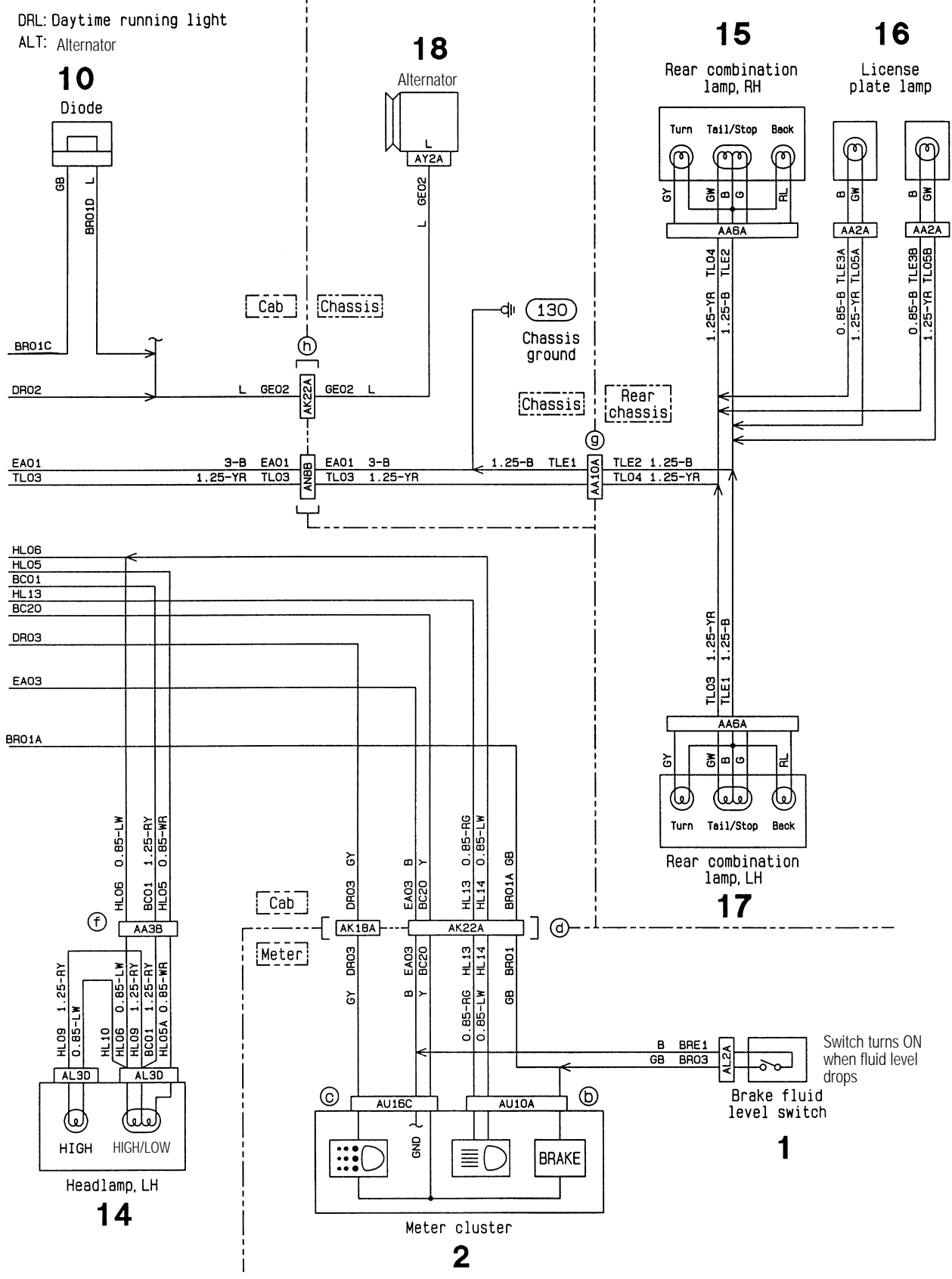
Follow the disassembly sequence in reverse.

CAUTION

After the flywheel assembly 4 is installed, be sure to check the flywheel 6 for runout.

2000 MODEL CHANGES

Item	'00 Model	'99 Model
Gr 35 Brake System <ul style="list-style-type: none"> Load sensing valve and bypass valve are no longer installed due to addition of anti-lock brake system (ABS). 	Without load sensing valve and bypass valve	With load sensing valve and bypass valve
<ul style="list-style-type: none"> Procedures for bleeding brake system are added because of anti-lock brake system (ABS). 	<p>[Procedure for bleeding hydraulic unit]</p> <ul style="list-style-type: none"> Ordinary bleeding procedure is used for the primary side (non ABS-hydraulic system). However, when the solenoid valve of the hydraulic unit operates (ABS operation) with air mixed in the primary side, air enters the secondary side (hydraulic system). Therefore, be sure to bleed air from the secondary side using the MUT-II by following the procedures described below. Regarding the use of the MUT-II, refer to  Gr 35A. <p>< Bleeding front brakes ></p> <ul style="list-style-type: none"> Bleed the primary side of the front brake system. (Ordinary bleeding procedure) Depress the brake pedal, and select the actuator drive mode, "FL ABS MV ON," on the MUT-II to force-drive the brake. Open bleeder, bleed air from the wheel cylinder of the front left wheel brake system. Repeat the above two steps until air is completely removed. Depress the brake pedal, and select the actuator drive mode, "FR ABS MV ON," on the MUT-II to force-drive the brake. Bleed air from the secondary side of the front right wheel brake system. Repeat the above two steps until air is completely removed. <p>< Bleeding rear brakes ></p> <ul style="list-style-type: none"> Bleed the primary side of the rear brake system. (Ordinary bleeding procedure) Depress the brake pedal, and select the actuator drive mode, "RL ABS MV ON," on the MUT-II to force-drive the brake. Bleed air from the secondary side of the rear left wheel brake system. Repeat the above two steps until air is completely removed. Depress the brake pedal, and select the actuator drive mode, "RR ABS MV ON," on the MUT-II to force-drive the brake. Bleed air from the secondary side of the rear right wheel brake system. Repeat the above two steps until air is completely removed. 	
Gr 35A Anti-lock Brake System <ul style="list-style-type: none"> Anti-lock brake system (ABS) is added. 	 Gr 35A Anti-lock brake system (ABS) '00 Minor Change (Pub. No. TWSE9501-435A)	—
Gr 42 Cab <ul style="list-style-type: none"> Power window system is equipped with central door lock switch. 	 Gr 42 Cab	—



GROUP 54 ELECTRICAL

1 POWER, CHARGE AND GROUND

SPECIFICATIONS	1
STRUCTURE AND OPERATION	1
TROUBLESHOOTING	1
100 INSPECTION AND ADJUSTMENT MOUNTED IN VEHICLE	
• Inspection of Alternator	2
• Inspection of Regulator	2
101 BATTERY	1
104 FUSE	1
106 ALTERNATOR	2
110 POWER CIRCUIT	1
115 RESERVE POWER CIRCUIT	1
125 BATTERY CHARGING CIRCUIT	54-4
130 GROUND	1

2 STARTING, PREHEATING, AND STOPPING ENGINE

SPECIFICATIONS	1
STRUCTURE AND OPERATION	1
TROUBLESHOOTING	1
200 INSPECTION AND ADJUSTMENT MOUNTED IN VEHICLE	
Inspection of Engine Preheating System	1
201 STARTER	1
210 ENGINE STARTING CIRCUIT	
< Manual Transmission >	54-6
< Automatic Transmission >	54-8
220 ENGINE PREHEATING CIRCUIT	1
225 ENGINE WARMING UP CIRCUIT	54-10

3 LIGHTING

SPECIFICATIONS	1
STRUCTURE AND OPERATION	1
TROUBLESHOOTING	1
300 INSPECTION AND ADJUSTMENT MOUNTED IN VEHICLE	
Headlamp Aiming	1
310 HEADLAMP CIRCUIT	1
320 TAIL LAMP, CLEARANCE LAMP AND LICENSE PLATE LAMP CIRCUITS	1
325 STOP LAMP CIRCUIT	1
330 TURN SIGNAL LAMP AND HAZARD LAMP CIRCUITS	1
340 BACKUP LAMP CIRCUIT	
< Manual Transmission >	1
< Automatic Transmission >	54-12
345 CAB LAMP CIRCUIT	1
348 ILLUMINATION LAMP CIRCUIT	1
349 MARKER LAMP AND IDENTIFICATION LAMP CIRCUITS	1
352 VAN BODY DOME LIGHT CIRCUIT	1

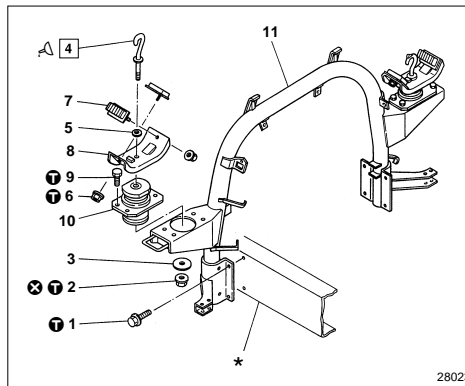
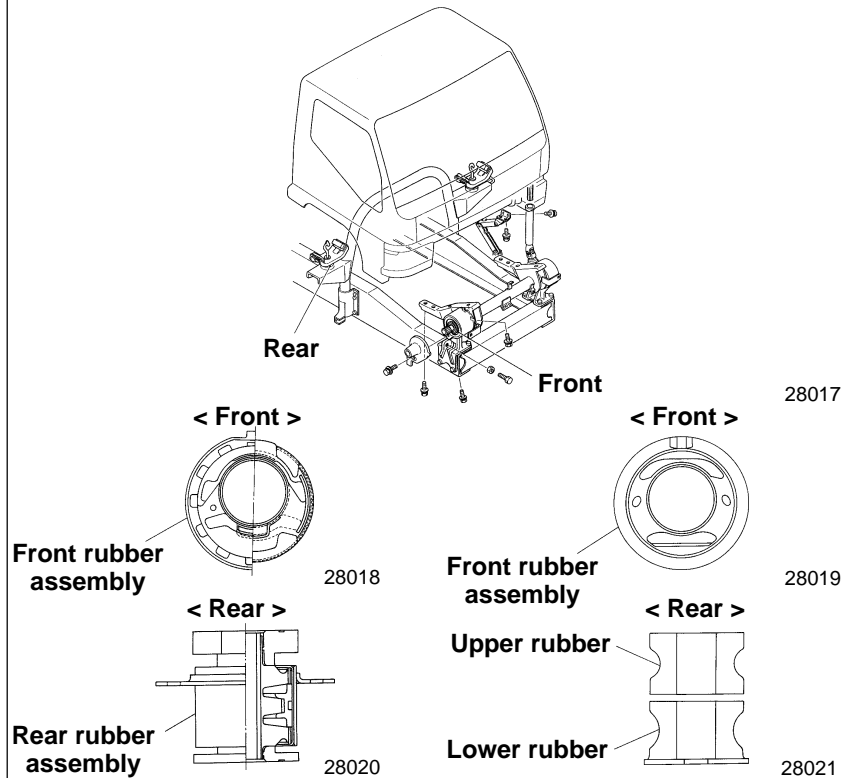
4 METER

SPECIFICATIONS	1
TROUBLESHOOTING	1
401 METER CLUSTER	1
410 TACHOMETER CIRCUIT	1
420 FUEL GAUGE CIRCUIT	1
425 WATER TEMPERATURE GAUGE CIRCUIT	1

1998 MODEL CHANGES

Item	'98 Model	⇐	'97 Model
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- Cab mounting front rubber and rear rubber are changed.



● **Disassembly sequence**

- 1 Bolt
- 2 Nut
- 3 Plate
- 4 Anchor hook
- 5 Spacer
- 6 Nut
- 7 Side rubber
- 8 Cab hold bracket
- 9 Bolt
- 10 Rear rubber assembly
- 11 Rear mounting post

- ⊗ : Non-reusable parts
- * : Frame

● **Assembly sequence**

Follow the disassembly sequence in reverse.

ⓘ **Tightening torque**

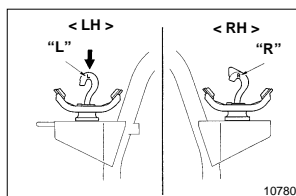
Unit : N-m {lb.ft, kgf-m}

Location	Parts to be tightened	Tightening torque	Remarks
1	Bolt (Rear mounting post mounting)	78 to 105 {58 to 80, 8 to 11}	—
2	Nut (Anchor hook mounting)	83 to 98 {61 to 72, 8.5 to 10.0}	—
6	Nut (Side rubber mounting)	10 to 15 {7.2 to 11.0, 1.0 to 1.5}	—
9	Bolt (Rear rubber assembly mounting)	16 to 20 {12 to 14, 1.6 to 2.0}	—

Ⓐ **Lubricant**

Location	Points of application	Specified lubricant	Quantity
4	Upper side of anchor hook (contact area between lock handle and stopper)	Chassis grease [NLGI No. 1 (Ca Soap)]	—

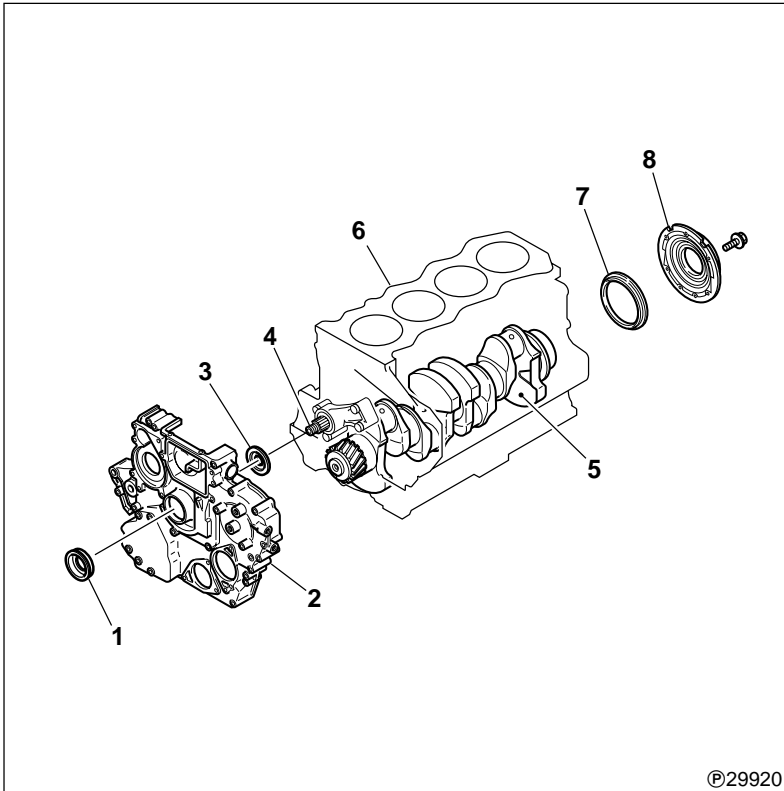
◆ **Service procedure**



4 **Installation of anchor hook**

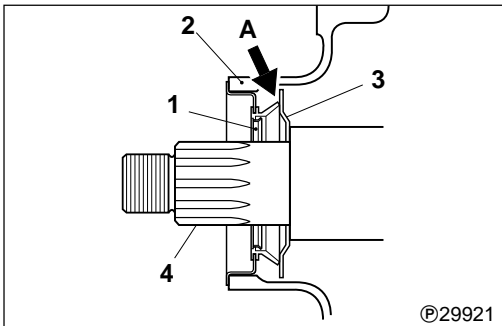
Install anchor hook 4 so that open side of the hook comes to left side of the vehicle while aligning the identification marks "L" and "R". Also always make sure to apply grease on upper part of the left anchor hook (↓ part).

Oil Seals



- 1 Front oil seal
- 2 Front case
- 3 Front oil seal slinger
- 4 Fan shaft
- 5 Crankshaft
- 6 Crankcase
- 7 Rear oil seal slinger
- 8 Rear oil seal

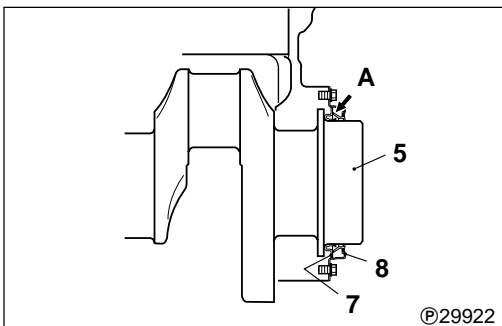
©29920



● Front Oil Seal

- The front oil seal 1 is mounted on the front case 2. Its lip A is in contact with the front oil seal slinger 3 for sealing.
- The front oil seal slinger 3 is fitted on the fan shaft 4.

©29921

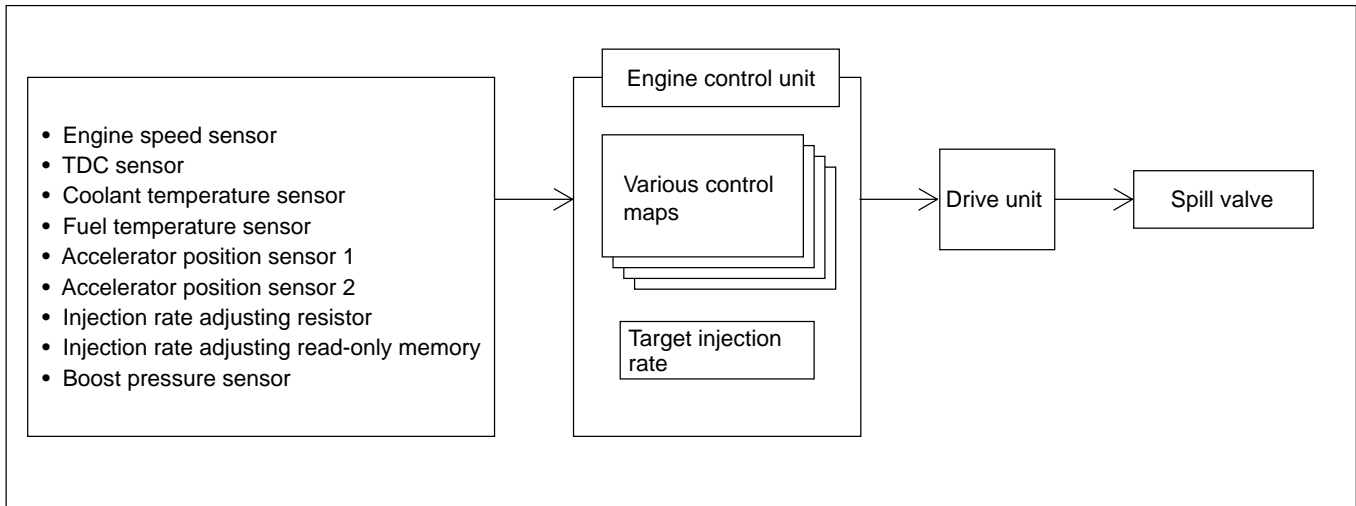


● Rear Oil Seal

- The rear oil seal 8 is mounted on the crankcase 6. Its lip A is in contact with the rear oil seal slinger 7 for sealing.
- The rear oil seal slinger 7 is press-fitted on the rear end of the crankshaft 5.

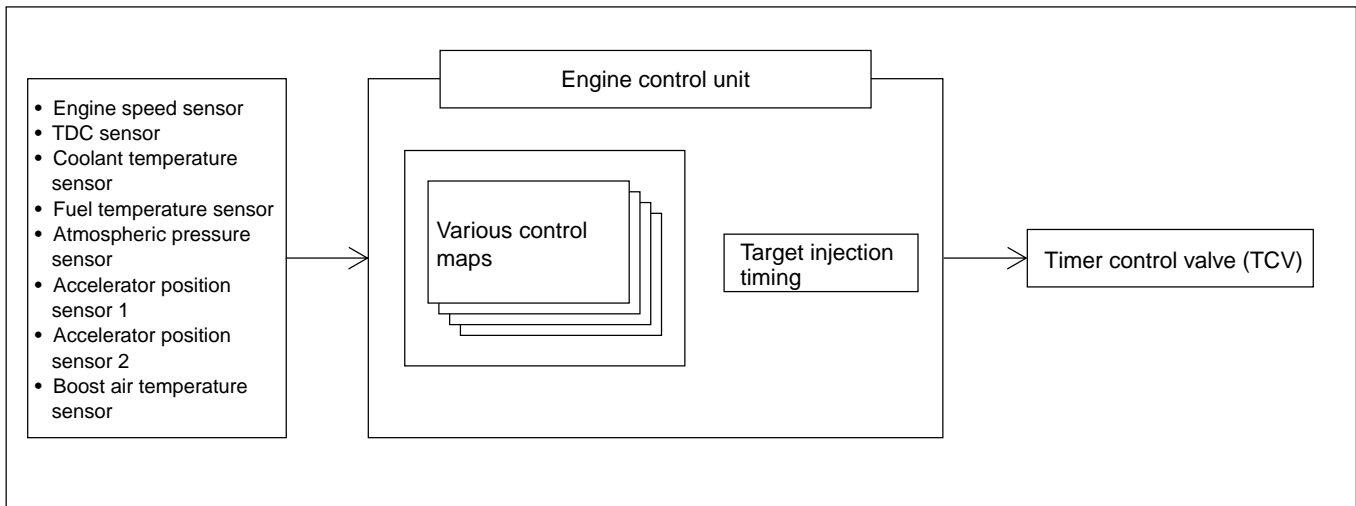
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2.2 Fuel Injection Rate Control

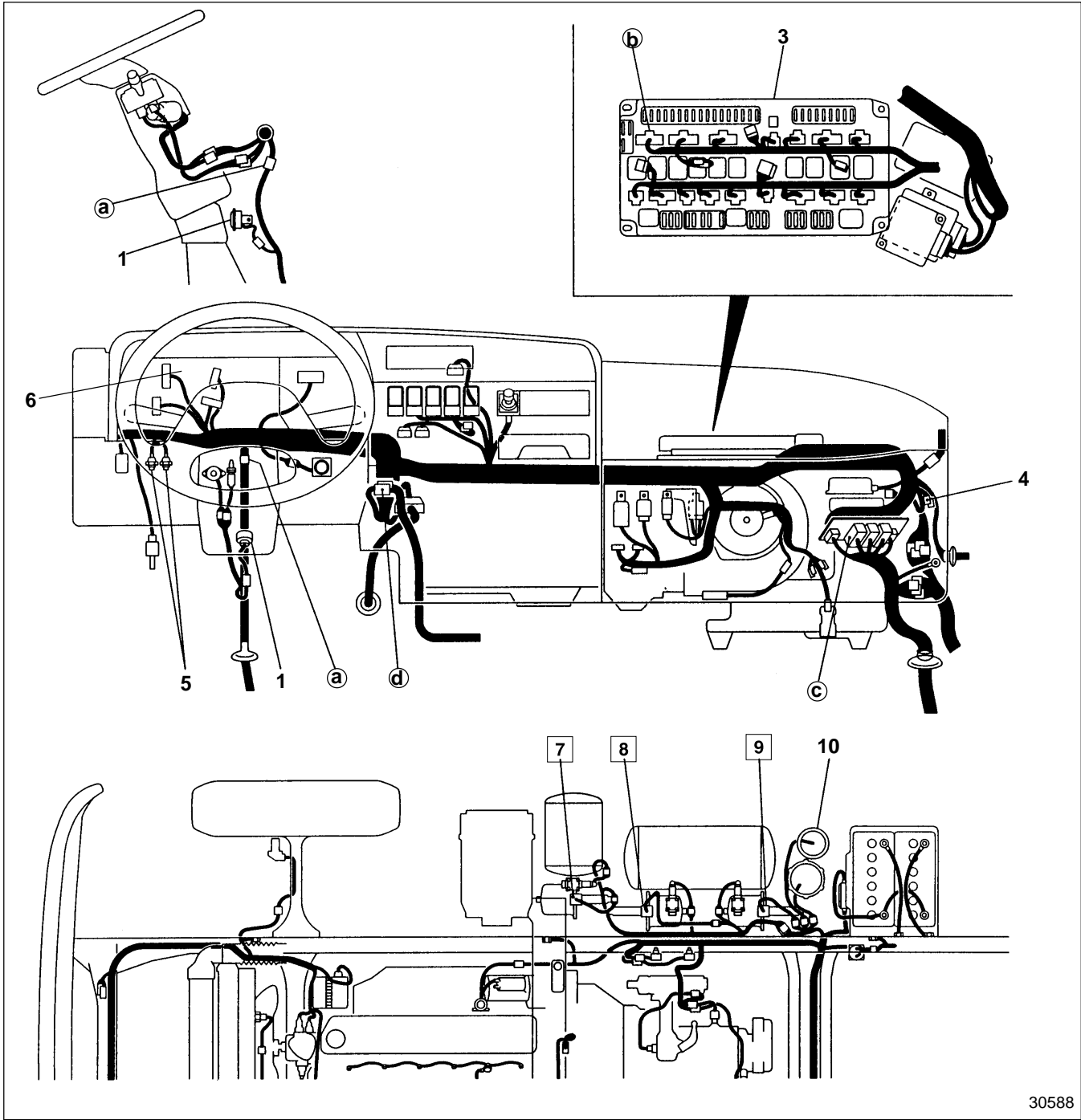


- During operation of the engine, the engine control unit (ECU) processes the individual information signals according to the control maps to select an appropriate injection mode from among the “basic”, “maximum” and “minimum”.
- After selection of the injection mode, the ECU calculates the minimum value to ensure that the maximum injection rate is not exceeded and determines the target injection rate.
- Once the target injection rate has been determined, the engine control unit outputs a signal to drive the spill valve.
- The signal to drive the spill valve is passed through the drive unit so that its responsiveness for high speed driving will be enhanced.
- The drive unit immediately converts the signal voltage delivered from the engine control unit to a high voltage.








2.3 Fuel Injection Timing Control

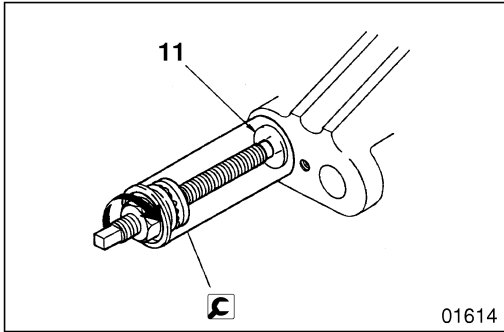


- During operation of the engine, the engine control unit (ECU) processes the individual information signals according to the control maps to calculate the target injection timing, and drives the timer control valve (TCV) in such a way that the real timing computed on the basis of the engine speed sensor and TDC sensor will match the target timing.
- Controls at the time of an engine start are achieved by the start compensation map contained in each control map.



30588

- 1 Warning buzzer  (606)
 - 2 Parking brake switch  (510)
 - 3 Relay and fuse box  (104)
 - 4 Diode unit
 - 5 Low air pressure switch  (515)
 - 6 Meter cluster  (401)
 - 7 Front brake booster stroke switch
 - 8 Rear brake booster stroke switch RH
 - 9 Rear brake booster stroke switch LH
 - 10 Brake fluid level switch  (515)
- : '96 Model Gr 54 (Pub No. TWME 9503-54)

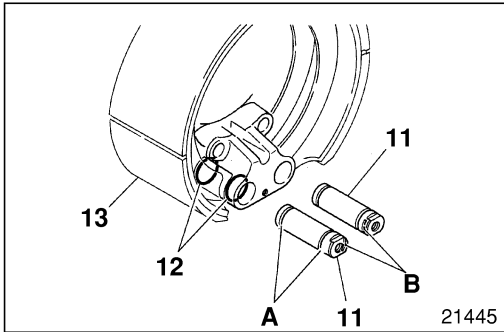


11 Anchor pin

[Removal]

C: Anchor pin puller

- Remove the anchor pin using an anchor pin puller as shown in the figure on the left.

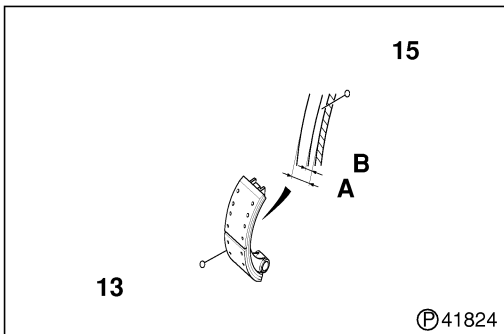


[Installation]

- Apply grease in the grease grooves **A** of anchor pin **11**.
- Install anchor pin **11** in the direction shown in Figure.
- B**: Groove installing lock plate

CAUTION ⚠

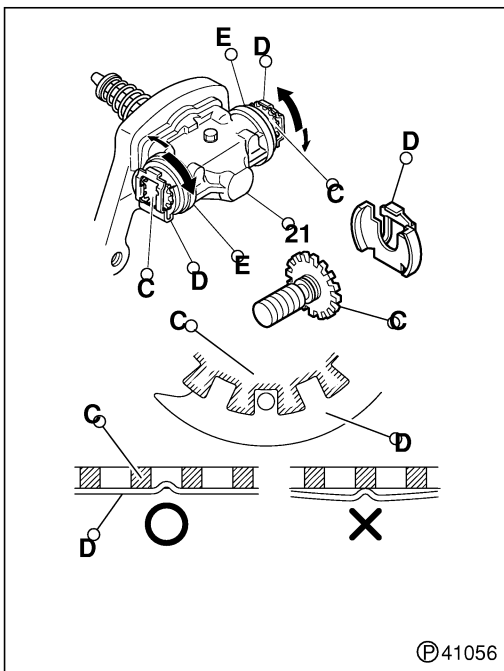
If anchor pin **11** is installed in the wrong direction of the anchor pin, O-ring **12** will be damaged; therefore, be sure to mount it as required.



13 Brake shoe assembly

[Inspection]

If the thickness **A** of brake lining **15** reaches below the limit **B**, replace the brake linings on the entire axle.



[Installation]

- Turn adjusting screw **C** of expander assembly **21** fully clockwise by hand.
(Return of a screwing portion of adjusting screw)
- Install clip **D** with the open side facing the drum. Turn adjusting screw **C** further clockwise to match the position if alignment is incorrect.

WARNING ⚠

- Be sure to apply grease appropriately on the contact part of adjusting screw **C** in boot **E**; otherwise, the auto adjuster may malfunction due to breakage of boot.

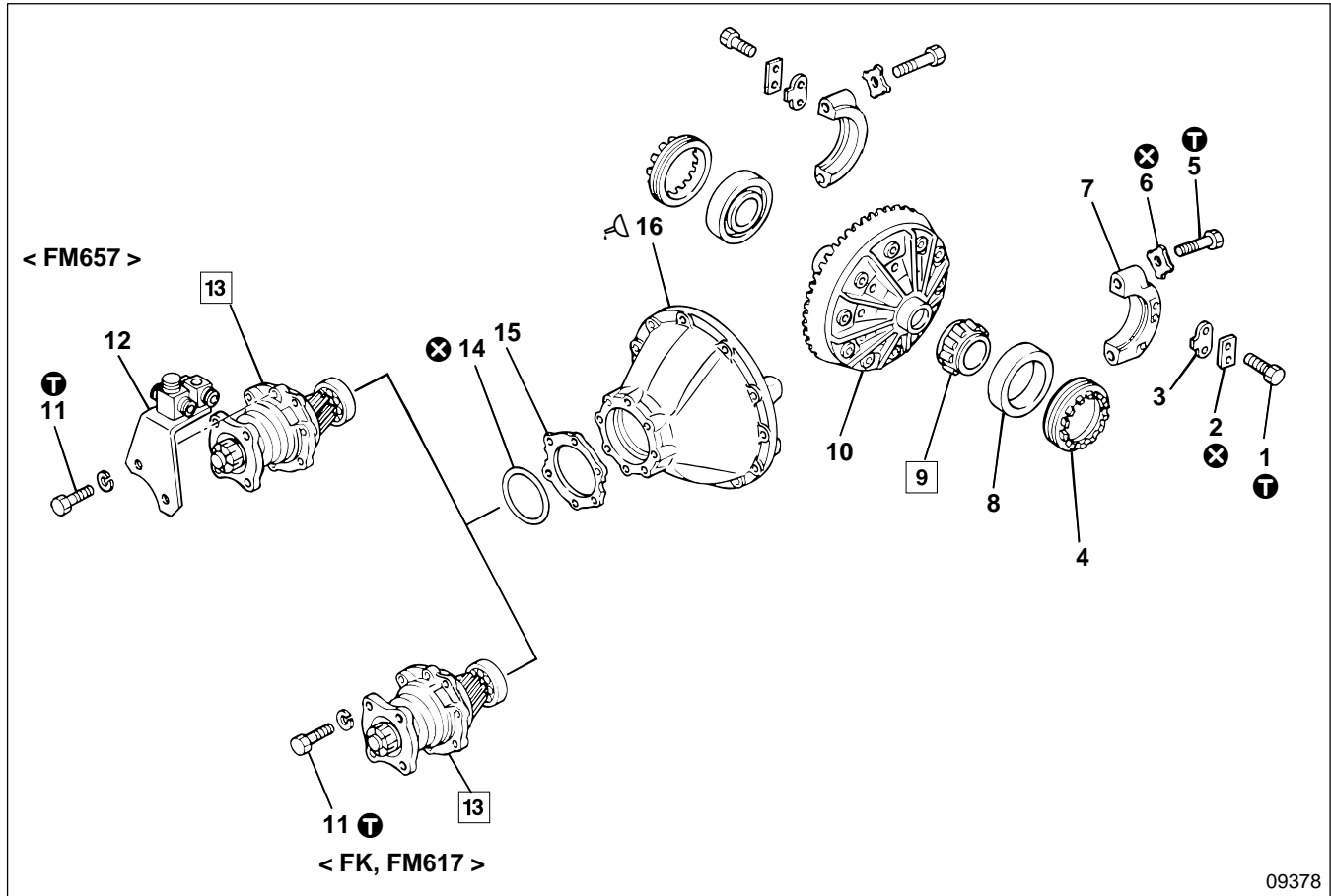
CAUTION ⚠

- Turn it slowly so that boot **E** is not jammed.
- Be sure to keep the convex part of clip **D** between teeth of adjusting screw **C** (2 points).

- If clip **D** is misaligned, rotate adjusting screw **C** counterclockwise two revolutions to align clip.

REDUCTION AND DIFFERENTIAL

Reduction and Differential Assembly



● Inspection before disassembly P27-29

● Work before disassembly P27-29

● Disassembly sequence

- | | | |
|-------------------|----------------------------------|----------------------------|
| 1 Bolt | 7 Bearing cap | 13 Pinion assembly P27-40 |
| 2 Lock seat | 8 Side bearing outer race | 14 O-ring < D050H > |
| 3 Lock pawl | 9 Side bearing inner race | 15 Shim |
| 4 Adjusting screw | 10 Differential assembly P27-36 | 16 Differential carrier |
| 5 Bolt | 11 Bolt | |
| 6 Lock plate | 12 T-connector < FM657 > | |

⊗ : Non-reusable parts

CAUTION

- Make sure you replace bearing caps 7, differential carrier 16 and bolt 5 as a differential carrier set.
- Make sure you replace the reduction gear of differential assembly 10 and the reduction pinion of pinion assembly 13 as a reduction gear set.
- Make sure you keep left and right side bearings 8, 9 separate after removal, and be careful not to mix them up when installing them.

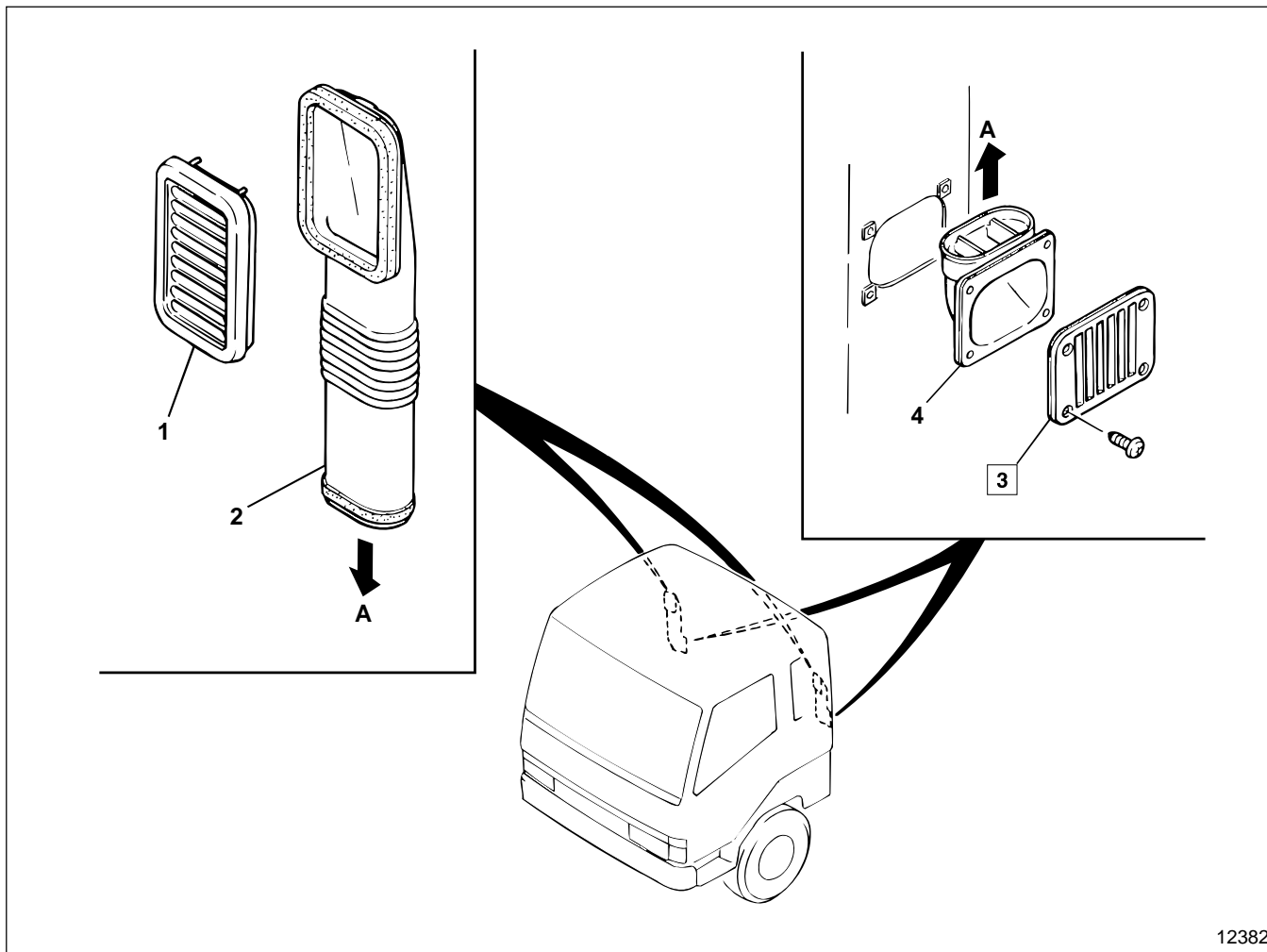
NOTE

Write down the thickness of shim 15 before disassembly to use it as reference when assembling.

● Assembly sequence

Follow the disassembly sequence in reverse.

● Inspection and adjustment after assembly P27-30



12382

● **Disassembly sequence**

- 1 Inside air outlet garnishment
- 2 Air outlet duct (Upper)

- 3 Outside air outlet garnishment
- 4 Air outlet duct (Lower)

NOTE

Remove inside air outlet garnishment 1 and air outlet duct 2 after removing the side trim. Gr 42

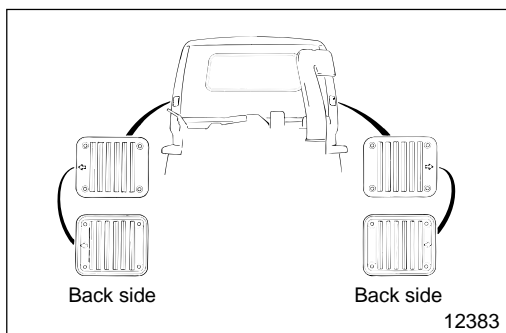
● **Assembly sequence**

Follow the disassembly sequence in reverse.

◆ **Service procedure**

3 Installation of outside air outlet garnishment

Install air outlet garnishment 3 in the direction as illustrated.



12383