

► LUBRICATION SYSTEM

PREVENTIVE MAINTENANCE

The lubrication system is responsible for the durability and internal cleaning of the engine. Beyond of lubricating, the oil has the function of absorbing the heat generated by the friction of the mobile parts.

Level

Check oil level with the engine on a flat ground and stopped.

1. Wait from 10 to 15 minutes to allow the oil return from the upper part of the engine.
2. Remove oil dipstick and clean it with a clean cloth, introduce it until the edge, remove it again and check level, twice, to make sure of the check.

Complete the oil level only if the oil mark is below the dipstick lower mark, the difference between the volume of the maximum mark and the minimum mark is 1 liter. Always use oil of the same specification.

Warning: If oil level is frequently low, seek a distributor and / or authorized service.

Lubricant oil and filter replacement

If the engine operates in regions with high dust concentration, or other harmful conditions to the good operation, it will be necessary to reduce the replacement periods, filter and lubricant oil.

Note: After the first oil and filter change at 15,000 km (9,300 mi) or 6 months, prevailing which one occurs first, lubricant oil must be replaced together with filter.

Warning: During drainage, lubricant oil is hot and may cause burnings.



1. Run the engine until reach the ideal operation temperature.
2. Stop the engine, clean the filling inlet cover and oil pan plug. Remove and let oil drain freely.
3. Check if the breather pipe is obstructed. If necessary, remove and clean it.
4. Remove lubricant oil filter, see OIL FILTER - Removal.
5. Assembly a new filter, see OIL FILTER - Assembly.
6. Assembly oil pan plug with a new washer.
7. Refill and assembly the filling inlet cover.

Note: Only use recommended lubricant oils Multi-viscous SAE 15W/40: CCMC D-5 / ACEA AND 3 / API CG-4

OIL PAN CAPACITY:

Minimum: 6 liters (without filter)

Maximum: 6.5 liters (with filter)

8. Start the engine.
9. Stop the engine, check level and eventual leakages existence.

OIL FILTER

Removal

1. Position a recipient under the filter.
2. Loosen filter counter clockwise, using a belt or a universal ribbon.

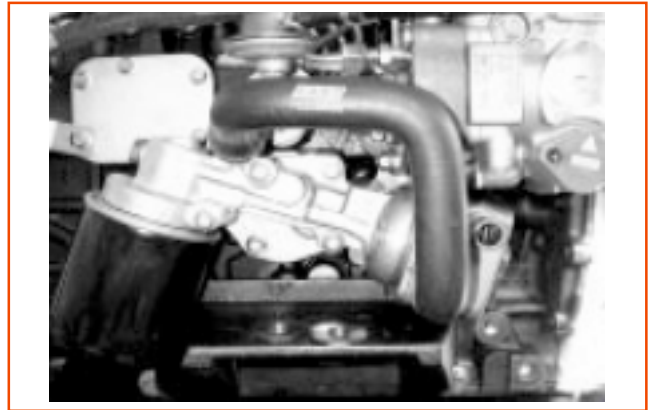
Assembly

1. Lubricate new filter seal with clean engine oil.
2. Screw manually the filter until the sealing ring touches the surface, manually tighten $\frac{1}{2}$ turn more, without tightening excessively.

OIL COOLER

Removal

1. Drain cooling system.
2. Remove water inlet and outlet hoses from the cooler.
4. Disconnect pressure switch.
5. Loosen fixation bolts and remove lubricant oil filter head complete with the gasket.



Installation

1. Clean contact surfaces.
2. Reinstall it with a new gasket.
3. Fix with bolts, tightening them according to specification.
4. Reinstall pipes and reconnect pressure switch.

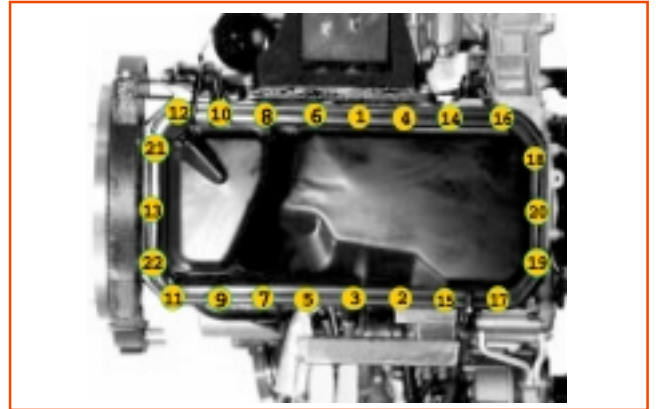
LUBRICANT OIL PAN

Removal

1. Drain engine oil.
2. Loosen oil pan fixation bolts and use a sharp knife, break the adhesive around oil pan flange.
3. Remove bolts in the inverse of the tightening sequence and remove oil pan.

Installation

1. Clean oil pan contact surfaces, timing housing and engine block.
2. Install new liquid gasket (LOCTITE 5900).
3. Fix oil pan to the block with bolts according to the illustrated tightening sequence, tightening them according to specification.

**OIL SUCTION PIPE****Removal**

1. Remove oil pan, see OIL PAN - Removal.
2. Remove pipe support fixation bolts.
3. Remove pipe flange bolt and oil pump connection.
4. Remove oil suction pipe.
5. Close oil inlet duct in the timing housing, avoiding dirt penetration.

Reinstallation

1. Reinstall oil suction pipe, installing a new sealing "o" ring in pump connection.
2. Apply Loctite 242 in the two bearing cap bolts. Tighten them according to specification.
3. Install bolts in pipe flanges and tighten them according to specification.
4. Reinstall oil pan, see OIL PAN - Installation.



LUBRICANT OIL PUMP**Removal**

The lubricant oil pump of the Turbocharged International HS 2.8L Engines is attached to the timing housing.

1. Remove timing housing, see TIMING HOUSING - Removal.
2. If it is necessary to replace oil pump, it is recommended to replace the whole timing housing, see TIMING HOUSING.

Recommended Lubricant Oils:

Note: Multi-viscous SAE 15W/40: CCMC D-5 / ACEA AND 3 / API CG4.

Note: Multi-viscous oil: Keep its features even with high temperatures variations. Use obligatory in International HS 2.8L Engines.