

Modern Automotive Technology Chapter 41

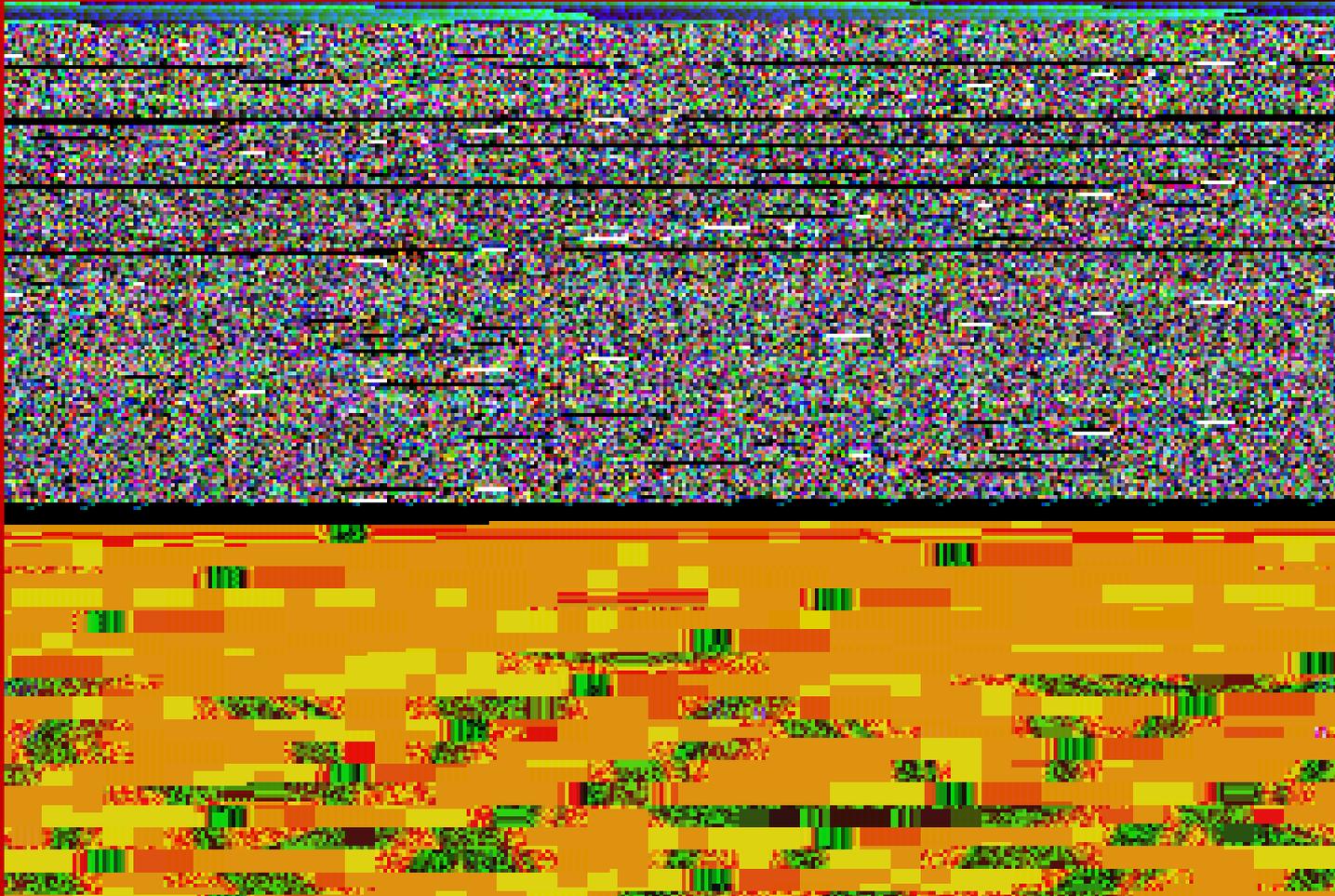
Lubrication System Fundamentals



North Montco
Technical Career Center

Chapter 41

Lubrication System Fundamentals



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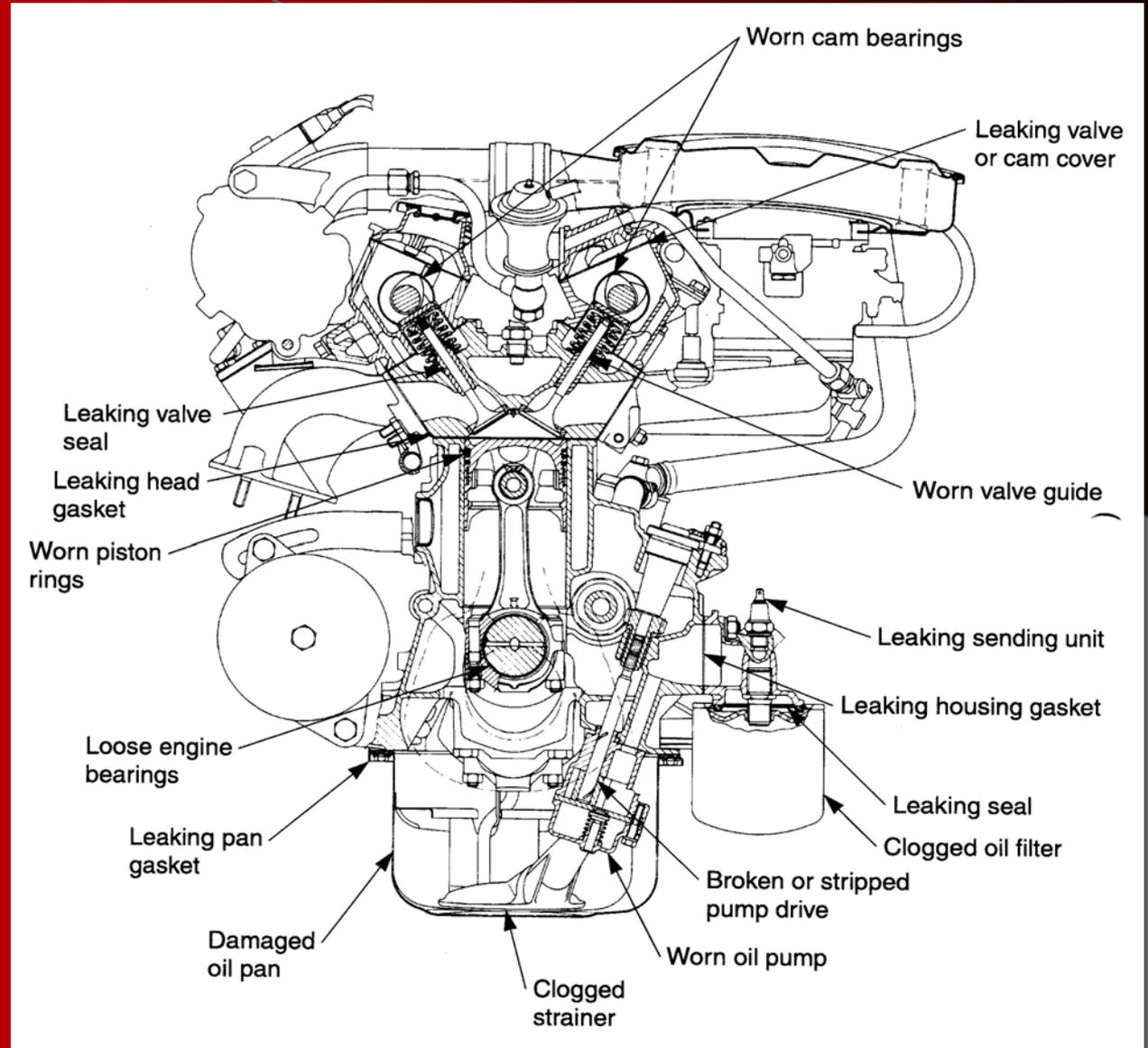
Learning Objectives

1. List the basic parts of an engine lubrication system
2. Describe the operation of an engine lubrication system
3. Explain the characteristics and ratings of engine oil
4. Describe safety procedures that should be followed when working with the lubrication system



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Lubrication (oil system) system problems



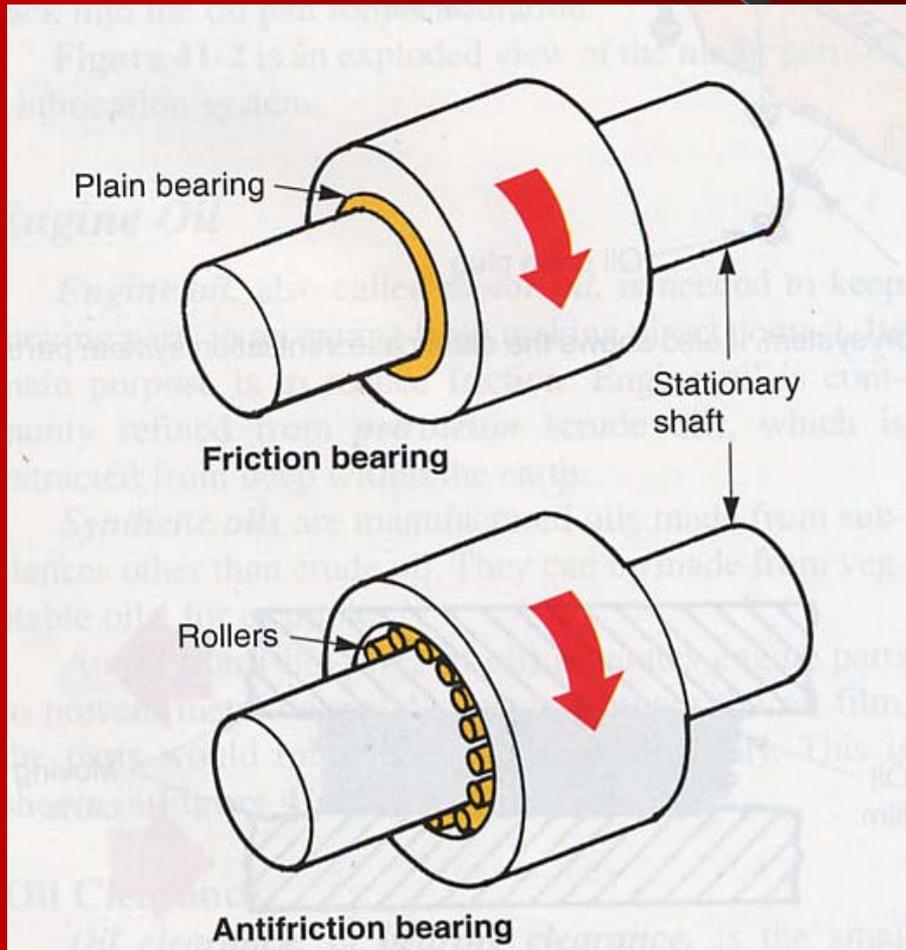
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1. An **ANTIFRICTION BEARING** uses balls or rollers to avoid a sliding action between surfaces.
2. An **OIL FILTER** is used to strain out impurities in motor oil.

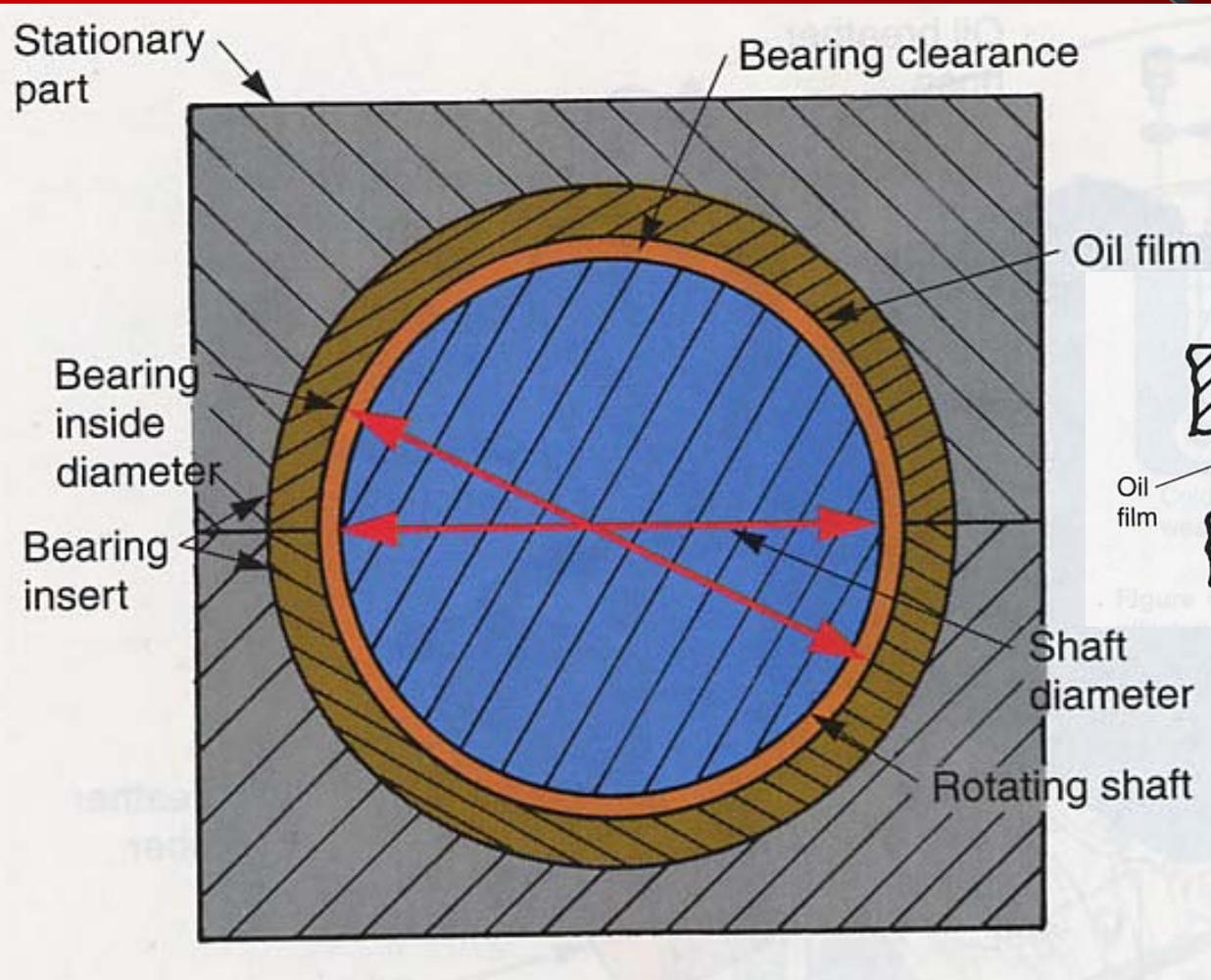
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Oil film

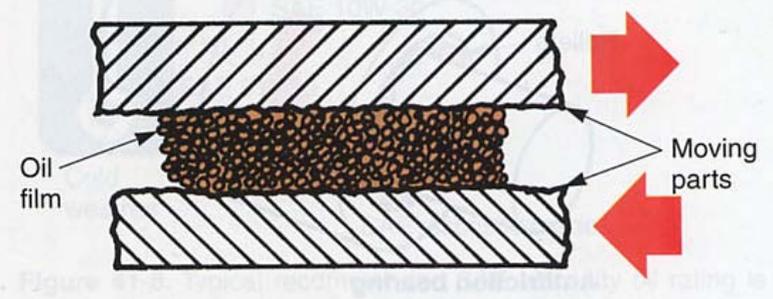


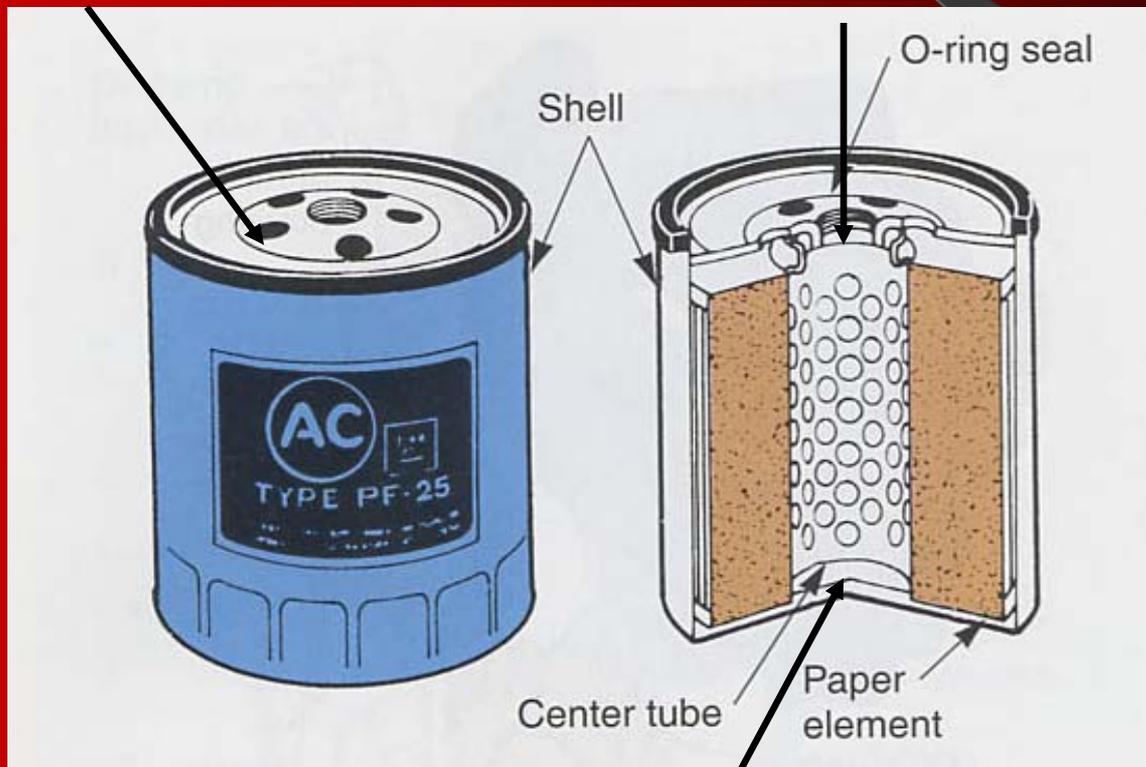
Figure 41-1 Lubrication of a bearing. The oil film is shown between the shaft and the bearing insert.

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Inlet Holes

Threaded Outlet Hole



By-Pass Element

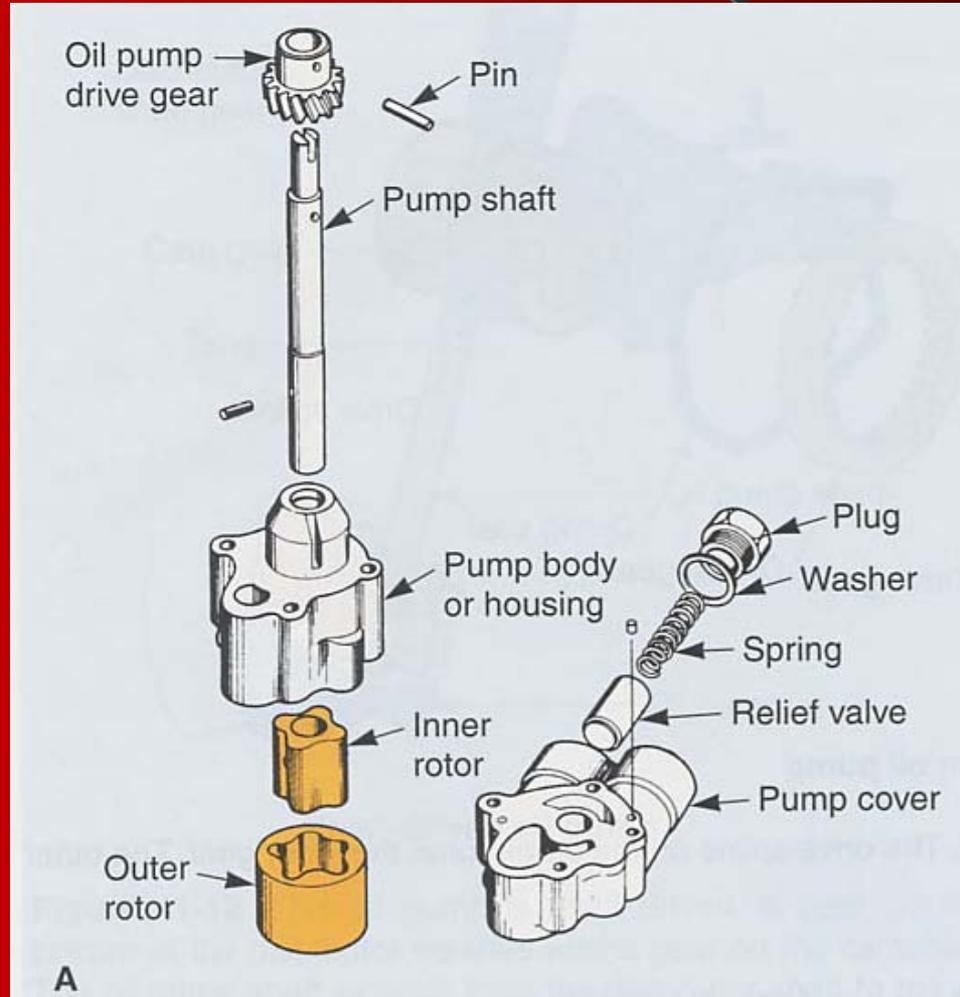
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3. A spring-loaded, bypass valve in the oil pump, engine block, or oil filter housing is known as the **PRESSURE RELIEF VALVE**
4. The **POSITIVE CRANKCASE VENTILATION SYSTEM (PCV)** helps prevent engine sludging, which could restrict oil circulation.

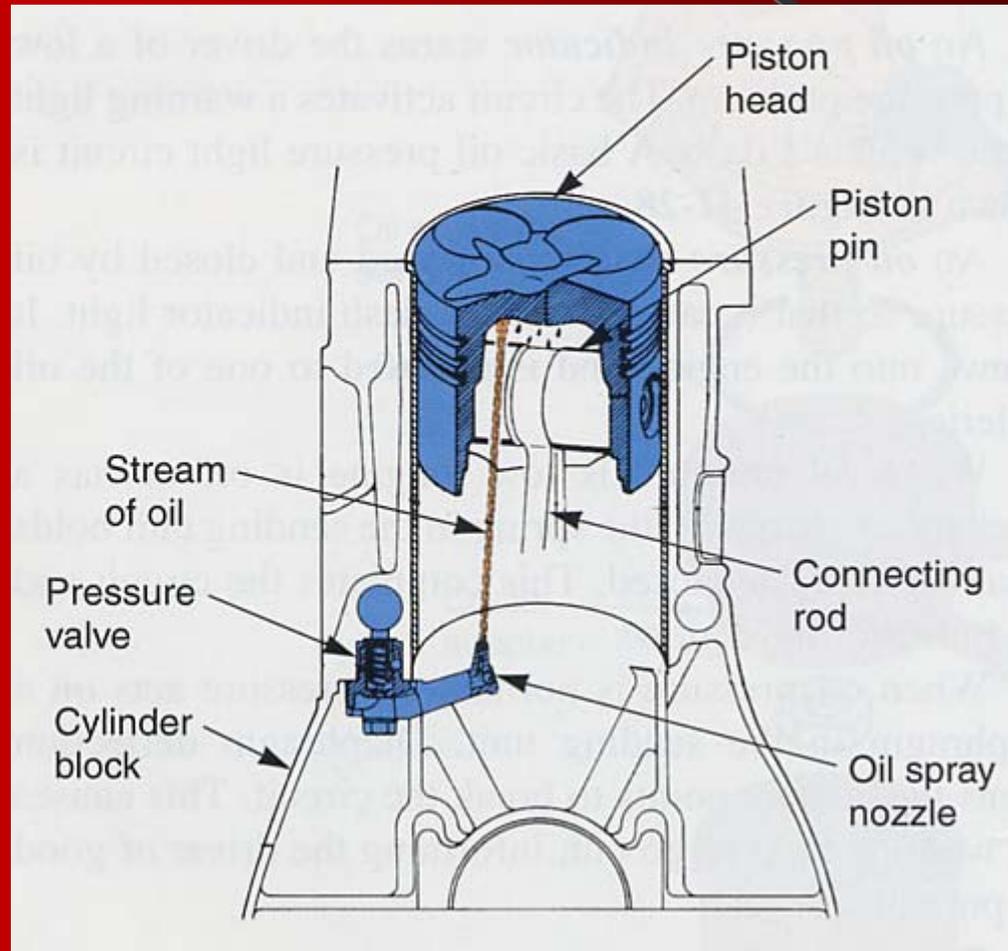
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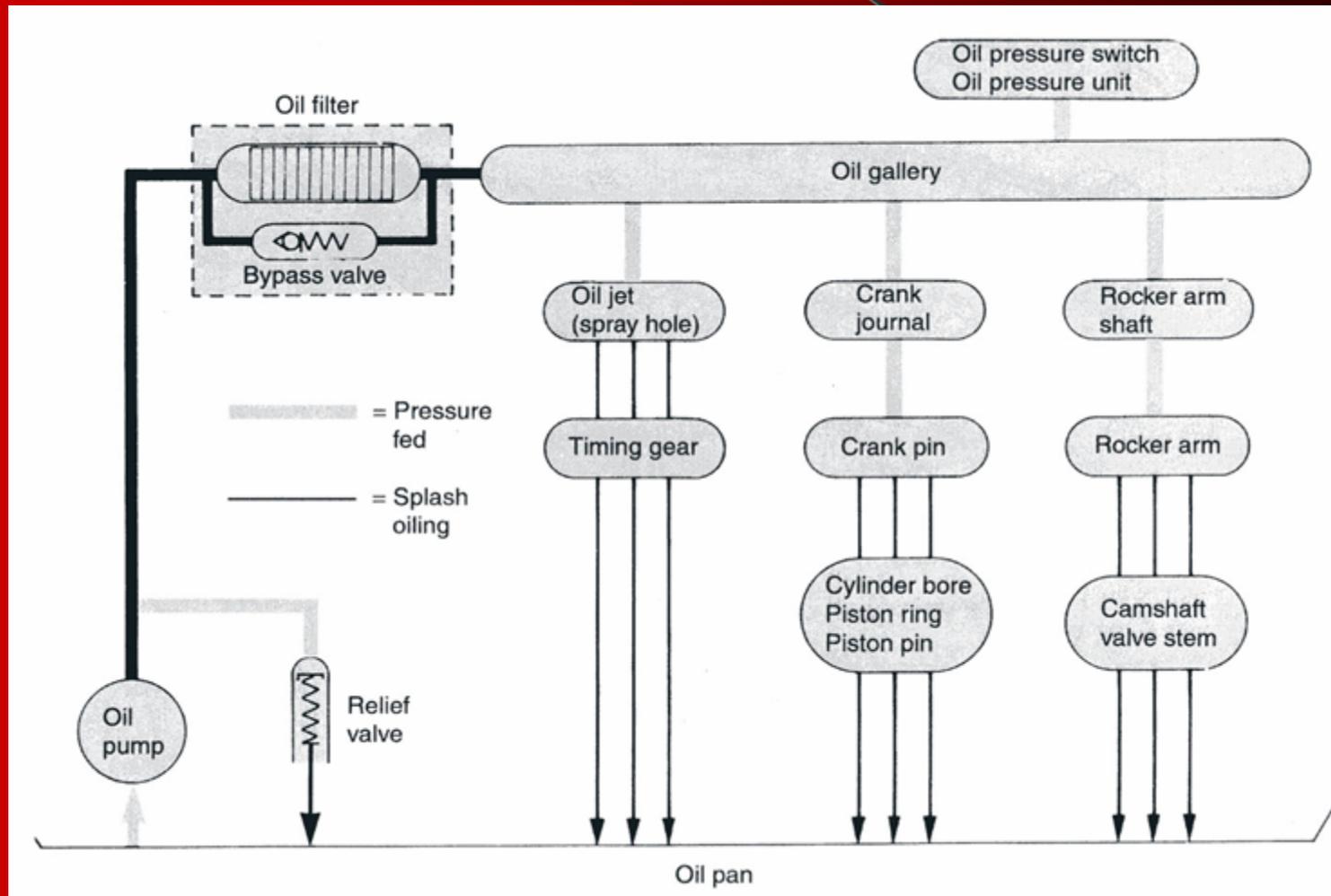
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5. **MOTOR OIL** lubricates moving parts in the engine.
6. Oil passages through the engine are called **OIL GALLERIES**.

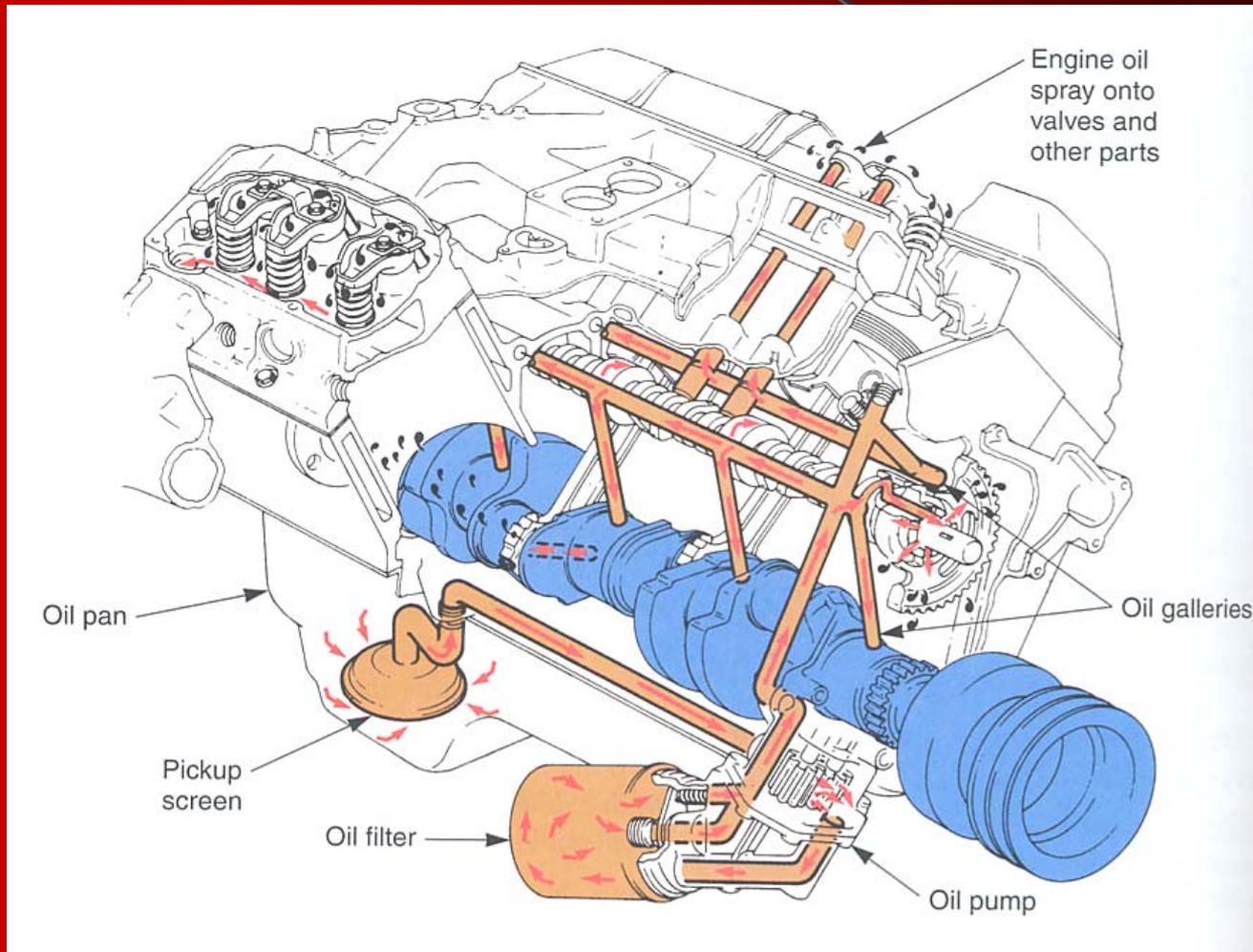
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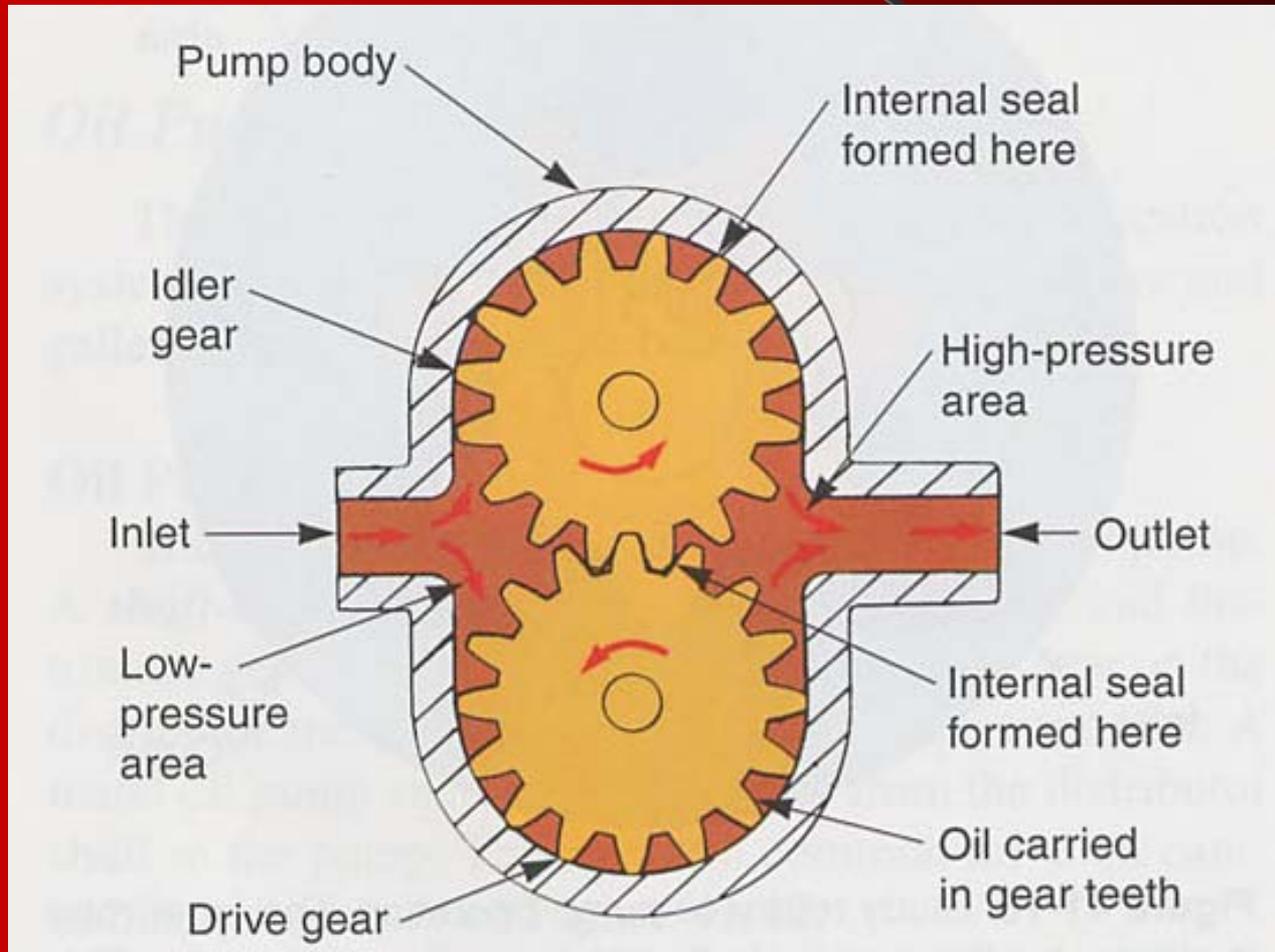
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7. Oil is forced through the inside of the engine by an OIL PUMP.
8. A FRICTION BEARING has two smooth surfaces sliding on each other.

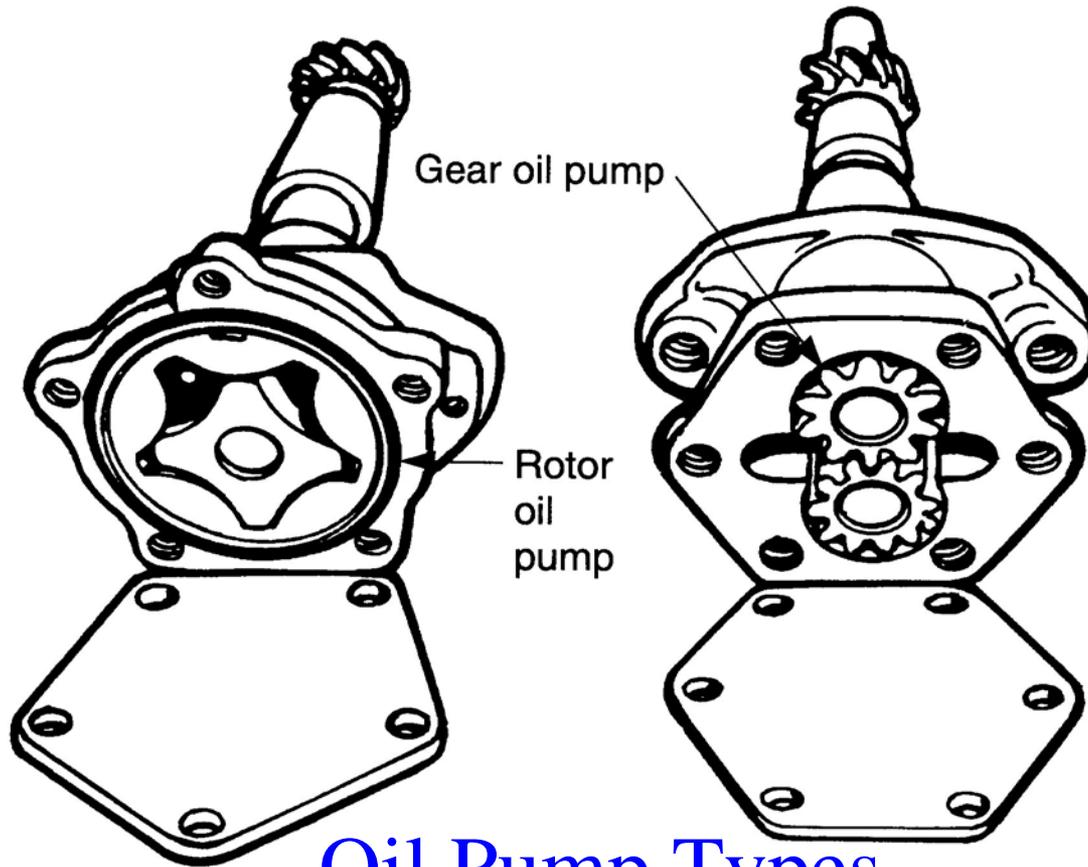
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Oil Pump Types

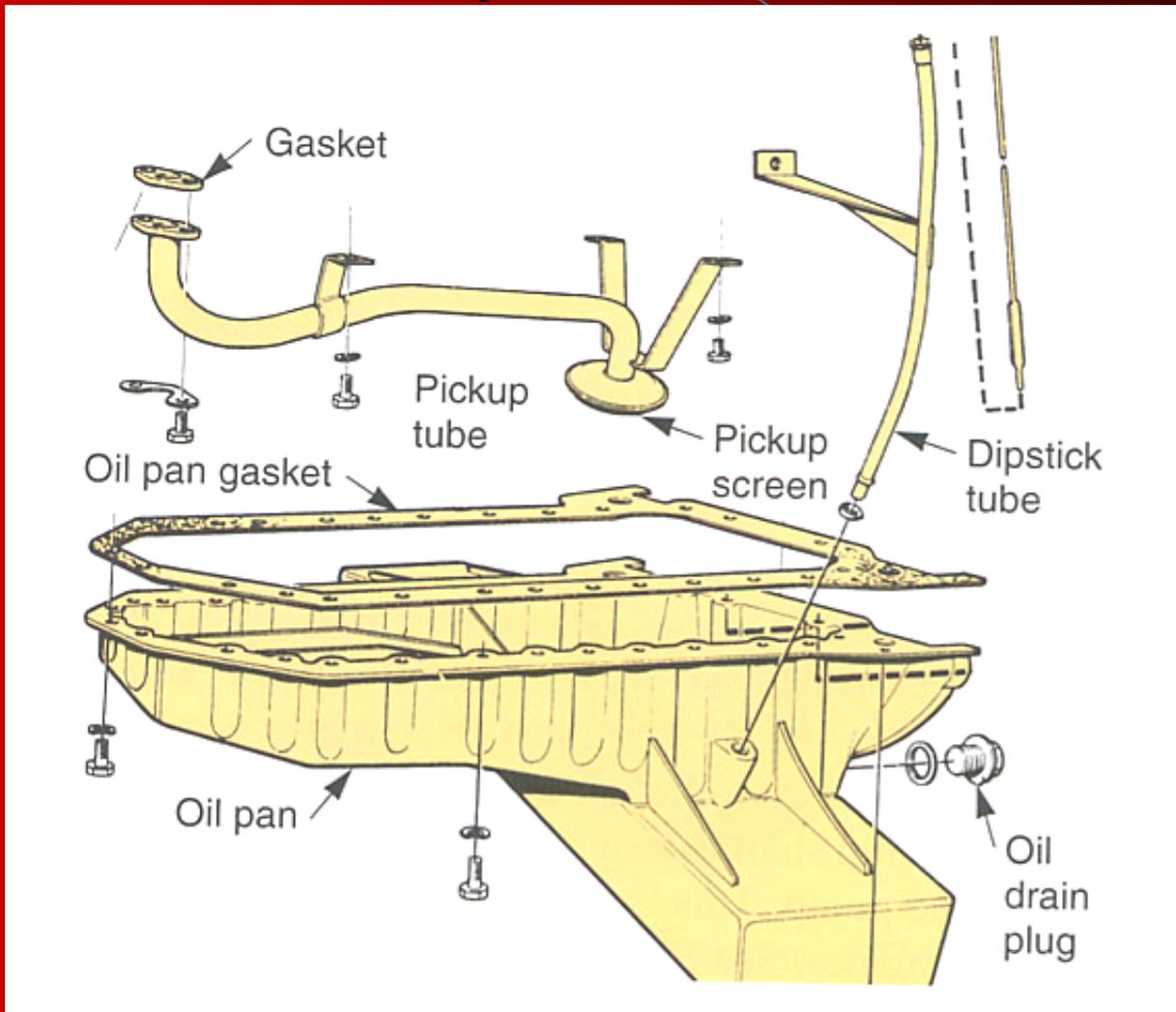
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9. The **OIL PAN** is the storage area for motor oil.
10. **OIL VISCOSITY** is the thickness or fluidity of motor oil.

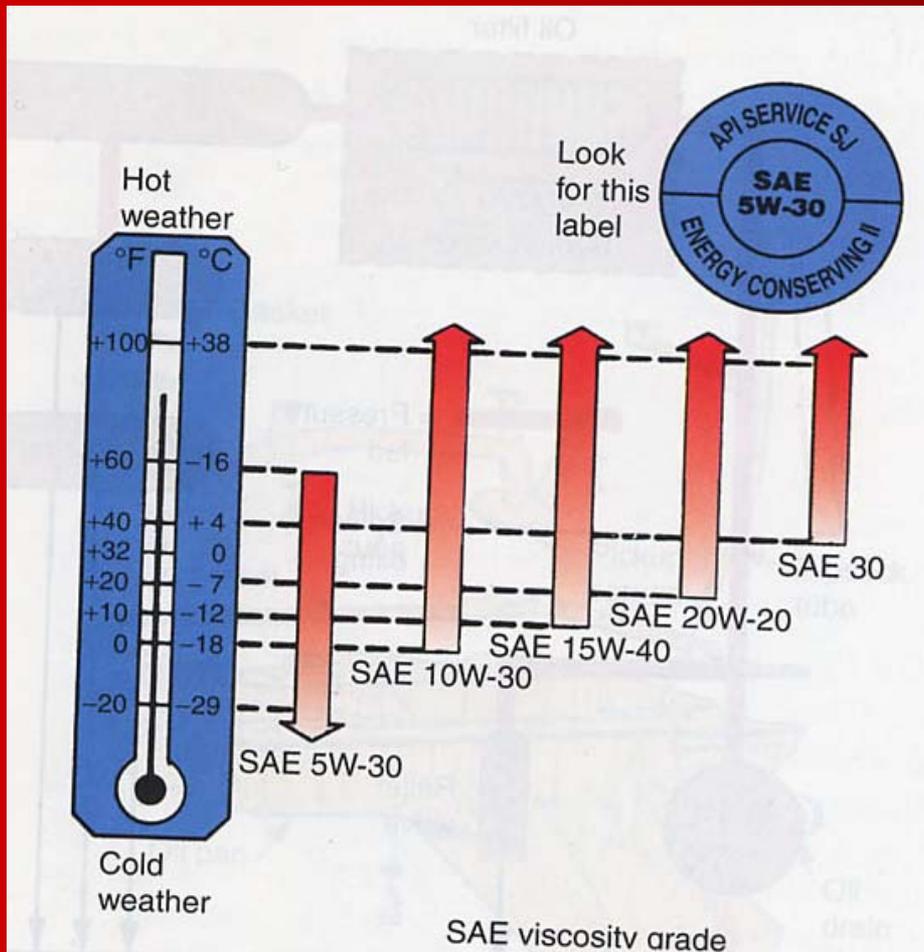
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SAE oil viscosity rating is affected by temperature. Note how thicker oil (higher SAE number) is specified for higher outside temperatures

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Engine Oil – lubricant for moving parts

Oil Pan – storage area for engine oil

Oil Pump – forces oil through the inside of the engine

Pressure Relief Valve - limits maximum oil pump pressure

Oil Filter – strains out impurities in the oil

Oil Galleries – oil passages through out the engine

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