

LUBRICATION

CONTENTS

GENERAL INFORMATION	1-1	OIL SCREEN	
In Order to Prevent Vehicles from Fire	1-1	<DIESEL-POWERED VEHICLES>	4
Engine Oils	1-1	ENGINE OIL COOLER	
SPECIFICATIONS	1-2	<1800D, 1800 DOHC, 2000 DIESEL>	5
General Specifications	1-2	ENGINE OIL COOLER <4WD>	5-1
Lubricants	1-2		
Sealants	1-2		
Torque Specifications	1-2		
SPECIAL TOOL	2		
SERVICE ADJUSTMENT PROCEDURES	2		
Engine Oil Replacement	2		
Oil Filter Replacement	2		
OIL SCREEN			
<PETROL-POWERED VEHICLES>	3		

GENERAL INFORMATION

IN ORDER TO PREVENT VEHICLES FROM FIRE

In order to maintain safety and quality of vehicles, it is necessary to use genuine parts and to install them according to workshop manual. Much care should be taken as the inferior parts or erroneous installation of parts specially related to electric equipments and fuel system will cause a fire to vehicles.

ENGINE OILS

HEALTH WARNING

Prolonged and repeated contact with mineral oil will result in the removal of natural fats from the skin, leading to dryness, irritation and dermatitis. In addition, used engine oil contains potentially harmful contaminants which may cause skin cancer. Adequate means of skin protection and washing facilities must be provided.

RECOMMENDED PRECAUTIONS

The most effective precaution is to adapt working practices which prevent, as far as practicable, the risk of skin contact with mineral oils, for example by using enclosed systems for handling used engine oil and by degreasing components, where practicable, before handling them.

Other precautions:

- Avoid prolonged and repeated contact with oils, particularly used engine oils.
- Wear protective clothing, including impervious gloves where practicable.
- Avoid contaminating clothes, particularly underpants, with oil.
- Do not put oily rags in pockets, the use of overalls without pockets will avoid this.
- Do not wear heavily soiled clothing and oil – impregnated footwear. Overalls must be cleaned regularly and kept separate from personal clothing.
- Where there is a risk of eye contact, eye protection should be worn, for example, chemical goggles or face shields; in addition an eye wash facility should be provided.
- Obtain first Aid treatment immediately for open cuts and wounds.
- Wash regularly with soap and water to ensure all oil is removed, especially before meals (skin cleansers and nail brushes will help). After cleaning, the application of preparations containing lanolin to replace the natural skin oils is advised.
- Do not use petrol, kerosine, diesel fuel, gas oil, thinners or solvents for cleaning skin.
- Use barrier creams, applying them before each work period, to help the removal of oil from the skin after work.
- If skin disorders develop, obtain medical advice without delay.

SPECIFICATIONS

GENERAL SPECIFICATIONS

E12CA--

Items	4D68
Engine oil cooler Performance	J/h (kcal/h, BTU/h) 11,721 x 10 ³ (2,800, 11,111)

LUBRICANTS

E12CD--

Items	Recommended lubricant	Quantity dm ³ (U.S. qts., Imp. qts.) [includes volume inside oil filter]
Engine oil (API classification)		
4G92, 4G93	SG	3.8 (4.0, 3.3)
4G13, 4G15	SG	3.3 (3.5, 2.9)
4D68	CD or higher	5.1 (5.4, 4.5)

SEALANTS

Items	Specified sealant	Remarks
Oil pan and cylinder block	MITSUBISHI GENUINE PART MD970389 or equivalent	Semi-drying sealant

TORQUE SPECIFICATIONS

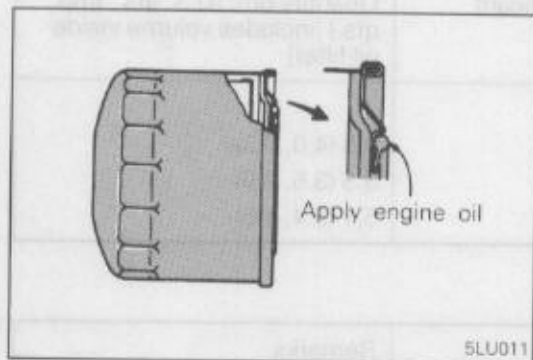
E12CC--

Item	Nm	kgm	ft.lbs.
Oil screen attaching bolts	15–22	1.5–2.2	11–16
Oil screen attaching nut	15–22	1.5–2.2	11–16
Oil pan mounting bolts	6–8	0.6–0.8	5–6
Drain plug	35–45	3.5–4.5	25–33
Bell housing cover attaching bolt	8–10	0.8–1.0	6–7
Engine oil cooler to engine oil feed hose and tube assembly	30–35	3.0–3.5	22–25
Engine oil cooler to engine oil return hose and tube assembly	30–35	3.0–3.5	22–25
Engine oil feed hose and tube assembly to engine	40–45	4.0–4.5	29–33
Engine oil return hose and tube assembly to engine	40–45	4.0–4.5	29–33
Battery holder	2–3	0.2–0.3	1.4–2.2

SPECIAL TOOL

E12CF..

Tool	Number	Name	Use
	MB991396	Oil filter wrench	Removal and installation of engine oil filter <4G92, 4G93>



SERVICE ADJUSTMENT PROCEDURES

E12FAAAa

ENGINE OIL REPLACEMENT

Refer to GROUP 11 – Service Adjustment Procedures.

OIL FILTER REPLACEMENT

E12FBAC

1. Remove the engine oil filler cap.
2. Remove the engine oil filter by using the oil filter wrench.
3. Clean the oil filter mounting surface of the front case.
4. Coat engine oil to the O-ring of new oil filter.
5. Screw in the oil filter until its O-ring seats on the flange surface, and then tighten one more turn using the special tool (MB991396).

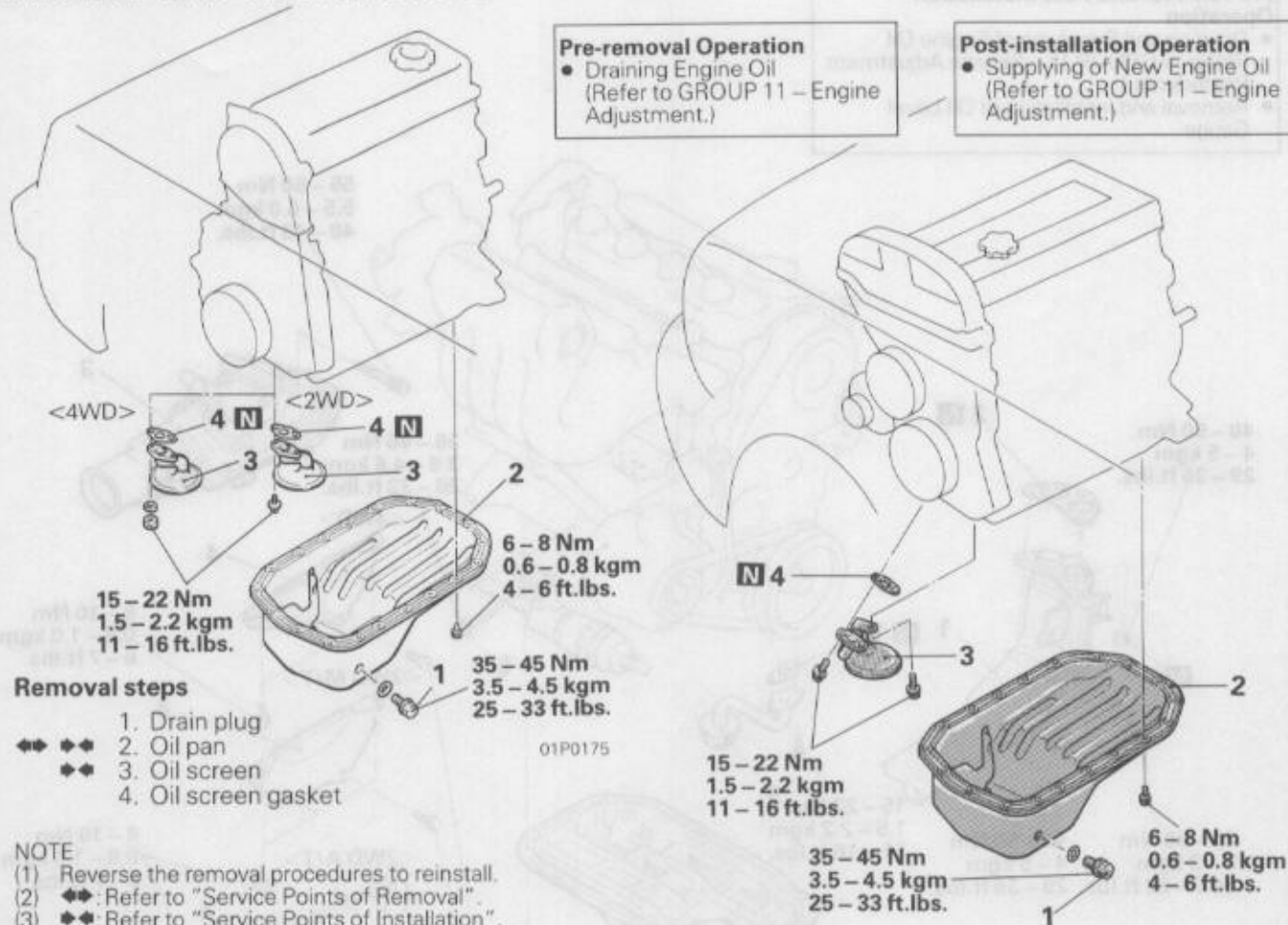
NOTE

The oil filter tightening torque is 12 – 16 Nm (1.2 – 1.6 kgm, 9 – 11 ft.lbs.).

6. Supply engine oil.
7. Start and run engine, check for engine oil leaks.
8. After stopping engine, check oil level and refill as necessary.

OIL SCREEN <PETROL-POWERED VEHICLES>

REMOVAL AND INSTALLATION



SERVICE POINT OF REMOVAL

01A0005

2. REMOVAL OF OIL PAN

E12NBAAa0

Refer to GROUP 11 – Oil Pan.

SERVICE POINTS OF INSTALLATION

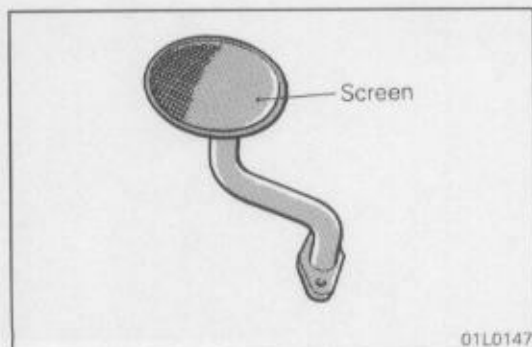
E12NCAAa0

3. INSTALLATION OF OIL SCREEN

Replace the screen if it is cracked or otherwise damaged; clean it if it is clogged or dirty.

2. INSTALLATION OF OIL PAN

Refer to GROUP 11 – Oil Pan.

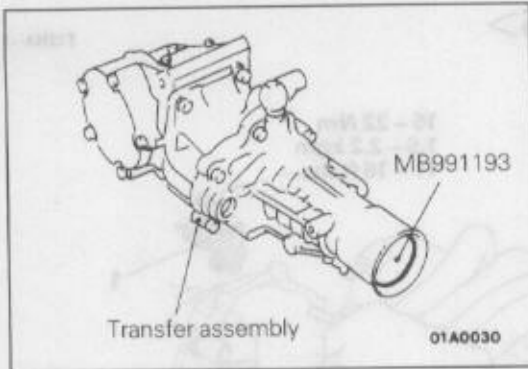


- Draining and Supplying of Engine Oil (Refer to GROUP 11 – Service Adjustment Procedures.)
- Removal and Installation of Oil Level Gauge



1. Front exhaust pipe
2. Gasket
3. Transfer assembly
4. Bell housing cover
5. Drive shaft center bearing mounting bolt
6. Drain plug
7. Drain plug gasket
8. Oil pan
9. Oil screen assembly
10. Gasket

(1) Reverse the removal procedures to reinstall.
(2) : Refer to "Service Points of Removal".
(3) : Refer to "Service Points of Installation".
(4) **N**: Non-reusable parts



SERVICE POINTS OF REMOVAL

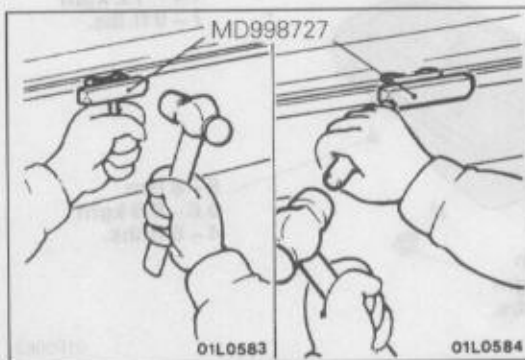
3. REMOVAL OF TRANSFER ASSEMBLY

- (1) With the propeller shaft still installed, remove the transfer mounting bolt.
- (2) Insert a flat-tipped screwdriver between the transfer and transmission to remove the transfer from the center shaft.
- (3) Remove the transfer from the propeller shaft.

Caution

Do not lower the rear end of the transfer, as this will cause the transfer oil to flow out.

- (4) After removing the transfer assembly, insert the special tool to prevent transfer oil from flowing out.
- (5) Suspend the propeller shaft from the vehicle body with wire, etc.

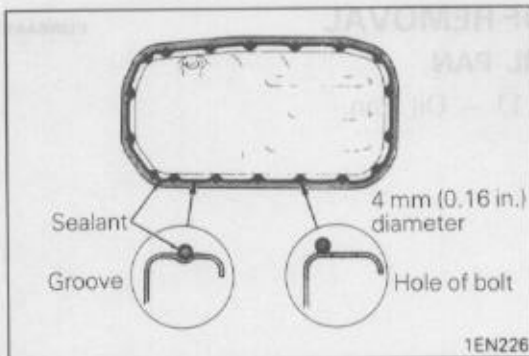


8. REMOVAL OF OIL PAN

After removing the oil pan mounting bolts and nuts, remove the oil pan with the special tool and a brass bar.

Caution

Perform this slowly to avoid deformation of the oil pan flange.



SERVICE POINTS OF INSTALLATION

8. INSTALLATION OF OIL PAN

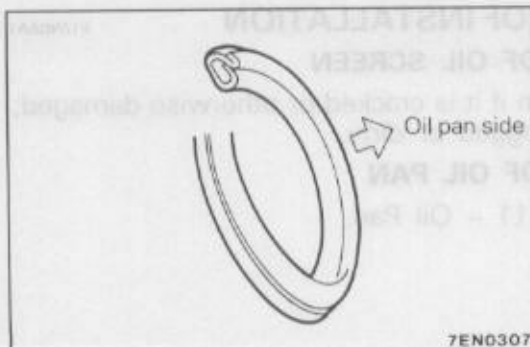
- (1) Apply the specified sealant around the surface of oil pan as specified in illustration.

**Specified sealant: MITSUBISHI GENUINE PART
No. MD970389 or equivalent**

- (2) Assemble oil pan to cylinder block within 15 minutes after applying the sealant.

7. INSTALLATION OF DRAIN PLUG GASKET

Install the drain plug gasket in the direction so that it faces as shown in the illustration.



OIL SCREEN <DIESEL-POWERED VEHICLES>

E12NA-1

REMOVAL AND INSTALLATION

Pre-removal Operation

- Removal of Under Cover (L.H.)
- Draining Engine Oil (Refer to GROUP 11 – Engine Adjustment.)
- Removal of Oil Level Gauge

Post-installation Operation

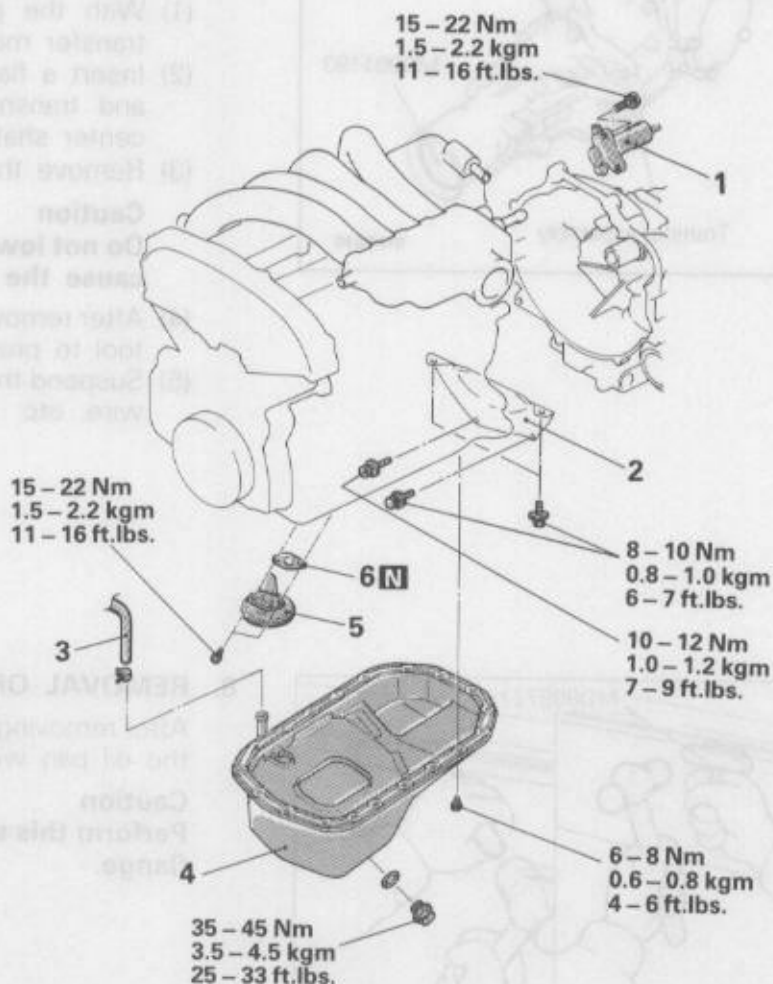
- Supplying of New Engine Oil (Refer to GROUP 11 – Engine Adjustment.)
- Installation of Oil Level Gauge
- Installation of Under Cover (L.H.)

Removal steps

1. Clutch release cylinder
2. Bell housing cover
3. Oil hose
4. Oil pan
5. Oil screen
6. Oil screen gasket

NOTE

- (1) Reverse the removal procedures to reinstall.
- (2) ♦♦♦: Refer to "Service Points of Removal".
- (3) ♦♦♦: Refer to "Service Points of Installation".
- (4) [N]: Non-reusable parts



01P0063

SERVICE POINT OF REMOVAL

E12NBAA1

4. REMOVAL OF OIL PAN

Refer to GROUP 11 – Oil Pan.

SERVICE POINTS OF INSTALLATION

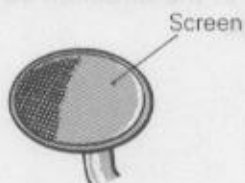
E12NCAA1

5. INSTALLATION OF OIL SCREEN

Replace the screen if it is cracked or otherwise damaged; clean it if it is clogged or dirty.

4. INSTALLATION OF OIL PAN

Refer to GROUP 11 – Oil Pan.



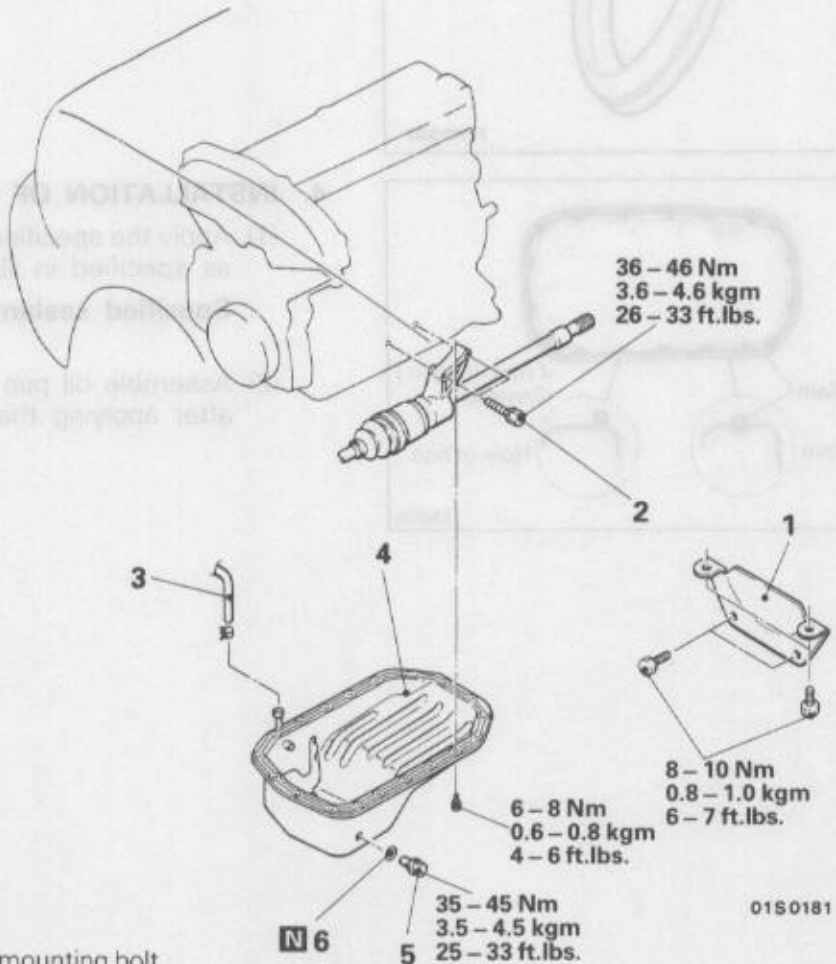
01L0147

<4D68>

E11KA-

Pre-removal and Post-installation Operation

- Draining and Supplying of Engine Oil
- Removal and Installation of Oil Level Gauge
- Removal and Installation of Front Exhaust Pipe (Refer to GROUP 15-Exhaust Pipe and Muffler.)

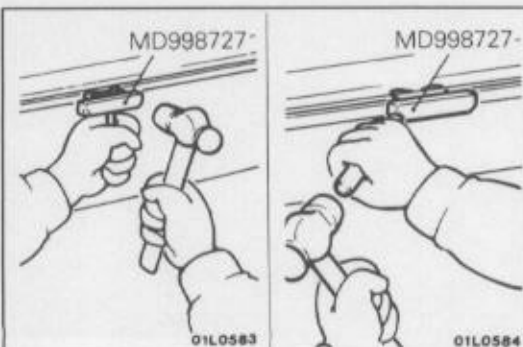
**Removal steps**

1. Bell housing cover
2. Drive shaft center bearing mounting bolt
3. Oil return hose
4. Oil pan
5. Drain plug
6. Gasket

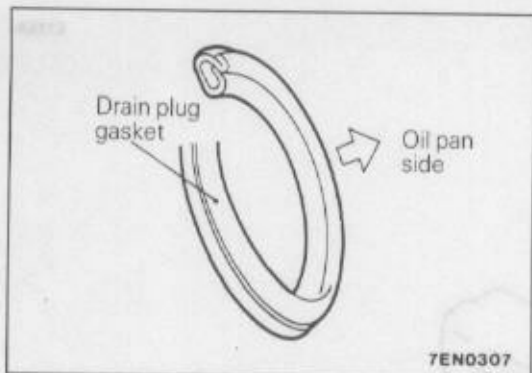
NOTE

- (1) Reverse the removal procedures to reinstall.
- (2) ♦♦: Refer to "Service Points of Removal".
- (3) ♦♦: Refer to "Service Points of Installation".
- (4) **N**: Non-reusable parts

01S0181

**SERVICE POINTS OF REMOVAL****4. REMOVAL OF OIL PAN**

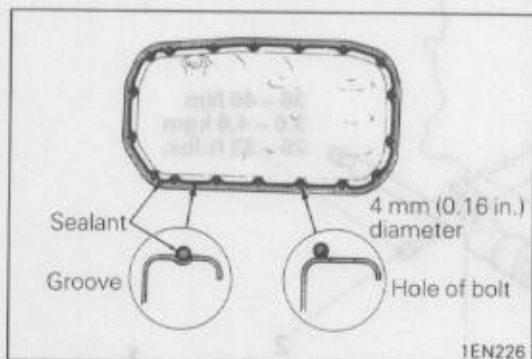
E11KBBP



SERVICE POINTS OF INSTALLATION

6. INSTALLATION OF GASKET

Replace the gasket with a new gasket, and install it in the direction shown in the illustration.



4. INSTALLATION OF OIL PAN

- (1) Apply the specified sealant around the surface of oil pan as specified in illustration.

Specified sealant: MITSUBISHI GENUINE PART No. MD970389 or equivalent

- (2) Assemble oil pan to cylinder block within 15 minutes after applying the sealant.

ENGINE OIL COOLER <1800D, 1800 DOHC, 2000 Diesel>

E12JA--

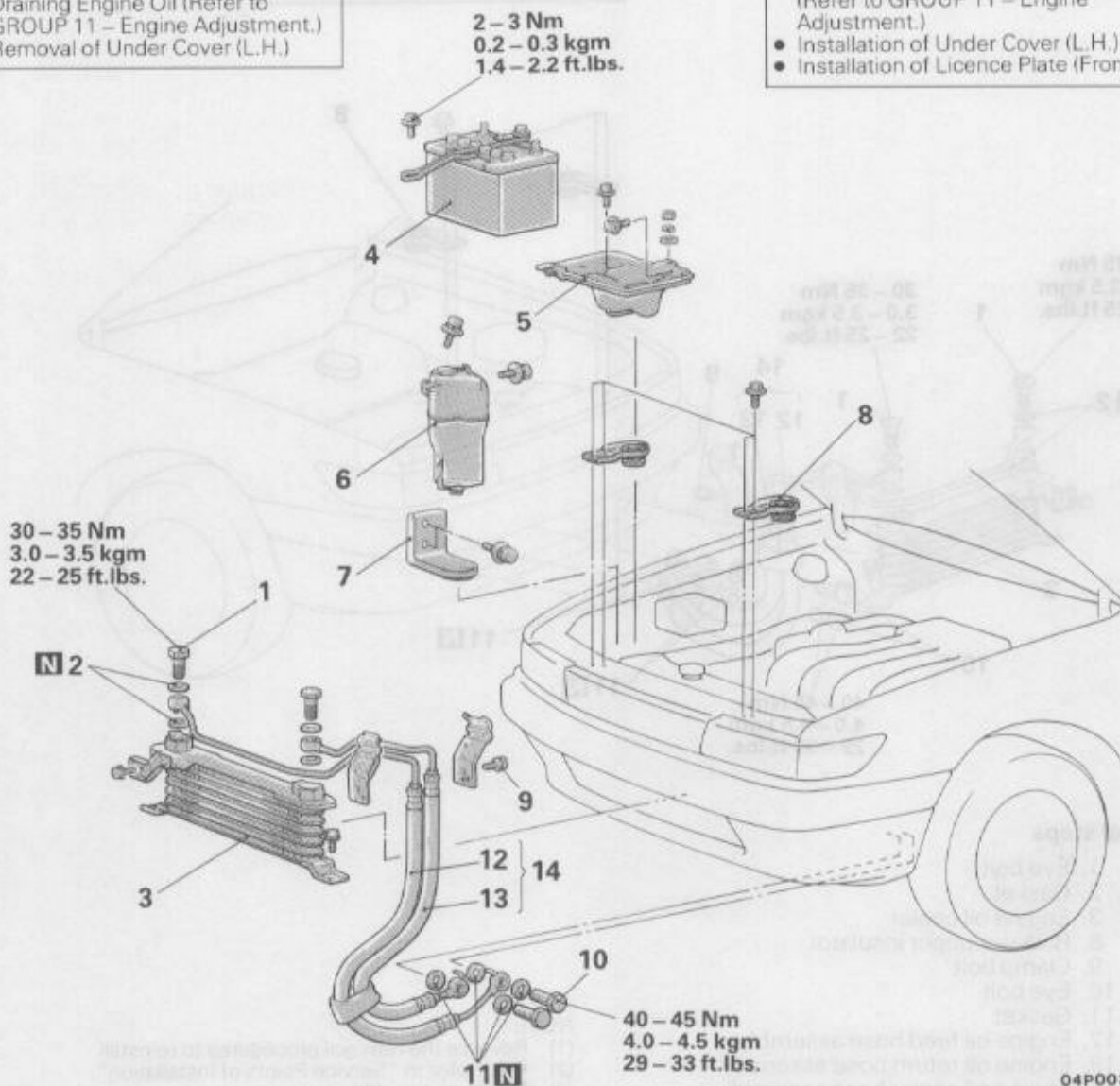
REMOVAL AND INSTALLATION

Pre-removal Operation

- Removal of Licence Plate (Front)
- Draining Engine Oil (Refer to GROUP 11 – Engine Adjustment.)
- Removal of Under Cover (L.H.)

Post-installation Operation

- Supplying Engine Oil (Refer to GROUP 11 – Engine Adjustment.)
- Installation of Under Cover (L.H.)
- Installation of Licence Plate (Front)



04P0035

Removal steps

1. Eye bolt
2. Gasket
- ◆◆ 3. Engine oil cooler
4. Battery
5. Battery tray
6. Washer tank
7. Washer tank bracket
8. Radiator upper insulator
- ◆◆ 9. Clamp bolt
10. Eye bolt

11. Gasket
12. Engine oil feed hose assembly
13. Engine oil return hose assembly
- ◆◆ 14. Engine oil cooler hose assembly

NOTE

- (1) Reverse the removal procedures to reinstall.
- (2) ◆◆: Refer to "Service Points of Removal".
- (3) ◆◆: Refer to "Service Points of Installation".
- (4) N: Non-reusable parts

ENGINE OIL COOLER <4WD>

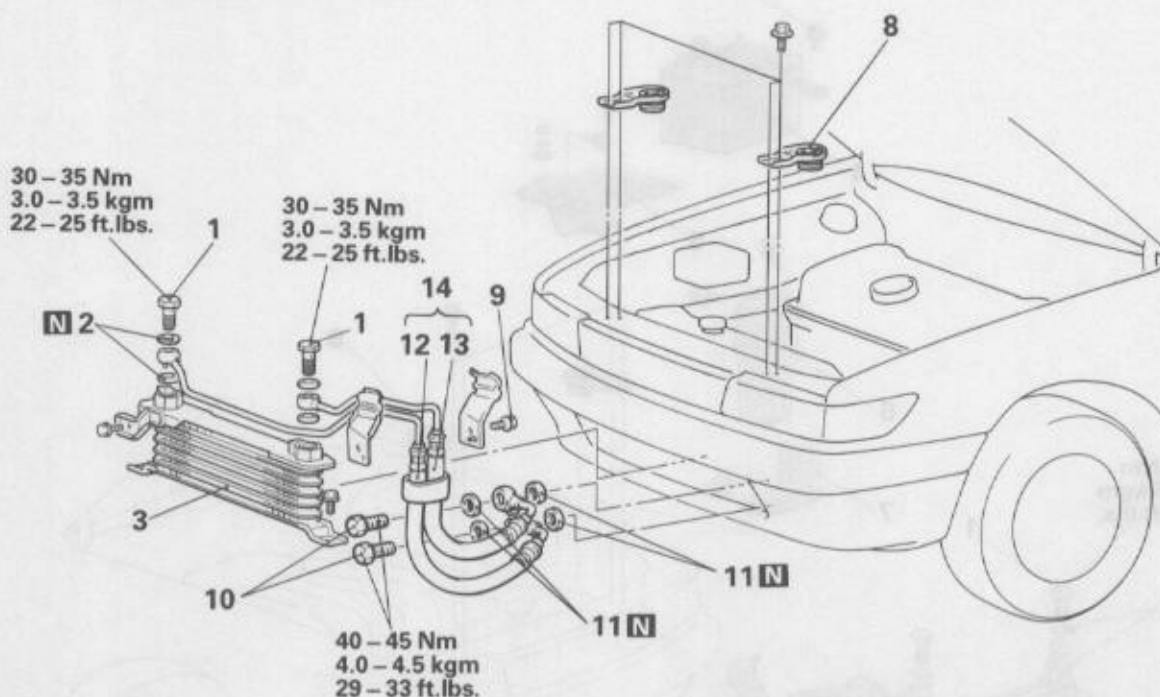
REMOVAL AND INSTALLATION

Pre-removal Operation

- Removal of Licence Plate (Front)
- Draining Engine Oil
(Refer to GROUP 11 – Engine Adjustment.)
- Removal of Under Cover (L.H.)

Post-installation Operation

- Supplying Engine Oil
(Refer to GROUP 11 – Engine Adjustment.)
- Installation of Under Cover (L.H.)
- Installation of Licence Plate (Front)

**Removal steps**

1. Eye bolt
2. Gasket
- ♦♦ 3. Engine oil cooler
8. Radiator upper insulator
9. Clamp bolt
10. Eye bolt
11. Gasket
12. Engine oil feed hose assembly
13. Engine oil return hose assembly
- ♦♦ 14. Engine oil cooler hose assembly

NOTE

- (1) Reverse the removal procedures to reinstall.
- (2) ♦♦: Refer to "Service Points of Installation".
- (3) **N**: Non-reusable parts

04P0061