

B5 LUBRICATION SYSTEM

1KR-----	B5 - 1
LUBRICATION SYSTEM-----	B5 - 1
FUNCTION CHECK-----	B5 - 1
ARTICLES TO BE PREPARED-----	B5 - 1
ENGINE OIL-----	B5 - 3
REPLACEMENT-----	B5 - 3
OIL FILTER-----	B5 - 4
REPLACEMENT-----	B5 - 4
OIL PUMP-----	B5 - 6
REPLACEMENT-----	B5 - 6
CRANKSHAFT FRONT OIL SEAL-----	B5 - 7
REMOVAL AND INSTALLATION-----	B5 - 7
OIL PAN-----	B5 - 9
REMOVAL AND INSTALLATION-----	B5 - 9
K3-----	B5 - 12
LUBRICATION SYSTEM-----	B5 - 12
FUNCTION CHECK-----	B5 - 12
ARTICLES TO BE PREPARED-----	B5 - 12
ENGINE OIL-----	B5 - 14
REPLACEMENT-----	B5 - 14
OIL FILTER-----	B5 - 15
REPLACEMENT-----	B5 - 15
OIL PUMP-----	B5 - 18
REMOVAL AND INSTALLATION-----	B5 - 18
CRANKSHAFT FRONT OIL SEAL-----	B5 - 21
REMOVAL AND INSTALLATION-----	B5 - 21
OIL PAN-----	B5 - 23
REMOVAL AND INSTALLATION-----	B5 - 23

1KR 1 LUBRICATION SYSTEM

1-1 FUNCTION CHECK

WARNING

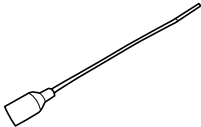
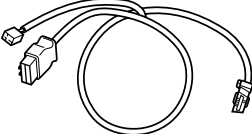
- Never carry out the operation while the engine and engine oil are still hot, for there are hazard potentials for getting scald.

1-2 ARTICLES TO BE PREPARED

Instrument

Tachometer, Oil pressure gauge, Torque wrench

SST

Shape	Part No.	Part name
	09991-87402-000	Wire, tacho-pulse pick up
	09991-87404-000 (09991-87401-000)	Wire, engine control system inspection

Lubricant, adhesive, others

Three Bond1104

1-2-1 OIL PRESSURE

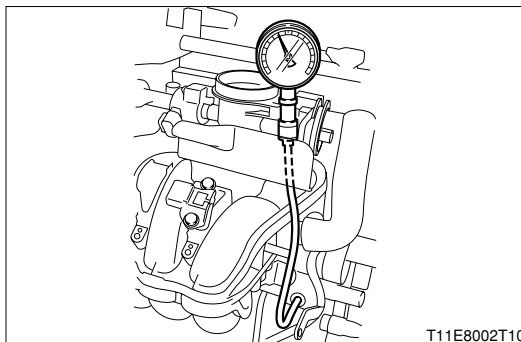
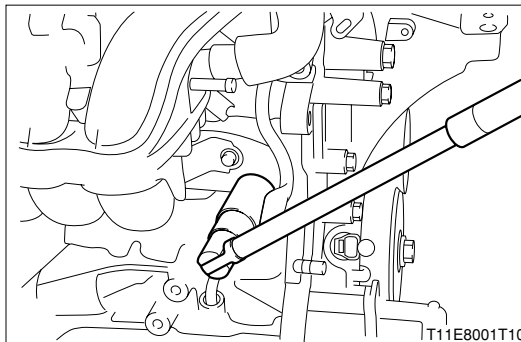
1. Check the engine oil amount.

Refer to Page B1-3.

2. Remove the engine oil pressure switch.

- (1) Disconnect the connector for the engine oil pressure switch.
- (2) Remove the engine oil pressure switch.

3. Install the oil pressure gauge (Thread diameter PT1/8).



4. Install the engine tachometer.

- (1) Install an engine tachometer to the terminal REV of the DLC, using the SST.

SST: 09991-87402-000
09991-87404-000

5. Warm up the engine.

6. Measure the engine oil pressure.

7. Start the engine and measure the pressure at each engine speed.

SPECIFIED VALUE: At 750rpm
30kPa or more
{0.3kgf/cm² or more}
At 3000rpm
200kPa or more
{2.0kg/cm² or more}

8. Remove the oil pressure gauge (Thread diameter PT1/8).

9. Install the engine oil pressure switch.

- (1) Clean the threaded portion of the oil pressure switch and switch attaching section of the cylinder block.
(2) Apply sealing material to the threaded portion of the oil pressure switch.

ADHESIVE: Three Bond1104

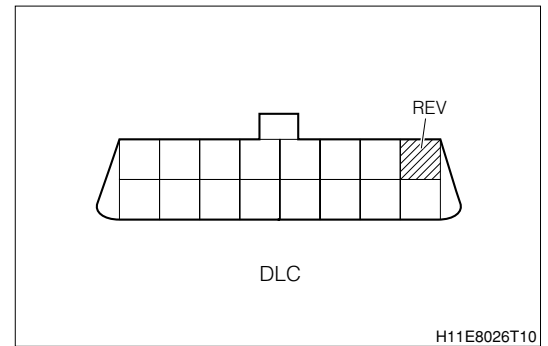
- (3) Install the oil pressure switch.

TIGHTENING TORQUE: $15 \pm 4.5 \text{ N} \cdot \text{m}$
{ $153 \pm 46 \text{ kgf} \cdot \text{cm}$ }

- (4) Connect the connector for the engine oil pressure switch.

10. Remove the engine tachometer.

11. Start the engine and check the engine oil pressure switch attaching section for oil leakage.



2 ENGINE OIL

2-1 REPLACEMENT

WARNING

- Never carry out the operation while the engine and engine oil are still hot, for there are hazard potentials for getting scald.

2-1-1 ARTICLES TO BE PREPARED

Lubricant, adhesive, others

Engine oil 0W-20(API Grade SG or higher), Engine oil 5W-30(API Grade SG or higher)
--

2-1-2 REPLACING PROCEDURE

1. Remove the oil filler cap.
2. Drain the engine oil by removing the drain plug of the oil pan.
3. Install the drain plug with a new gasket interposed.

TIGHTENING TORQUE: $29.5 \pm 5.9 \text{ N} \cdot \text{m}$ { $301 \pm 60 \text{ kgf} \cdot \text{cm}$ }

4. Fill engine oil.

NOTE

- About 3.1 ℓ (With oil filter)

LUBRICANT: Engine oil 0W-20(API Grade SG or higher)
Engine oil 5W-30(API Grade SG or higher)

5. Install the oil filler cap.
6. Ensure that there is no oil leakage by operating the engine for three minutes or more.
7. Check the oil level.

Refer to Page B1-3.

3 OIL FILTER

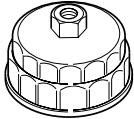
3-1 REPLACEMENT

WARNING

- Never carry out the operation while the engine and engine oil are still hot, for there are hazard potentials for getting scald.

3-1-1 ARTICLES TO BE PREPARED

SST

Shape	Part No.	Part name
	09228-87201-000	Wrench oil filter

Lubricant, adhesive, others

Vinyl hose, Engine oil

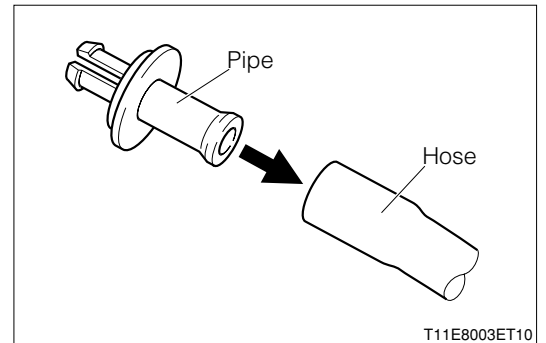
3-1-2 REPLACEMENT PROCEDURE

1. Remove the oil filter element.

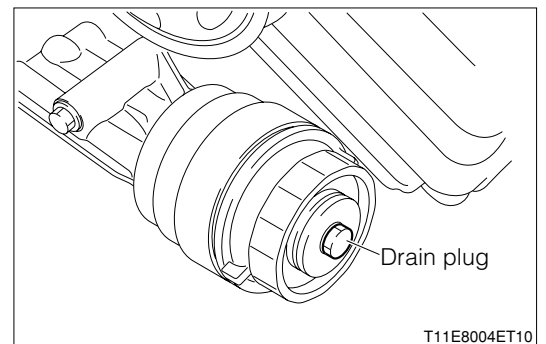
- (1) Connect the hose to the supplied drain pipes.

NOTE

- Use a 15mm hose.



- (2) Remove the oil filter drain plug.



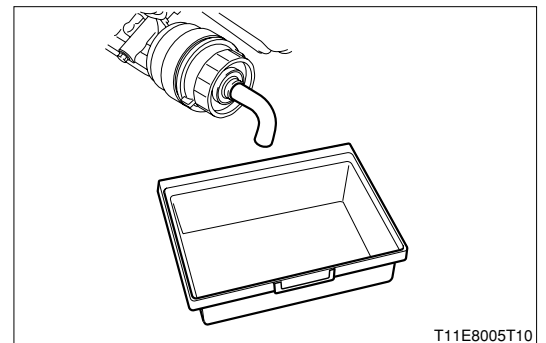
- (3) Insert the pipes with the hose attached.

CAUTION

- Insert the hose under a condition that the O-ring (For drain plugs) is attached to the oil filter cap side.

NOTE

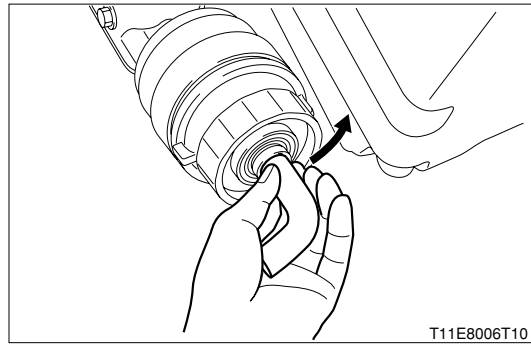
- Since the oil will be drained through the hose, put the hose end to a tray in advance.



(4) Ensure that the oil has been drained. Then, remove the pipe and O-ring (For drain plugs).

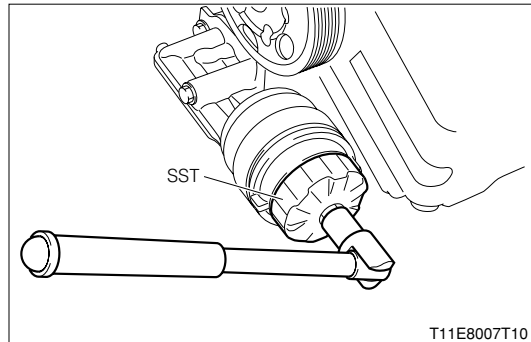
CAUTION

- During the removal, be sure to bend the pipe to the side.



(5) Remove the oil filter cap, using the SST.

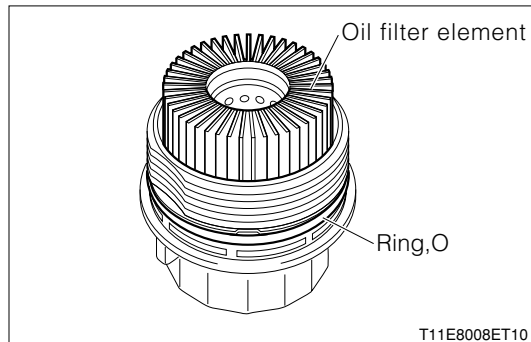
SST: 09228-87201-000



(6) Remove the oil filter element and O-ring (For caps) from the oil filter cap.

CAUTION

- To avoid scratching the O-ring groove, remove the O-ring (For caps) by hand without using any tools.



2. Install the oil filter element.

(1) Clean the inside section, threaded portion and O-ring groove section of the oil filter cap, using brake cleaner.

(2) Apply a small amount of engine oil to a new O-ring (For caps) and install the oil filter cap.

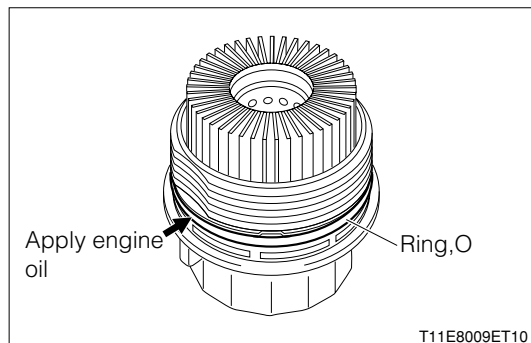
LUBRICANT: Engine oil

CAUTION

- Install the oil filter cap, being very careful not to damage the O-ring.
- (3) Set a new oil filter element to the oil filter cap.
- (4) Remove any smear or foreign matters from the installation surface and inside section on the engine side.
- (5) Again, apply a small amount of engine oil to the O-ring (For caps) and install the oil filter cap.

CAUTION

- Care must be exercised so that the O-ring (For caps) may not be caught-in.



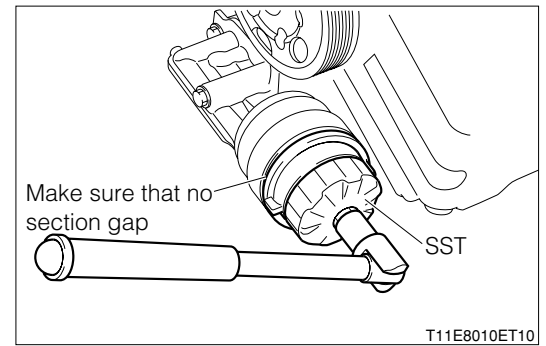
(6) Tighten the oil filter cap, using the SST.

SST: 09228-87201-000

TIGHTENING TORQUE: $25.0 \pm 5.0 \text{ N} \cdot \text{m}$
 $\{255 \pm 51 \text{ kgf} \cdot \text{cm}\}$

CAUTION

- After tightening the oil filter cap, ensure that there is no gap.



(7) Apply a small amount of engine oil to a new O-ring (For drain plugs) and install it to the oil filter cap.

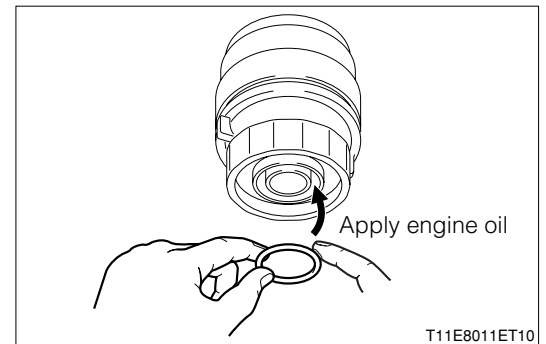
(8) Remove the smear and foreign matters from the installation surface.

(9) Install the oil filter drain plug to the oil filter cap.

TIGHTENING TORQUE: $12.5 \pm 2.5 \text{ N} \cdot \text{m}$
 $\{128 \pm 26 \text{ kgf} \cdot \text{cm}\}$

CAUTION

- Care must be exercised so that the O-ring (For caps) may not be caught-in.



3.Replenish engine oil.

Refer to Page B5-3.

4.Oil leakage check

(1) Start the engine. Ensure that there is no oil leakage form the joint sections of the oil filter cap and oil filter drain plugs.

4 OIL PUMP

4-1 REPLACEMENT

1.The oil pump is built in the timing chain cover Ay. Therefore, replace the timing chain cover Ay at the time of the replacement.


Refer to Page B2-5.

5 CRANKSHAFT FRONT OIL SEAL

5-1 REMOVAL AND INSTALLATION

5-1-1 ARTICLES TO BE PREPARED

SST

Shape	Part No.	Part name
	09223-87202-000	Replacer,crankshaft front oil seal

Instrument

Torque wrench

Lubricant,adhesive,others

Engine oil

5-1-2 OPERATION BEFORE REMOVAL

1.Drain the engine oil.

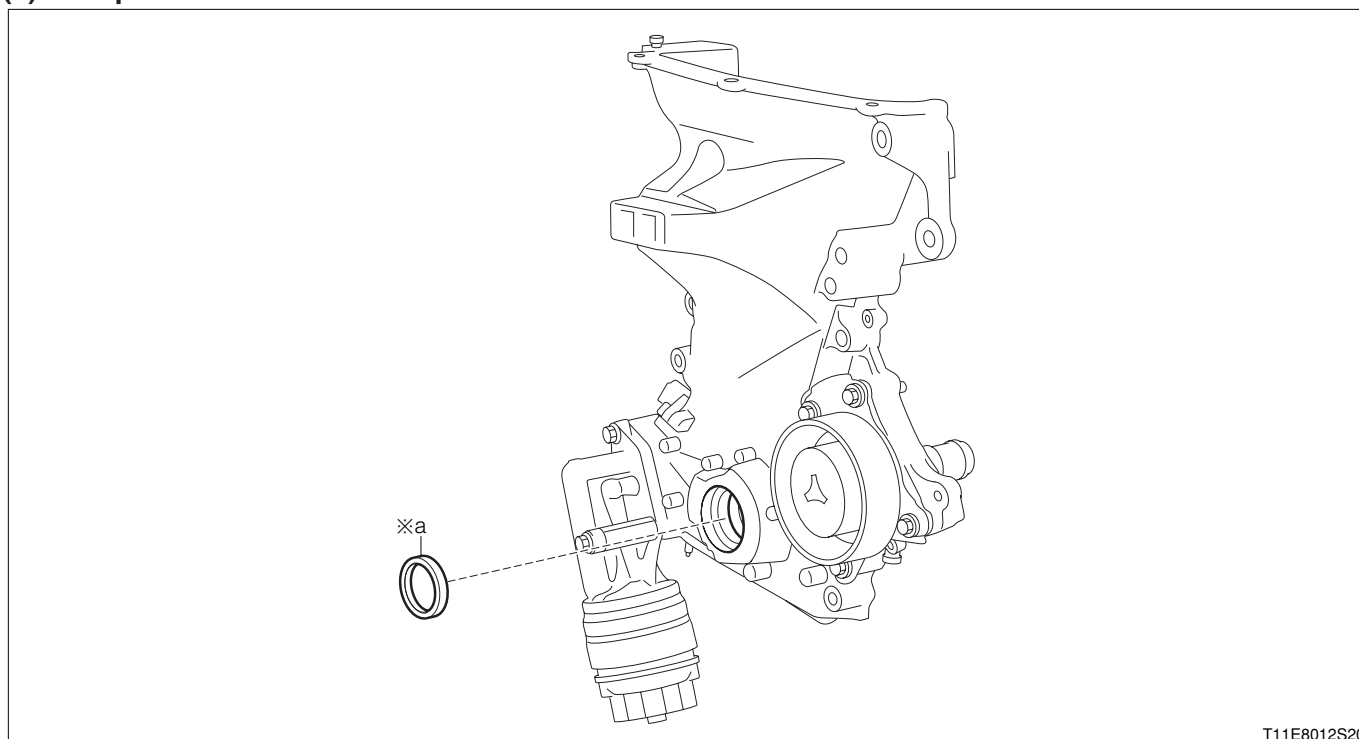
Refer to Page B5-3.

2.Remove the crankshaft pulley Ay.

Refer to Page B2-5.

5-1-3 REMOVAL AND INSTALLATION PROCEDURES

(1) Components



T11E8012S20

※:Non - reusable parts

(2) Removal and installation procedures

▼ ▲ 1 a Seal, type T oil

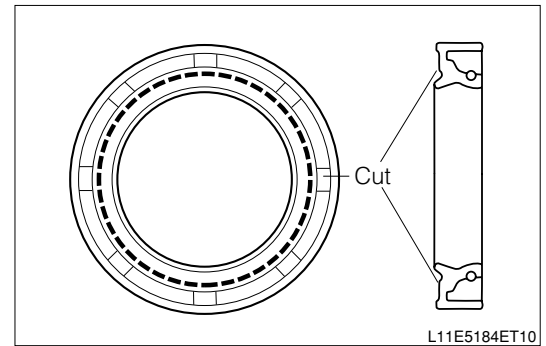
5-1-4 POINTS OF REMOVAL**(1) Seal, type T oil**

1. Cut the lip section of the seal by a cutter, etc. Then, remove the seal by prying it by a screwdriver, etc.

CAUTION

- Wind the screwdriver with a tape, etc. to prevent the surroundings from being damaged.

2. After removing the seal, ensure that there is no scratch on the chamfering section of the crankshaft Ay. (If there is any scratch, repair it with sand paper #400.)

**5-1-5 POINTS OF INSTALLATION****(1) Seal, type T oil**

1. Install the seal, following the procedure given below.
 - (1) Apply engine oil to the lip section of the seal.

LUBRICANT: Engine oil

- (2) Drive in the seal vertically, using the SST.

SPECIFIED VALUE: Press-fitting amount

Protruding amount from end surface
of chain cover Ay

Within 0.5mm

Press-fitting depth from end surface
of chain cover Ay

Within 1mm

SST: 09223-87202-000

5-1-6 OPERATION AFTER INSTALLATION

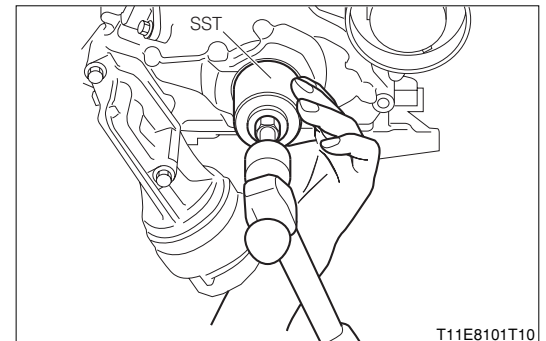
1. Install the crankshaft pulley Ay.

Refer to Page B2-5.

2. Fill engine oil.

Refer to Page B5-3.

3. Start the engine and ensure that there is no oil leakage from the type T oil seal.



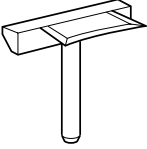
6 OIL PAN

6-1 REMOVAL AND INSTALLATION

WARNING

- Never carry out the operation while the engine and engine oil are still hot, for there are hazard potentials for getting scald.

SST

Shape	Part No.	Part name
	09032-00100-000	Cutter,oil pan seal

Instrument

Torque wrench

Lubricant,adhesive,others

Three Bond1280E,Engine oil

6-1-1 OPERATION BEFORE REMOVAL

1.Drain the engine oil by removing the drain plug and gasket.

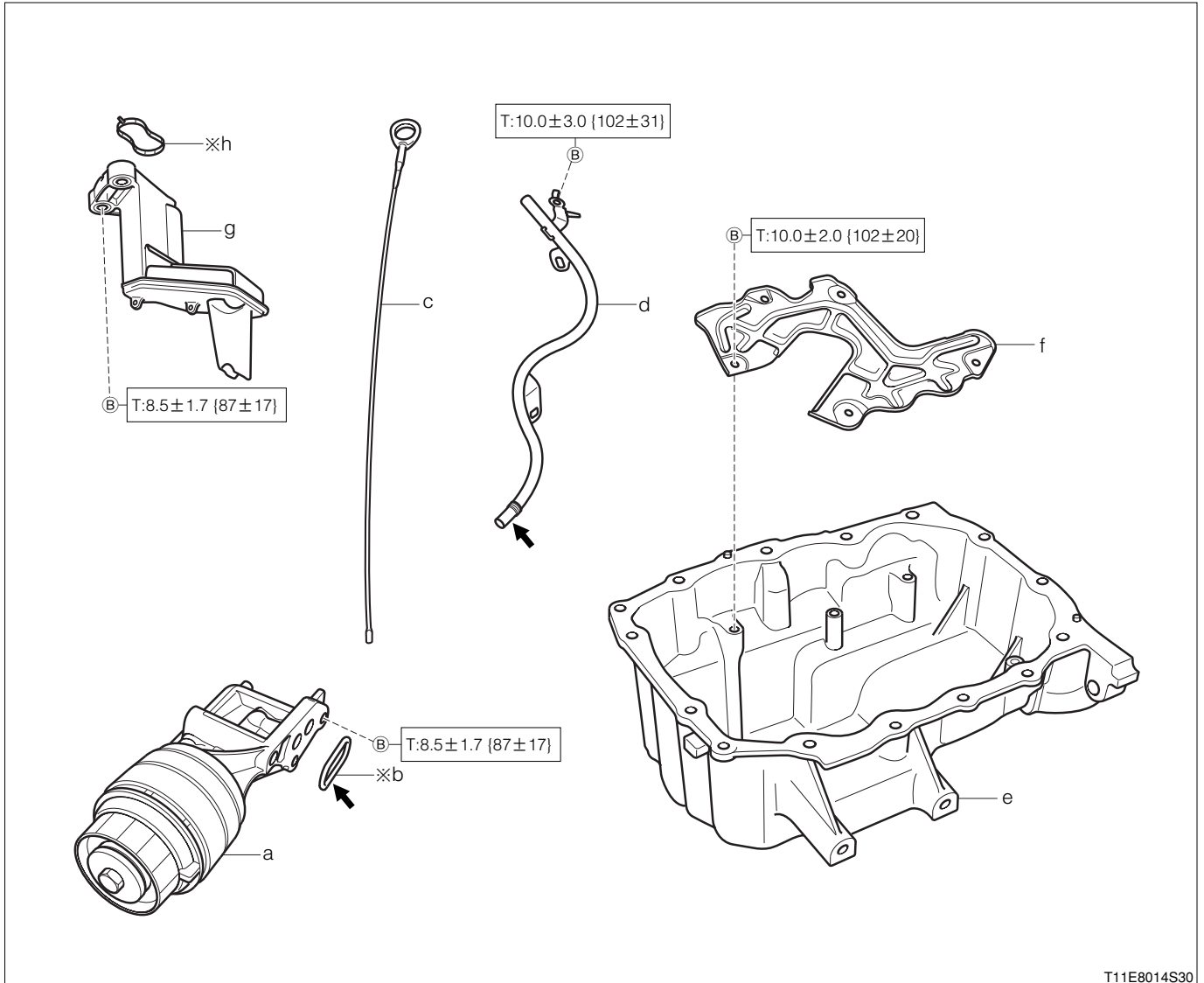
Refer to Page B5-3.

2.Remove the front exhaust pipe Ay.

Refer to Page B4-3.

6-1-2 REMOVAL AND INSTALLATION PROCEDURES

(1) Components



T11E8014S30

➔: Engine oil
 Unit: N·m{kgf·cm}
 ※: Non-reusable parts

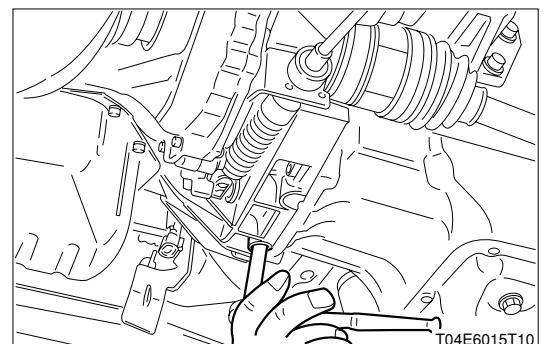
(2) Removal and installation procedures

- | | | | | | |
|-------|---|----------------------------|---|---|-----------------------|
| 1 | a | Oil filter Ay with bracket | 6 | f | Plate, oil pan baffle |
| 2 | b | Gasket, oil filter | 7 | g | Strainer S/A, oil |
| 3 | c | Gauge Ay, oil level | 8 | h | Gasket, oil strainer |
| 4 | d | Guide, oil level gage | | | |
| ▼ ▲ 5 | e | Pan S/A, oil | | | |

6-1-3 POINTS OF REMOVAL

(1) Pan S/A, oil

- 1.Remove the attaching nuts on the back section of the pan S/A from the service hole at the lower side of the transmission.
- 2.Remove the attaching bolts and nuts of the pan S/A.



T04E6015T10

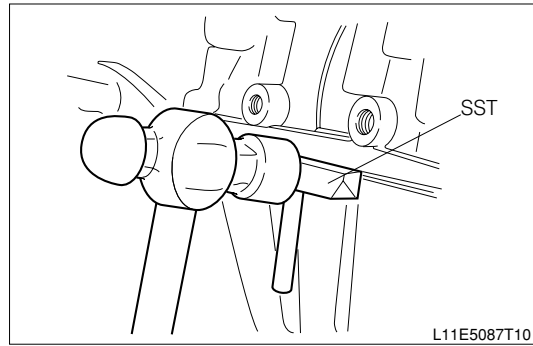
B5-11

3. Remove the oil pan S/A by inserting the SST between the pan S/A and the cylinder block Ay.

SST: 09032-00100-000

CAUTION

- Be very careful not to scratch the joint surface.
- Be very careful not to deform the flange section.



6-1-4 POINTS OF INSTALLATION

(1) Pan S/A, oil

1. Clean the pan installation surface of the cylinder block Ay.
2. Apply liquid gasket to the pan S/A at the bold-line section in the figure.

NOTE

- The guide of the diameter of the liquid gasket is 3.5 ± 0.5 mm Dia.

ADHESIVE: Three Bond1280E

CAUTION

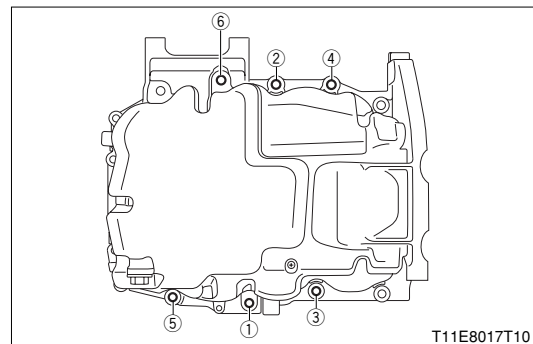
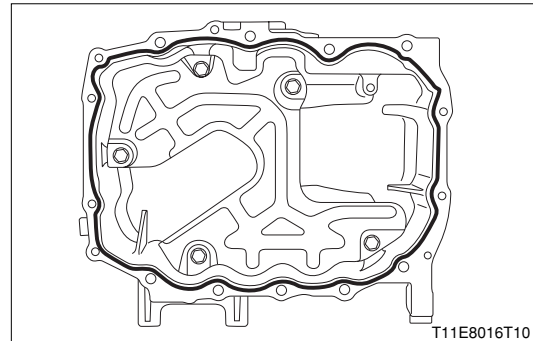
- Application of the gasket should be started and finished at the seal surface with the block on either the intake side or the exhaust side. Be sure to avoid the seal surface with the chain cover on the front and back of the engine and oil seal retainer.
3. Install the pan S/A to the cylinder block Ay in the sequence show in the figure.

NOTE

- As for the tightening of the remaining sections, it may be done in any order.

CAUTION

- Perform the assembling within three minutes of application of the gasket. Moreover, perform the tightening within 15 minutes.



6-1-5 OPERATION AFTER INSTALLATION

1. Install the front exhaust pipe Ay.

Refer to Page B4-3.

2. Replenish engine oil.

Refer to Page B5-3.

3. Start the engine. Ensure that there is no oil leakage from the joint sections of the oil pan S/A and oil filter Ay with brackets.

■ K3
1 LUBRICATION SYSTEM

1-1 FUNCTION CHECK

WARNING

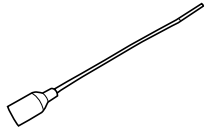
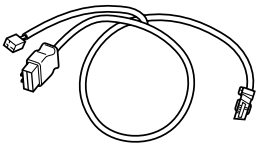
- Never carry out the operation while the engine and engine oil are still hot, for there are hazard potentials for getting scald.

1-2 ARTICLES TO BE PREPARED

Instrument

Tachometer, Oil pressure gauge, Torque wrench

SST

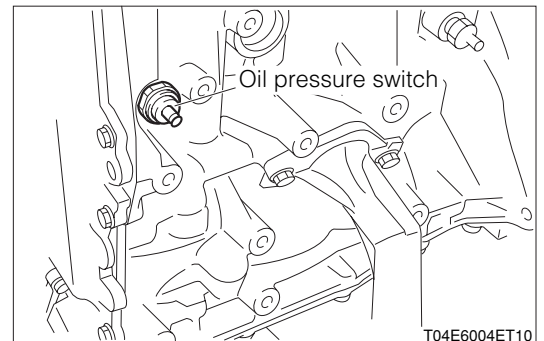
Shape	Part No.	Part name
	09991-87402-000	Wire, tacho-pulse pick up
	09991-87404-000 (09991-87401-000)	Wire, engine control system inspection

Lubricant, adhesive, others

Three Bond1104

1-2-1 OIL PRESSURE

1. Check the engine oil amount.
Refer to Page B1-20.
2. Remove the front bumper cover.
Refer to Page I2-2.
3. Remove the engine oil pressure switch.
 - (1) Disconnect the connector for the engine oil pressure switch.
 - (2) Remove the engine oil pressure switch.
4. Install the oil pressure gauge (Thread diameter PT1/8).



B5-13

5. Install the engine tachometer.

- (1) Install an engine tachometer to the terminal REV of the DLC, using the SST.

SST: 09991-87402-000

09991-87404-000

6. Warm up the engine.

7. Measure the engine oil pressure.

8. Start the engine and measure the pressure at each engine speed.

SPECIFIED VALUE: At 750rpm

39kPa or more

{0.4kgf/cm² or more}

At 3000rpm

225kPa or more

{2.3kg/cm² or more}

9. Remove the oil pressure gauge (Thread diameter PT1/8).

10. Install the engine oil pressure switch.

- (1) Clean the threaded portion of the oil pressure switch and the switch section of the cylinder block.

- (2) Apply sealing material to the threaded portion of the oil pressure switch.

ADHESIVE: Three Bond1104

- (3) Install the oil pressure switch.

TIGHTENING TORQUE: $15 \pm 4.5 \text{ N} \cdot \text{m}$

{ $153 \pm 46 \text{ kgf} \cdot \text{cm}$ }

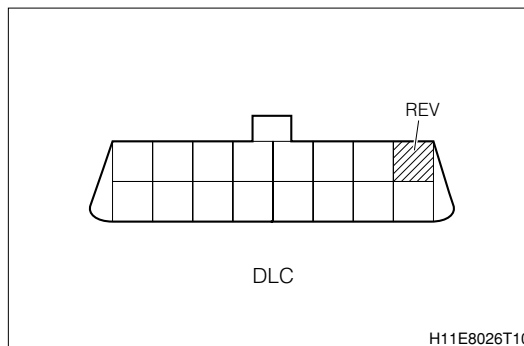
- (4) Connect the connector for the engine oil pressure switch.

11. Remove the engine tachometer.

12. Install the front bumper cover.

Refer to Page I2-2.

13. Start the engine and check the engine oil pressure switch attaching section for oil leakage.



2 ENGINE OIL

2-1 REPLACEMENT

WARNING

- Never carry out the operation while the engine and engine oil are still hot, for there are hazard potentials for getting scald.

2-1-1 ARTICLES TO BE PREPARED

Lubricant, adhesive, others

Engine oil 5W-20(API Grade SG or higher), Engine oil 5W-30(API Grade SG or higher)
--

2-1-2 REPLACING PROCEDURE

1. Remove the oil filler cap.
2. Drain the engine oil by removing the drain plug of the oil pan.
3. Install the drain plug with a new gasket interposed.

TIGHTENING TORQUE: $29.5 \pm 5.9 \text{ N} \cdot \text{m}$ { $301 \pm 60 \text{ kgf} \cdot \text{cm}$ }

4. Fill engine oil.

NOTE

- About 3.6 ℓ. (With oil filter)

LUBRICANT: Engine oil 5W-20(API Grade SG or higher)

Engine oil 5W-30(API Grade SG or higher)

5. Install the oil filler cap.
6. Ensure that there is no oil leakage by operating the engine for three minutes or more.
7. Check the oil level.

Refer to Page B1-20.

3 OIL FILTER

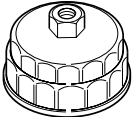
3-1 REPLACEMENT

WARNING

- Never carry out the operation while the engine and engine oil are still hot, for there are hazard potentials for getting scald.

3-1-1 ARTICLES TO BE PREPARED

SST

Shape	Part No.	Part name
	09228-87201-000	Wrench oil filter

Lubricant, adhesive, others

Engine oil 5W-30(API Grade SG or higher), Vinyl hose

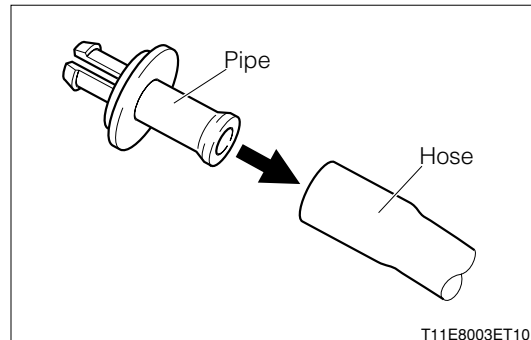
3-1-2 REPLACEMENT PROCEDURE

1. Remove the oil filter element.

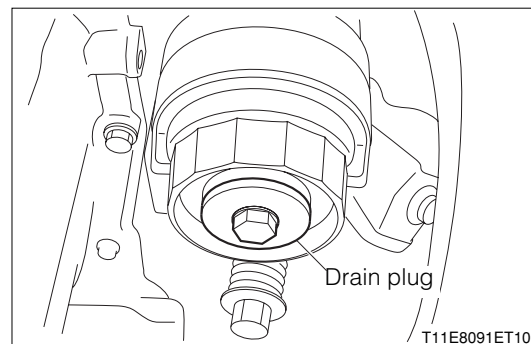
(1) Connect the hose to the supplied drain pipes.

NOTE

- Use a 15mm Dia. hose.



(2) Remove the oil filter drain plug.



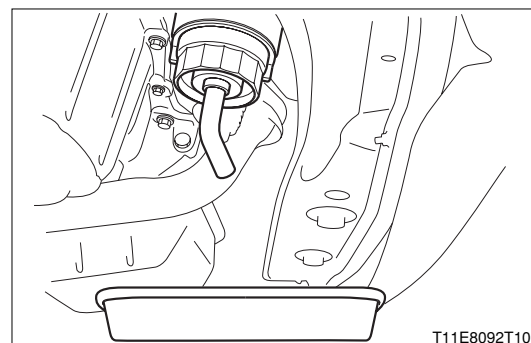
(3) Insert the pipes with the hose attached.

CAUTION

- Insert the hose under a condition that the O-ring (For drain plugs) is attached to the oil filter cap side.

NOTE

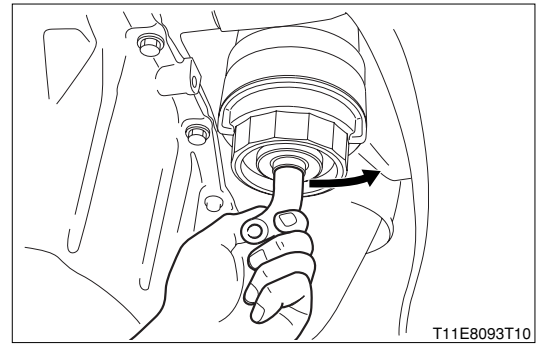
- Since the oil will be drained through the hose, put the hose end to a tray in advance.



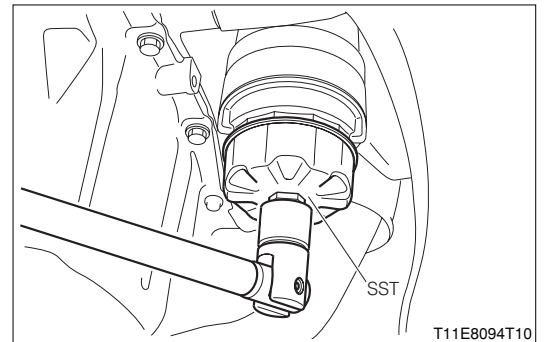
- (4) Ensure that the oil has been drained. Then, remove the pipe and O-ring (For drain plugs).

CAUTION

- During the removal, be sure to bend the pipe to the side.



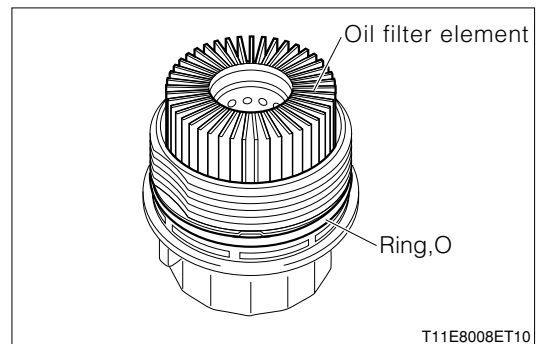
- (5) Remove the oil filter cap, using the SST.
SST: 09228-87201-000



- (6) Remove the oil filter element and O-ring (For caps) from the oil filter cap.

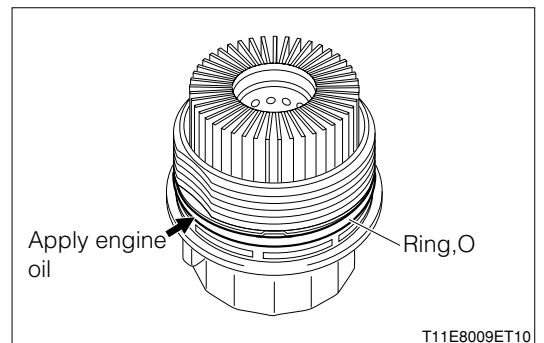
CAUTION

- To avoid scratching the O-ring groove, remove the O-ring (for caps) by hand without using any tools.



2. Install the oil filter element.

- (1) Clean the inside section, threaded portion and O-ring groove section of the oil filter cap, using brake cleaner.
- (2) Apply a small amount of engine oil to a new O-ring (For caps) and install the oil filter cap.
- (3) Set a new oil filter element to the oil filter cap.
- (4) Remove any smear or foreign matters from the installation surface and inside section on the engine side.
- (5) Again, apply a small amount of engine oil to the O-ring (For caps) and install the oil filter cap.



CAUTION

- Care must be exercised so that the O-ring (For caps) may not be caught-in.

B5-17

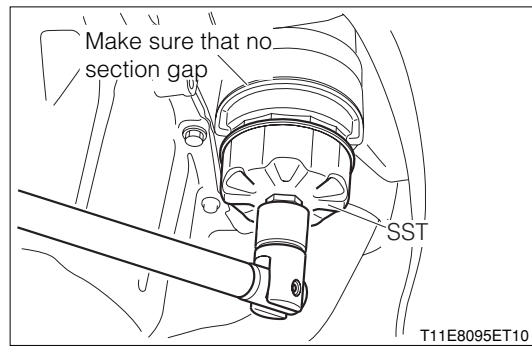
(6) Tighten the oil filter cap, using the SST.

SST: 09228-87201-000

TIGHTENING TORQUE: $25.0 \pm 5.0 \text{ N} \cdot \text{m}$
{ $255 \pm 51 \text{ kgf} \cdot \text{cm}$ }

CAUTION

- After tightening the oil filter cap, ensure that there is no gap.



(7) Apply a small amount of engine oil to a new O-ring (For drain plugs) and install it to the oil filter cap.

LUBRICANT: Engine oil

CAUTION

- Install the oil filter cap, being very careful not to damage the O-ring.
- (8) Remove the smear and foreign matters from the installation surface.
- (9) Install the oil filter drain plug to the oil filter cap.

TIGHTENING TORQUE: $12.5 \pm 2.5 \text{ N} \cdot \text{m}$
{ $128 \pm 26 \text{ kgf} \cdot \text{cm}$ }

CAUTION

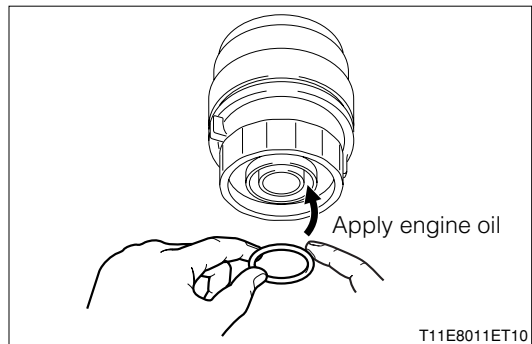
- Care must be exercised so that the O-ring (For caps) may not be caught-in.

3.Replenish engine oil.

Refer to Page B5-14.

4.Perform the oil leakage check.

- (1) Start the engine and ensure that there is no oil leakage from the joint section of the oil filter cap and oil filter drain plug.



4 OIL PUMP

4-1 REMOVAL AND INSTALLATION

WARNING

- Never carry out the operation while the engine and engine oil are still hot, for there are hazard potentials for getting scald.

4-1-1 ARTICLES TO BE PREPARED

Instrument

Torque wrench

Lubricant, adhesive, others

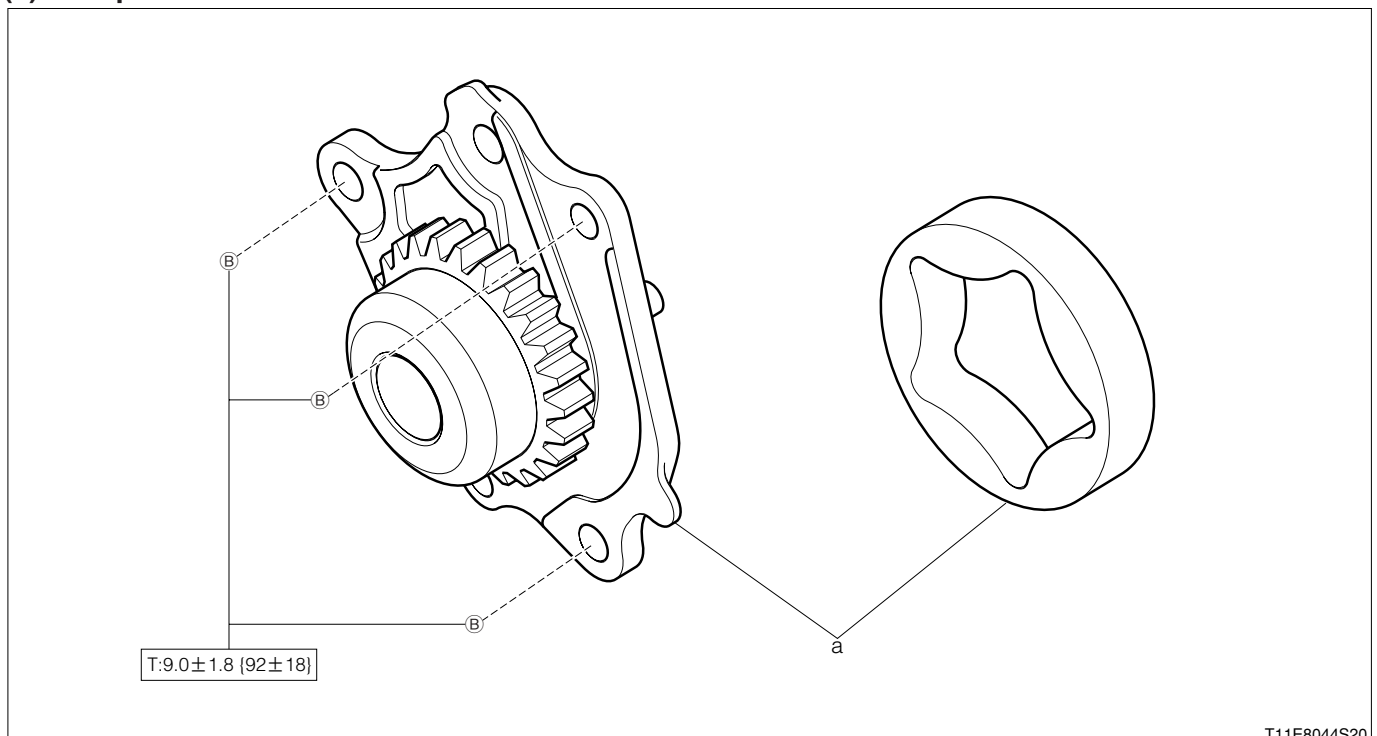
Engine oil

4-1-2 OPERATION BEFORE REMOVAL

1. Drain the engine oil.
Refer to Page B5-14.
2. Remove the engine Ay.
Refer to Page B2-21.
3. Remove the water pump pulley.
Refer to Page B6-11.
4. Remove the timing chan S/A.
Refer to Page B2-35.

4-1-3 REMOVAL AND INSTALLATION PROCEDURES

(1) Components



T11E8044S20

Unit:N·m{kgf·cm}

B5-19

(2) Removal and installation procedures

▼ ▲ 1 a Pump Ay, oil

4-1-4 POINTS OF REMOVAL**(1) Pump Ay, oil**

- 1.Remove the pump Ay.

CAUTION

- Since the outer rotor (Oil pump driven rotor) is not fixed to the oil pump Ay, be careful not to drop it during the removal and installation operations.

4-1-5 POINTS OF INSTALLATION**(1) Pump Ay, oil**

- 1.Apply engine oil to the sections shown in the figure before the assembling operations.
- 2.After completion of the assembling, turn the sprocket more than one turn so that the oil may be bedded-in. Also, ensure that it rotates smoothly.
- 3.Ensure that no foreign matter is caught-in. Then, install the pump Ay.

LUBRICANT: Engine oil

4-1-6 OPERATION AFTER INSTALLATION

- 1.install the timing chan S/A.

Refer to Page B2-35.

- 2.Install the water pump pulley.

Refer to Page B6-11.

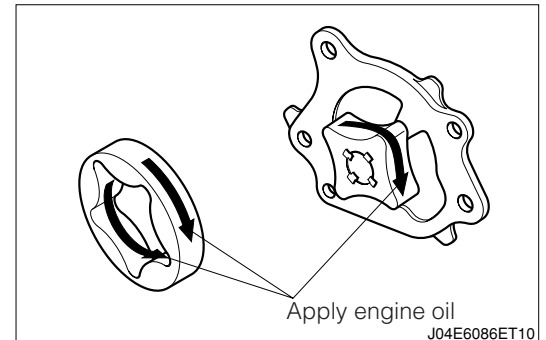
- 3.Install the engine Ay.

Refer to Page B2-21.

- 4.Fill engine oil.

Refer to Page B5-14.

- 5.Start the engine. Ensure that there is no oil leakage from the joint section of the type T oil seal and the timing chain cover assembly.




5 CRANKSHAFT FRONT OIL SEAL

5-1 REMOVAL AND INSTALLATION

5-1-1 ARTICLES TO BE PREPARED

SST

Shape	Part No.	Part name
	09223-87202-000	Replacer,crankshaft front oil seal

Instrument

Torque wrench

Lubricant,adhesive,others

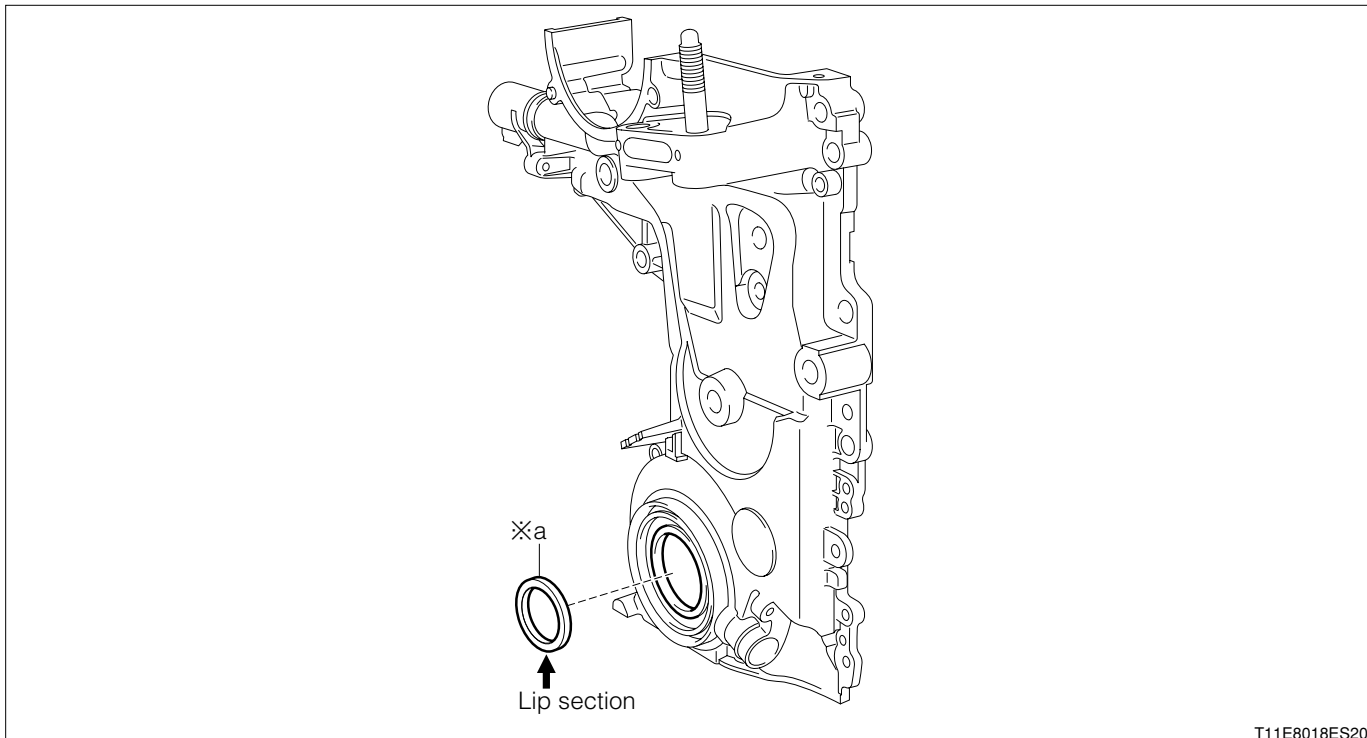
Engine oil 5W-30(API Grade SG or higher)

5-1-2 OPERATION BEFORE REMOVAL

1. Drain the engine oil.
Refer to Page B5-14.
2. Remove the crankshaft pulley Ay.
Refer to Page B2-36.

5-1-3 REMOVAL AND INSTALLATION PROCEDURES

(1) Components



➔: Engine oil

※: Non-reusable parts

(2) Removal and installation procedures

▼ ▲ 1 a Seal, type T oil

5-1-4 POINTS OF REMOVAL**(1) Seal, type T oil**

1. Cut the lip section of the seal by a cutter, etc. Then, remove the seal by prying it by a screwdriver, etc.

CAUTION

- Wind the screwdriver with a tape, etc. to prevent the surroundings from being damaged.

2. After removing the seal, ensure that there is no scratch on the chamfering section of the crankshaft Ay. (If there is any scratch, repair it with sand paper #400.)

5-1-5 POINTS OF INSTALLATION**(1) Seal, type T oil**

1. Install the seal, following the procedure given below.

- (1) Apply engine oil to the lip section of the seal.

LUBRICANT: Engine oil

- (2) Press-fit the seal vertically, using the SST and bolts.

SPECIFIED VALUE: Press-fitting amount

Protruding amount from end surface
of timing chain cover Ay

Within 0.5mm

Press-fitting depth from end surface
of timing chain cover Ay

Within 1mm

SST: 09223-87202-000

5-1-6 OPERATION AFTER INSTALLATION

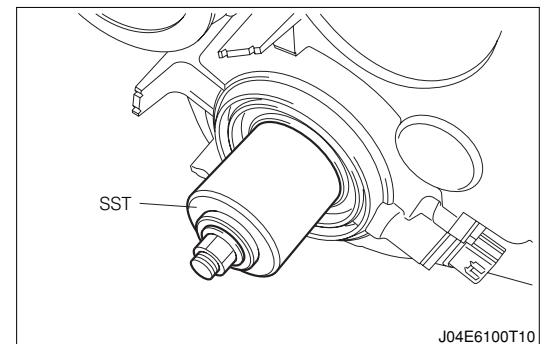
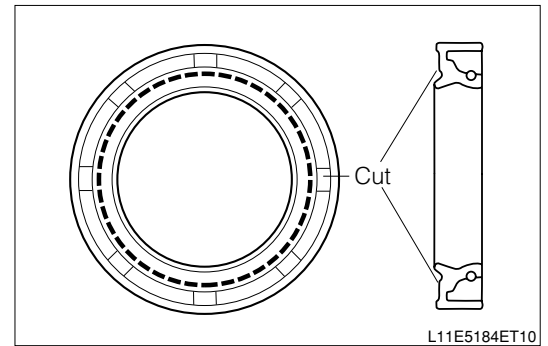
1. Install the crankshaft pulley Ay.

Refer to Page B2-36.

2. Fill engine oil.

Refer to Page B5-14.

3. Start the engine and ensure that there is no oil leakage from the type T oil seal.



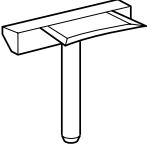
6 OIL PAN

6-1 REMOVAL AND INSTALLATION

WARNING

- Never carry out the operation while the engine and engine oil are still hot, for there are hazard potentials for getting scald.

SST

Shape	Part No.	Part name
	09032-00100-000	Cutter,oil pan seal

Instrument

Torque wrench

Lubricant,adhesive,others

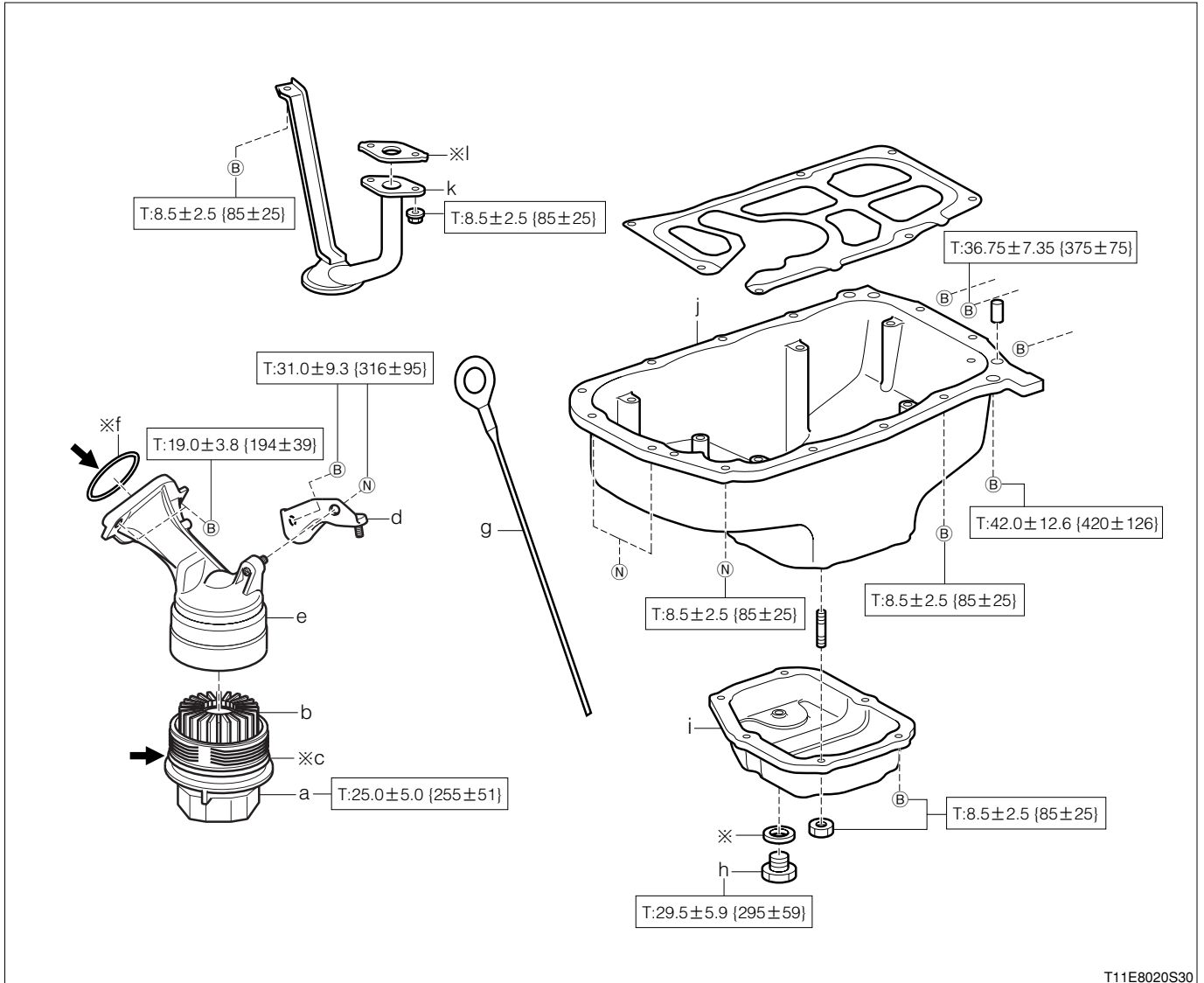
Three Bond1280E,Engine oil

6-1-1 OPERATION BEFORE REMOVAL

- 1.Drain the engine oil.
Refer to Page B5-14.
- 2.Remove the front exhaust pipe Ay.
Refer to Page B4-6.

6-1-2 REMOVAL AND INSTALLATION PROCEDURES

(1) Components



T11E8020S30

➔: Engine

Unit: N·m{kgf·cm}

※Non-reusable parts

(2) Removal and installation procedures

- | | | | |
|-----|-----------------------------------|--------|---------------------------|
| ▲ 1 | a Bracket, oil filter No.1 | 8 | g Gauge Ay, oil level |
| 2 | b Element, S/A oil filter | 9 | h Plug, oil drain |
| 3 | c Gasket, oil filter cap | ▼ ▲ 10 | i Pan S/A, oil No.2 |
| 4 | d Bracket, oil filter No.1 | ▼ ▲ 11 | j Pan S/A, oil |
| 5 | b Oil filter Ay with bracket | | 12 k Strainer S/A, oil |
| 6 | e Gasket, oil filter case | | 13 l Gasket, oil strainer |
| 7 | f Gasket, oil filter case bracket | | |

6-1-3 POINTS OF REMOVAL

(1) Pan S/A, oil No.2

- 1.Remove the attaching bolts and nuts of the oil pan S/A No.2.
- 2.Remove the oil pan S/A No.2 by inserting the SST between the oil pan S/A No.2 and the oil pan S/A.

SST: 09032-00100-000

CAUTION

- Be very careful not to scratch the joint surface.
- Be very careful not to deform the flange section.

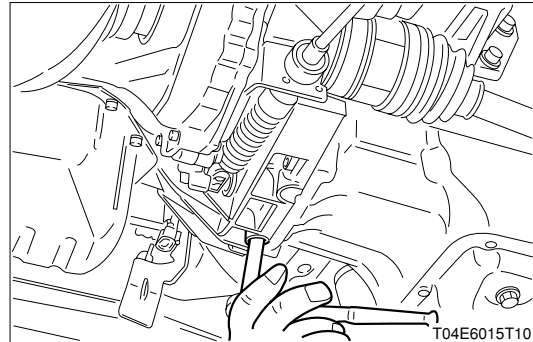
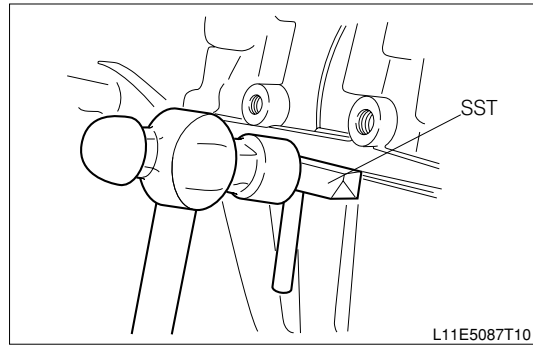
(2) Pan S/A, oil

- 1.Remove the attaching nuts on the back section of the oil pan S/A from the service hole at the lower side of the transmission.
- 2.Remove the attaching bolts and nuts of the oil pan S/A.
- 3.Remove the oil pan S/A by inserting the SST between the oil pan S/A and the cylinder block Ay.

SST: 09032-00100-000

CAUTION

- Be very careful not to scratch the joint surface.
- Be very careful not to deform the flange section.



6-1-4 POINTS OF INSTALLATION

(1) Pan S/A, oil

CAUTION

- If any difficulty is encountered in flattening due to significant deformation, replace with a new one.

- 1.Clean the oil pan S/A installation surface of the cylinder block Ay.
- 2.Apply liquid gasket to the oil pan S/A at the bold-line section in the figure. Then, assemble it to the cylinder block Ay.

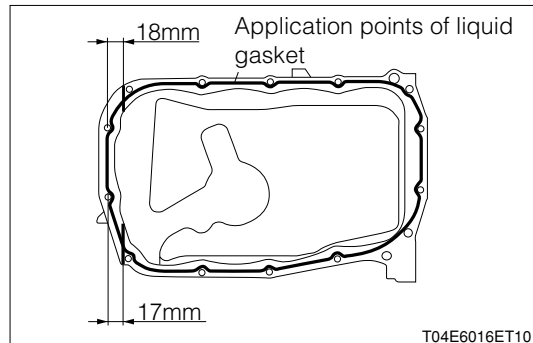
NOTE

- The guide of the diameter of the liquid gasket is 3.5 ± 0.5 mm Dia.

ADHESIVE: Three Bond1280E

CAUTION

- Application of the gasket should be started and finished at the seal surface with the block on either the intake side or the exhaust side. Be sure to avoid the seal surface with the chain cover on the front and back of the engine and oil seal retainer.
- Perform the assembling within three minutes of application of the gasket. Moreover, perform the tightening within 15 minutes.



(2) Pan S/A, oil No.2

1. Install the Oil pan S/A No.2.

CAUTION

- If the flange section has been deformed, flatten it by tapping it lightly with a hammer.
- If any difficulty is encountered in flattening due to significant deformation, replace with a new one.

(1) Clean the gasket adhered to the installation surface on the oil pan side and oil pan No.2 side with a scraper, etc. Ensure that there is no oil and the like adhered to it.

(2) Apply liquid gasket without any missing portion, as shown in the right figure. Then, perform the assembling.

NOTE

- The guide of the diameter of the gasket is 3.5 ± 0.5 mm Dia.

ADHESIVE: Three Bond1208E

CAUTION

- Perform the assembling within three minutes of application of the gasket. Moreover, perform the tightening within 15 minutes.

(3) Bracket, oil filter No.1

1. Temporarily tighten the nuts shown in the figure until the bracket becomes flush with the oil filter Ay with brackets.
2. While pressing the brackets against the cylinder block Ay, tighten the bolts shown in the figure.
3. Fully tighten the nuts that have been temporarily tightened.

6-1-5 OPERATION AFTER INSTALLATION

1. Install the front exhaust pipe Ay.

Refer to Page B4-6.

2. Fill engine oil.

Refer to Page B5-14.

3. Start the engine. Ensure that there is no oil leakage from the joint sections of the oil pan S/A and oil filter Ay with brackets.

