

LUBRICATION SYSTEM

1311-00/1531-01/1531-07/1531-24/1531-31/1541-03/

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LUBRICATION SYSTEM

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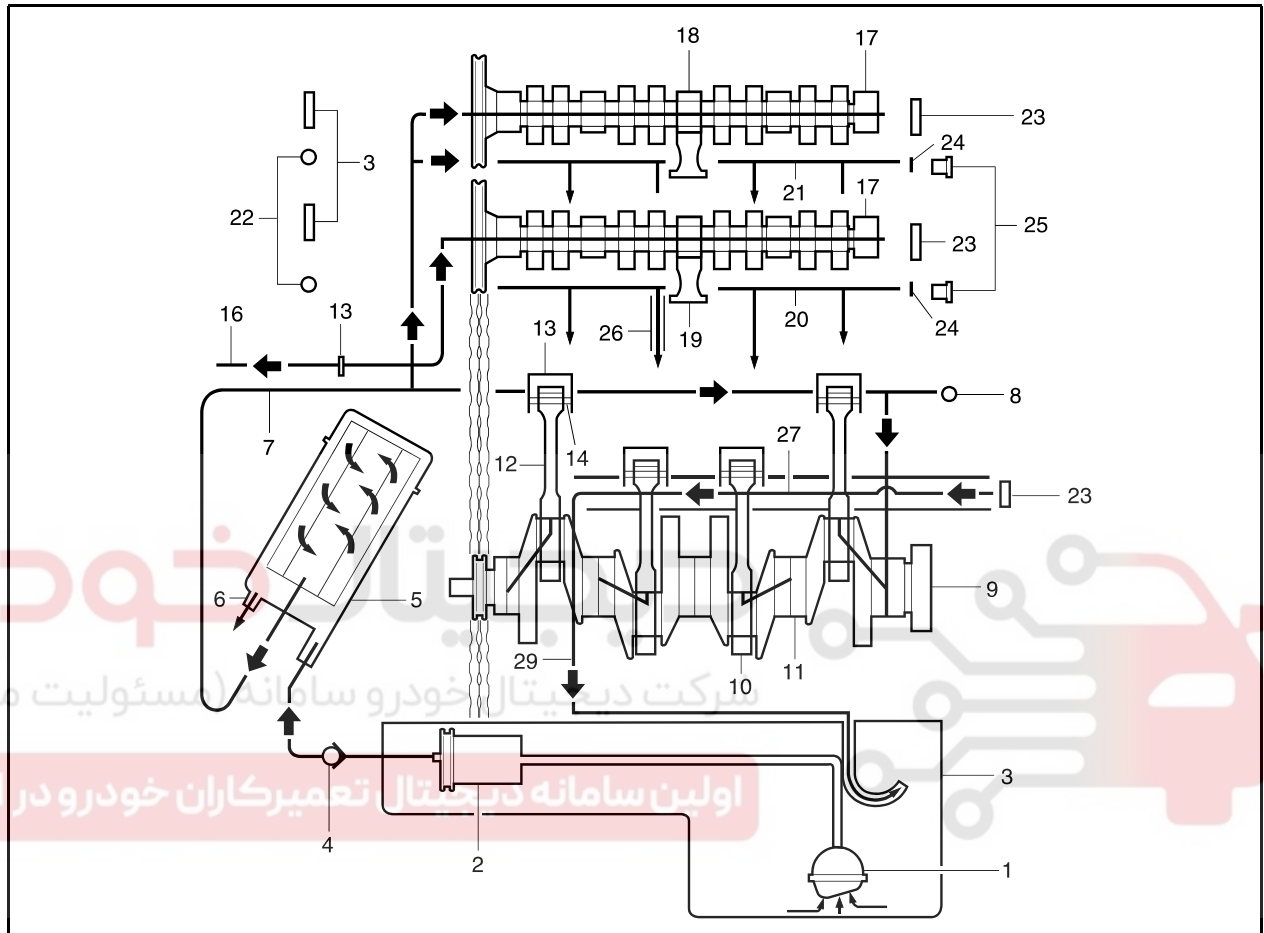


دیجیتال خودرو

شرکت دیجیتال خودرو سامانه (مسئولیت محدود)

اولین سامانه دیجیتال تعمیرکاران خودرو در ایران



LUBRICATION SYSTEM**1531-24****OVERVIEW AND OPERATION PROCESS****1. OIL CIRCULATION**

- | | |
|----------------------------------|---|
| 1 Oil Strainer | 16 Oil Supply (To Chain Tensioner) |
| 2 Oil Pump | 17 Camshaft |
| 3 Oil Pan | 18 Cam Bearing |
| 4 Oil Non-Return Valve | 19 Valve |
| 5 Oil Filter | 20 Oil Gallery (Supply Oil to Intake Tappet) |
| 6 Oil Filter Bypass Valve | 21 Oil Gallery (Supply Oil to Exhaust Tappet) |
| 7 Main Oil Gallery | 22 Ball (ϕ 8 mm) |
| 8 Closing Ball (ϕ 15 mm) | 23 Camshaft Plug |
| 9 Crankshaft | 24 Seal |
| 10 Connecting Rod Bearing | 25 Screw Plug |
| 11 Crankshaft Bearing | 26 Oil Return Gallery (Cylinder Head and Crankcase) |
| 12 Connecting Rod | 27 Oil Return Gallery (Crankcase) |
| 13 Piston | 28 End Cover (ϕ 20 mm) |
| 14 Oil Spray (Piston Crown Area) | 29 Oil Return Pipe |
| 15 Non-Return Valve (Crankcase) | |

Modification basis	
Application basis	
Affected VIN	

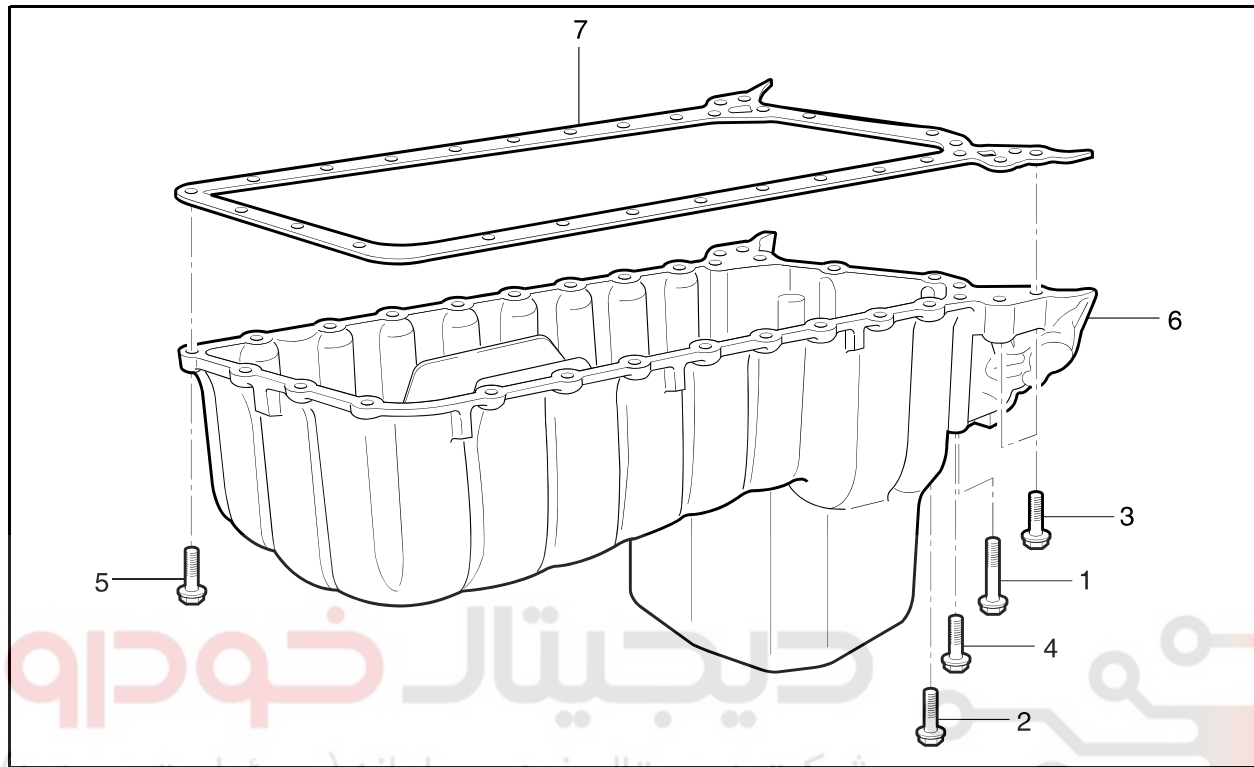
ENGINE LUBRICATION SYSTEM

ACTYON 2012.12

CONFIGURATION AND FUNCTIONS

S.G.N.

1531-24 OIL PAN



- 1 Bolt
- 2 Bolt
- 3 Bolt
- 4 Bolt
- 5 Bolt
- 6 OilPan
- 7 Gasket

1. Remove the drain plug and drain the oil completely.
2. Unscrew the bolts and remove the oil pan and gasket.
3. Clean the inside of oil pan and sealing surface, then apply the sealant.
4. Replace the gasket with new one.
5. Install the oil pan with gasket, and tighten each bolt in specified torque.
6. Check for oil leaks while running the engine.



CAUTION

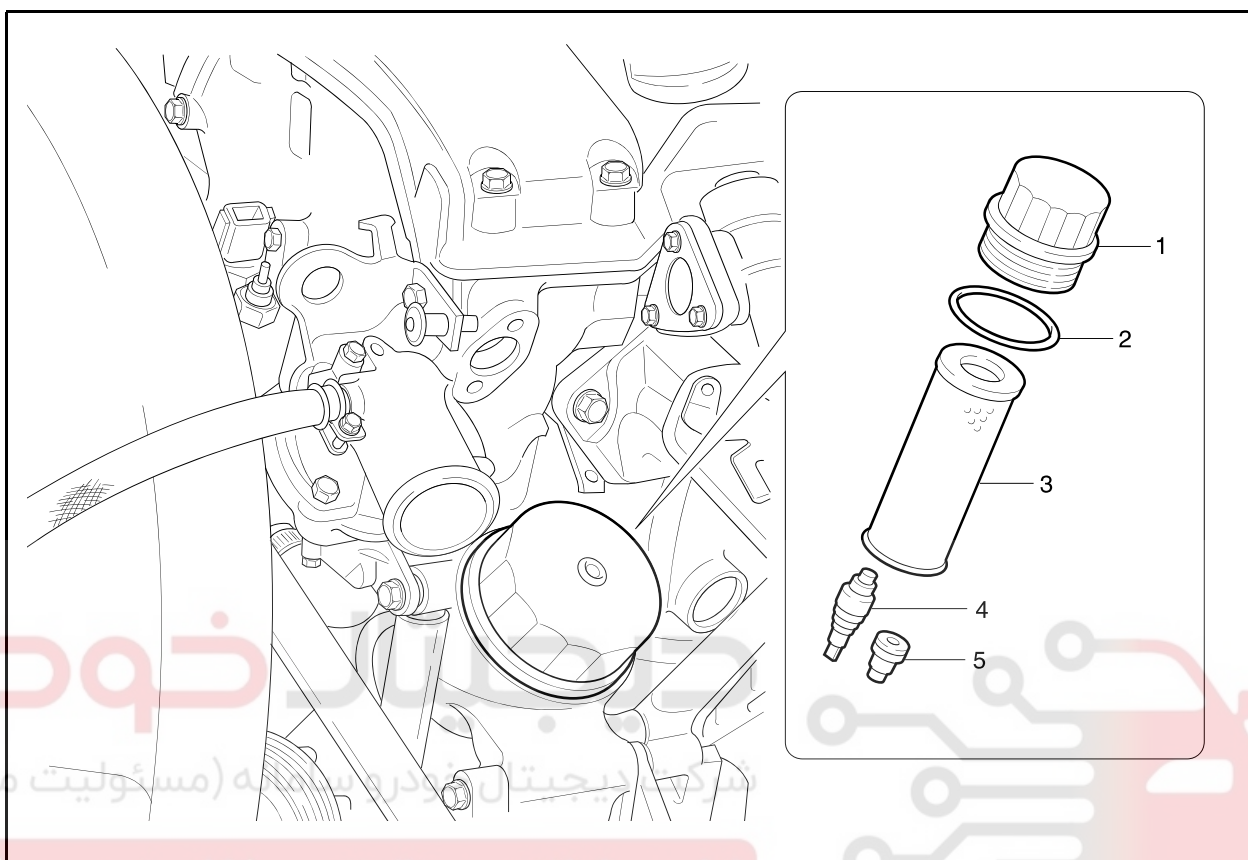
- Arrange the bolts according to each size.

Modification basis	
Application basis	
Affected VIN	

REMOVAL AND INSTALLION

S.G.N.

1541-03 ENGINE OIL AND OIL FILTER ELEMENT



1 Oil Filter Cover 25 Nm (18 lb-ft)

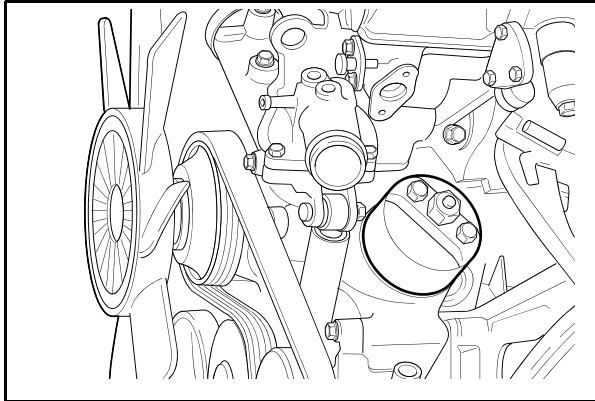
2 O-Ring Replace

3 Oil Filter Element

4 Oil Drain Plug

5 Oil Filter Bypass Valve

Modification basis	
Application basis	
Affected VIN	



► Replacement Procedure

1. Install the oil filter remover 103 589 02 09 00 on the oil filter cover.

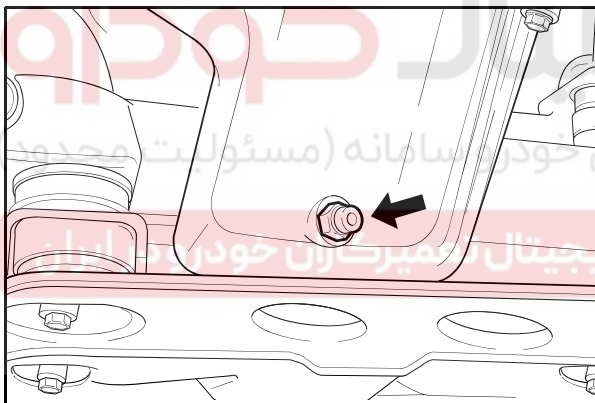
⚠ CAUTION

- Make the screw cover removable by tightening the bolt at the side of the oil filter remover 103 589 02 09 00.

2. Install the wrench to the upper bolt in the oil filter remover 103 589 02 09 00 and remove the oil cover by turning it.
3. Remove the oil filter element.

⚠ CAUTION

- Work with a cloth under the vehicle when removing the oil filter element to not drain the oil.



4. Remove the drain plug and drain the engine oil.

⚠ CAUTION

- Leave the oil filler cap open to ease the engine oil discharge.

5. Tighten the engine oil drain plug after cleaning it.

Tightening torque 25 Nm (18 lb-ft)

Replace the seal washer with new one.

6. Replace the O-ring in the oil filter cover with new one.

⚠ CAUTION

- Apply the engine oil to the O-ring.

7. Insert new oil filter element into the oil filter housing.
8. Temporarily tighten the oil filter cover. Install the Oil filter remover 103 589 02 09 00, and then completely tighten it.

Tightening torque 25 Nm (18 lb-ft)

9. Fill up engine oil through the engine oil filler opening (3).
10. Check for oil leaks at normal engine temperature after starting the engine.
11. Stop the engine and wait 5 minutes. Check the oil level and fill up as specified if necessary.

دیجیتال خودرو

شرکت دیجیتال خودرو سامانه (مسئولیت محدود)

اولین سامانه دیجیتال تعمیرکاران خودرو در ایران



Modification basis	
Application basis	
Affected VIN	

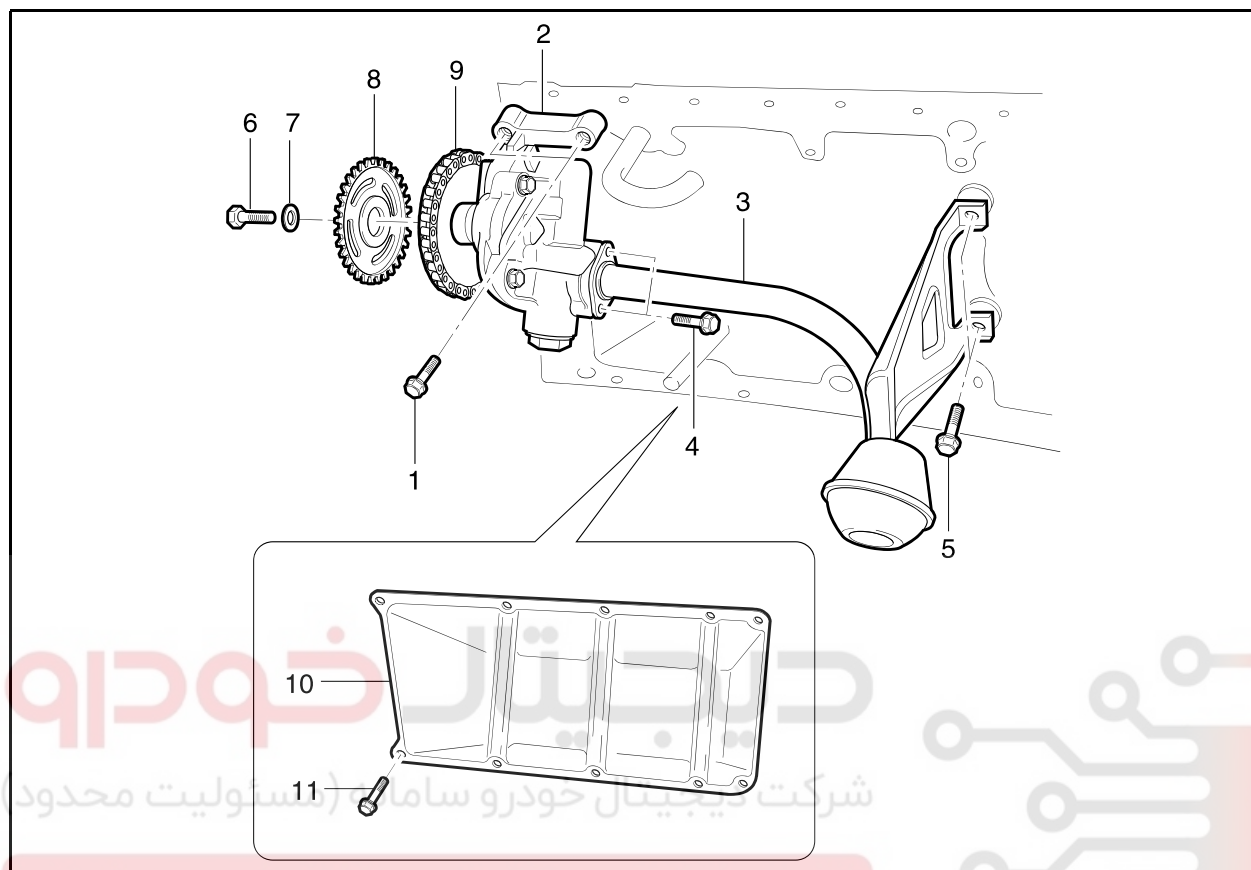
S.G.N.

1531-01

OIL PUMP

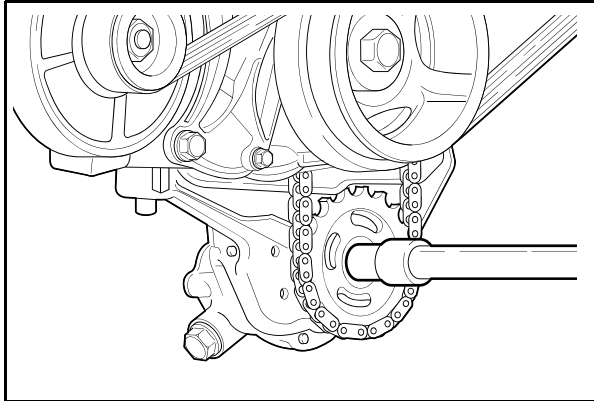
Preceding work

1. Removal of oil pan



- 1 Bolt (M8 X 35, 3 piece)..... 22.5 - 27.5 Nm (16.6 - 20.3 lb-ft)
 2 Oil Pump
 3 Oil Strainer Assembly
 4 Bolt (M6 X 20, 2 pieces)..... 9 - 11 Nm (80 - 97 lb-in)
 (In E23 Engine, These Bolts are Combined with Baffle Plate)
 5 Bolt (M6 X 12, 2 pieces)..... 9 - 11 Nm (80 - 97 lb-in)
 6 Bolt (M8 X 20, 1 pieces)..... 29 - 35 Nm (21 - 26 lb-ft)
 7 Washer
 8 Sprocket (Oil Pump Drive)
 9 Chain (Oil Pump Drive)
 10 Plate-Baffle
 11 Bolt (M6 X 12, 6 pieces)..... 9 - 11 Nm (80 - 97 lb-in)
 (E23 Engine Only : Baffle Plate Mounting Bolt)

Modification basis	
Application basis	
Affected VIN	



1. Unscrew the bolt (6) from the oil pump drive sprocket and separate the oil pump drive chain.

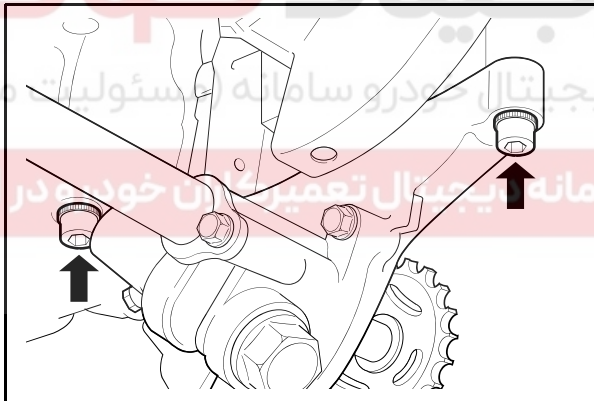
Tightening torque 25 – 39 Nm
(21 - 26 lb-ft)

2. Unscrew the bolts (4,5) and remove the oil strainer assembly (3).

Tightening torque

Bolt (4):	9 - 11 Nm (80 - 97 lb-ft)
Bolt (5):	9 - 11 Nm (80 - 97 lb-ft)

Insert the steel gasket into the oil pump and bolt (4) mounting surface.



3. Unscrew the six bolts (11) and remove the baffle plate.

Tightening torque 70 Nm (52 lb-ft)

4. Unscrew the three bolt (1) and remove the oil pump.

Tightening torque 22.5 – 27.5 Nm
(16.6 - 20.3 lb-ft)

Modification basis	
Application basis	
Affected VIN	

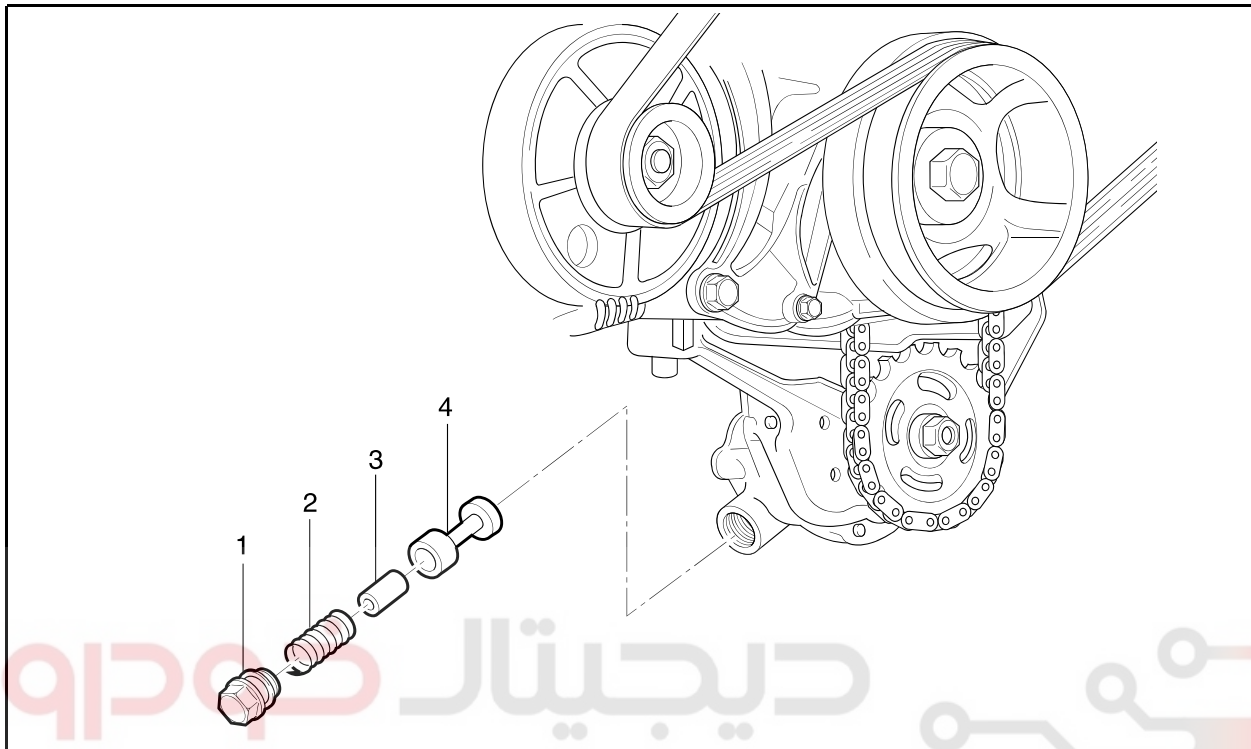
S.G.N.

1531-07

OIL PRESSURE RELIEF VALVE

Preceding work

1. Removal of oil pan



1 Screw Plug 50 Nm (37 lb-ft)

2 Compression Spring

3 Guide Pin

4 Piston

1. Remove the screw plug (1).

Tightening torque 50 Nm (37 lb-ft)

2. Remove the spring (2), guide pin (3) and the piston (4).

3. Installation should follow the removal procedure in the reverse order.

**CAUTION**

- Don't use the seal for the screw plug.

Modification basis	
Application basis	
Affected VIN	

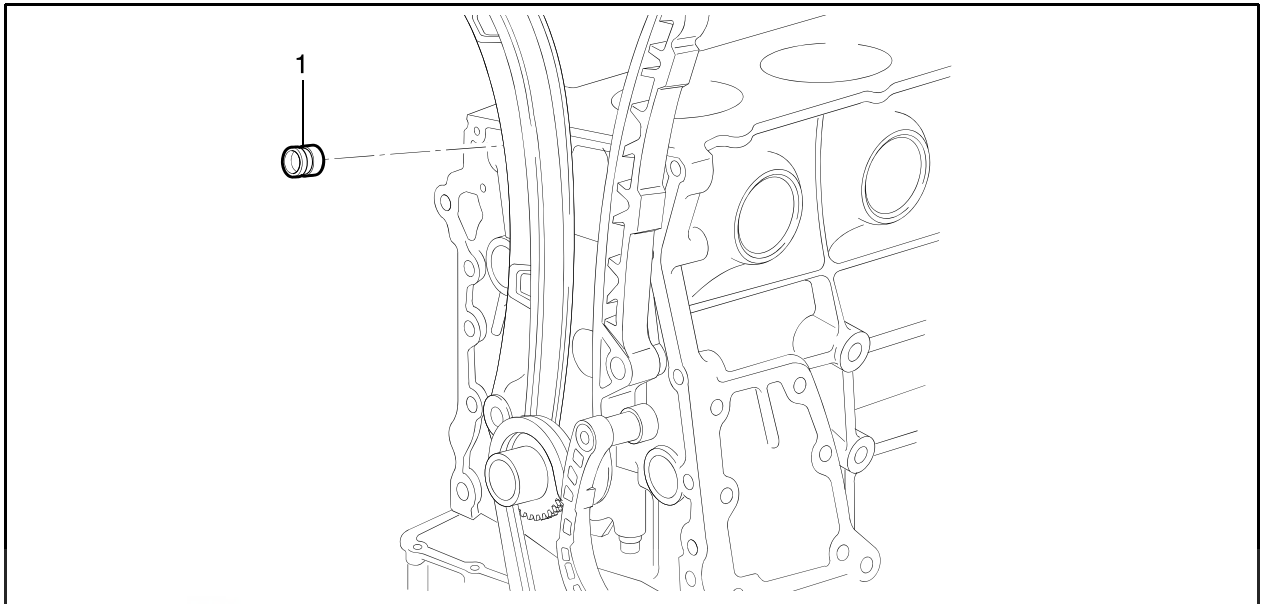
S.G.N.

1311-00

OIL NON-RETURN VALVE

Preceding work

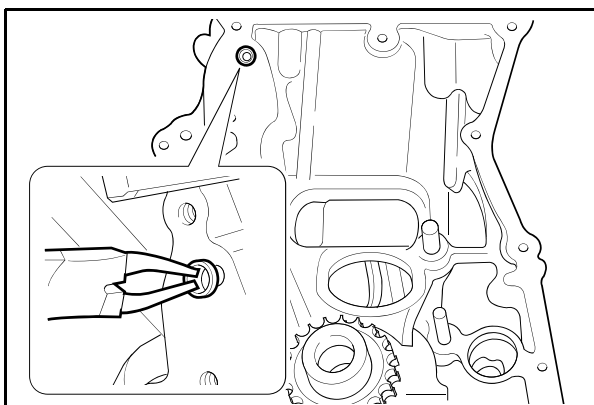
1. Removal of timing gear case cover



1 Oil Non-return Valve

► Functions

The non-return valve prevents the oil in the chain tensioner from drying up. In other words, it stops oil returning in order to prevent the oil in the chain tensioner from getting dry. As a result, the chain tensioner can be activated with oil in itself.

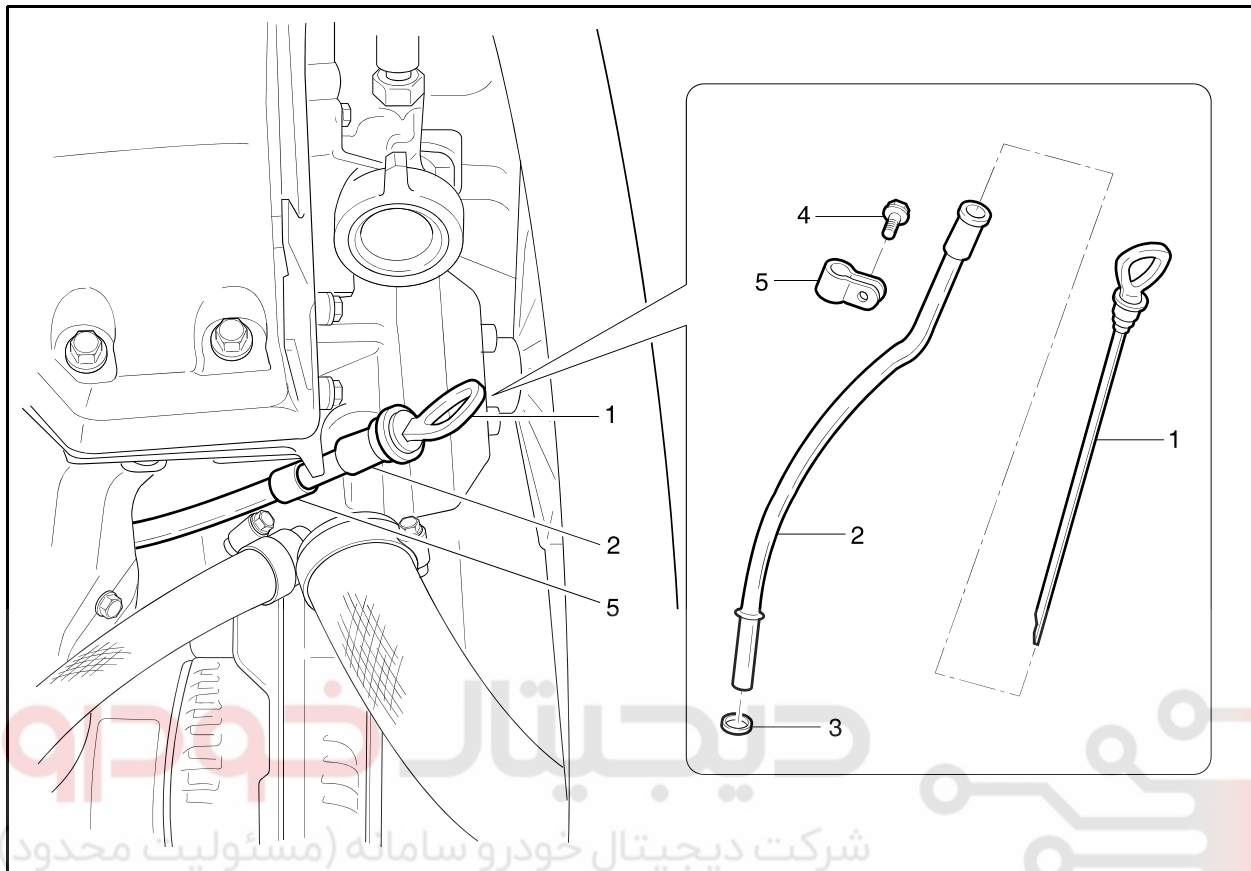


► Replacement Procedure

1. Remove the non-return valve using a pliers.
Insert new non-return valve with hand.
- 2.

Modification basis	
Application basis	
Affected VIN	

S.G.N.

1531-31 OIL DIPSTICK GUIDE TUBE

1 Oil Dipstick Level Gauge

2 Oil Dipstick Guide Tube

3 O-Ring

4 Bolt (M6 X 16, 1 piece) 9 - 11 Nm (80 - 97 lb-in)

5 Clamp

1. Pull out the oil dipstick level gauge (1).

2. Unscrew the bolt (4) and remove the oil dipstick guide tube (2).

Tightening torque 9 – 11 Nm(80 – 97 lb–ft)

It is very hard to remove the oil dipstick guide tube without special tool. If it is not necessary, do not remove the guide tube.

3. Installation should follow the removal procedure in the reverse order.

4. Check for leaks by starting the engine.

Modification basis	
Application basis	
Affected VIN	