

Modern Automotive Technology Chapter 42

Lubrication System Testing,
Service and Repair



North Montco
Technical Career Center

Chapter 42

Lubrication System Testing, Service and Repair

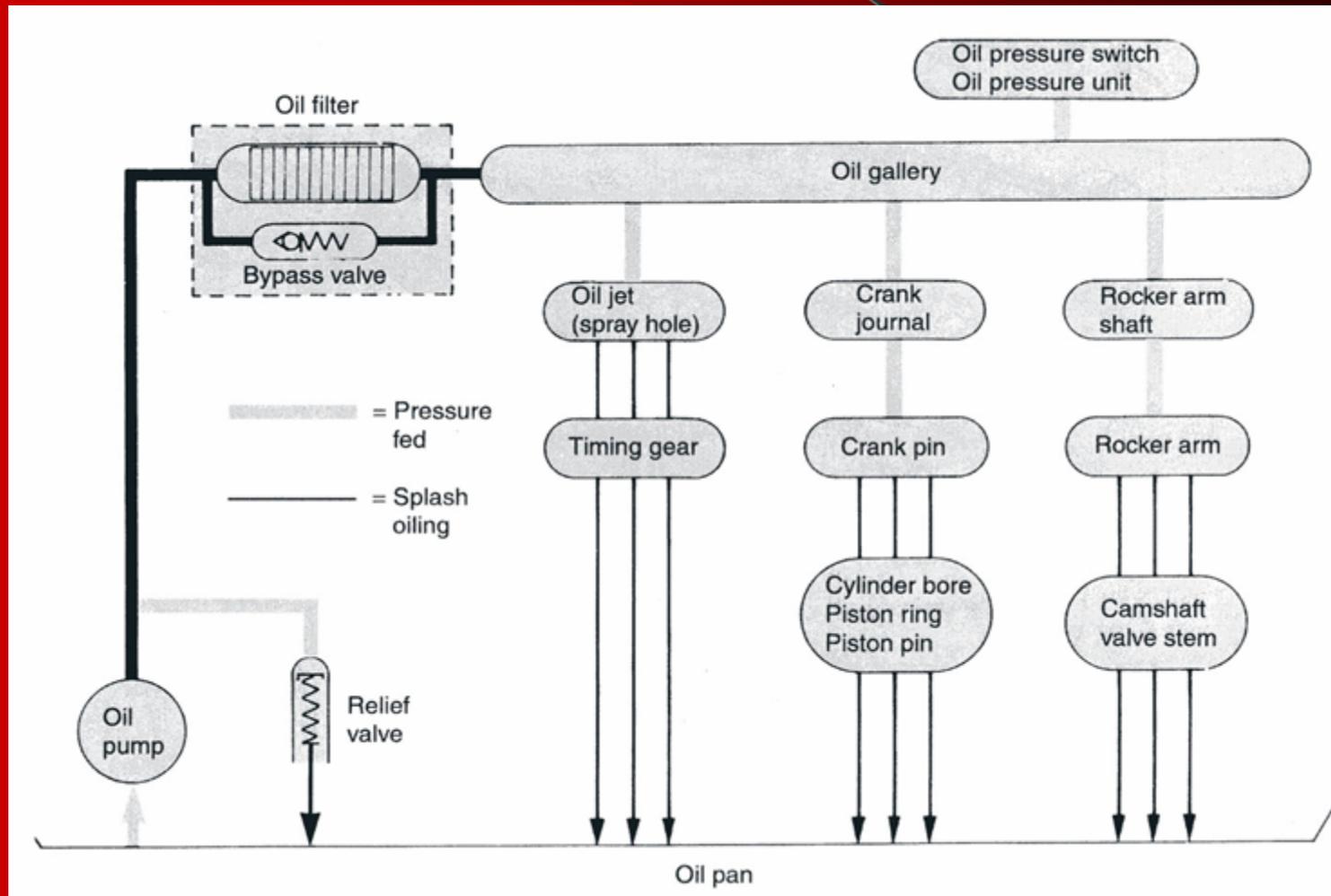
Learning Objectives

1. List common lubrication system problems
2. Diagnosis lubrication system problems
3. Measure oil pressure
4. Change engine oil and filter
5. Service an oil pump



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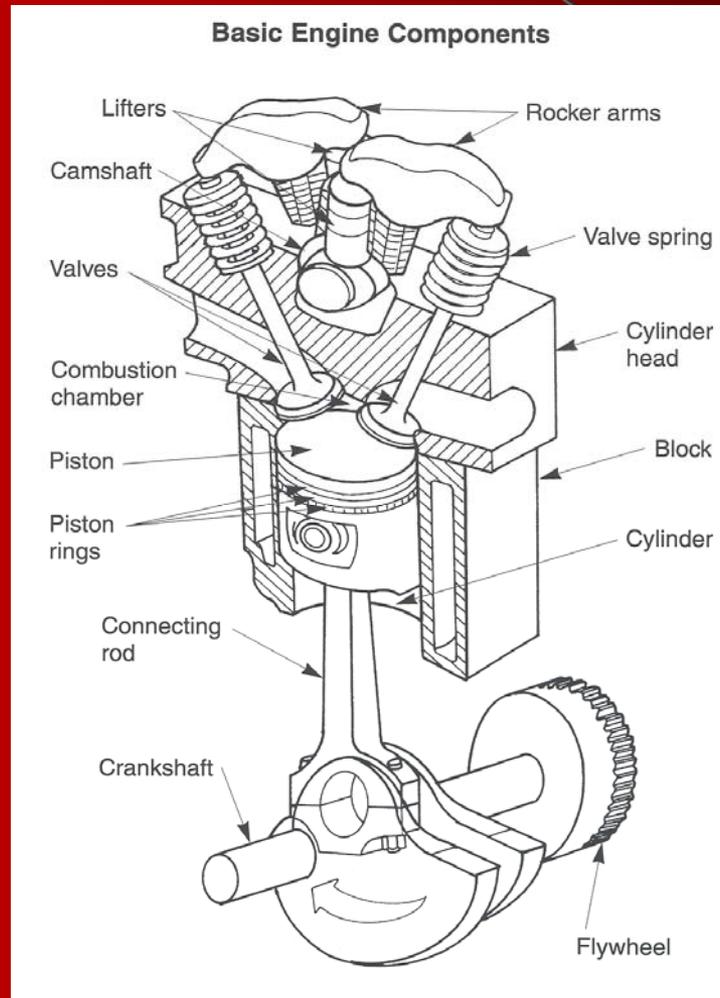
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1. **PRELUBRICATION** can be used to pinpoint worn engine bearings or other worn parts that lower oil pressure.
2. An **EXTERNAL OIL LEAK** can be easily detected as darkened, wet areas on or around the engine.

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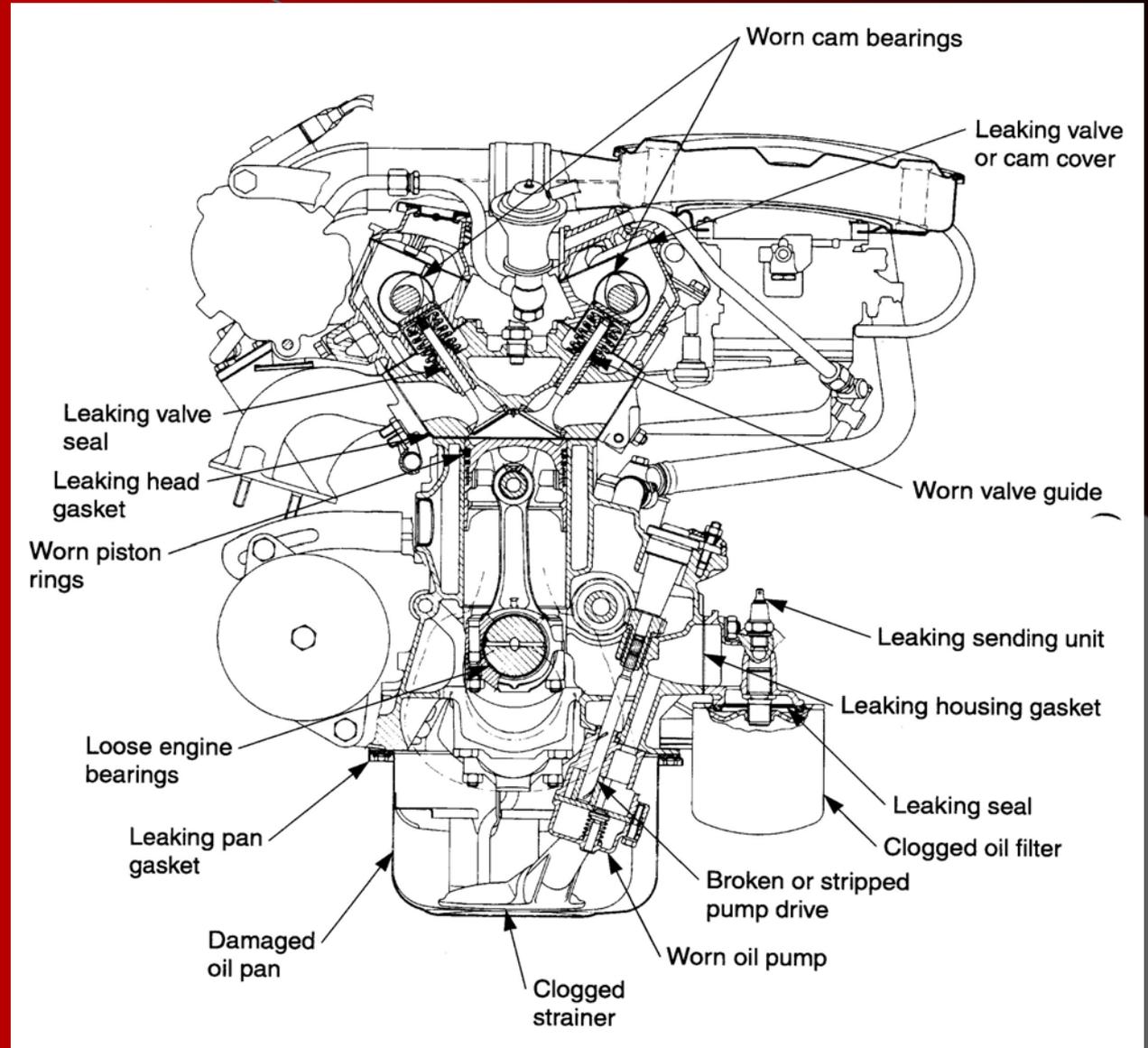
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3. **OIL DYE** is a special coloring used for testing purposes.
4. **PRIMING** the oil pump before installation will assure proper initial operation upon engine starting.

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Lubrication (oil system) system problems



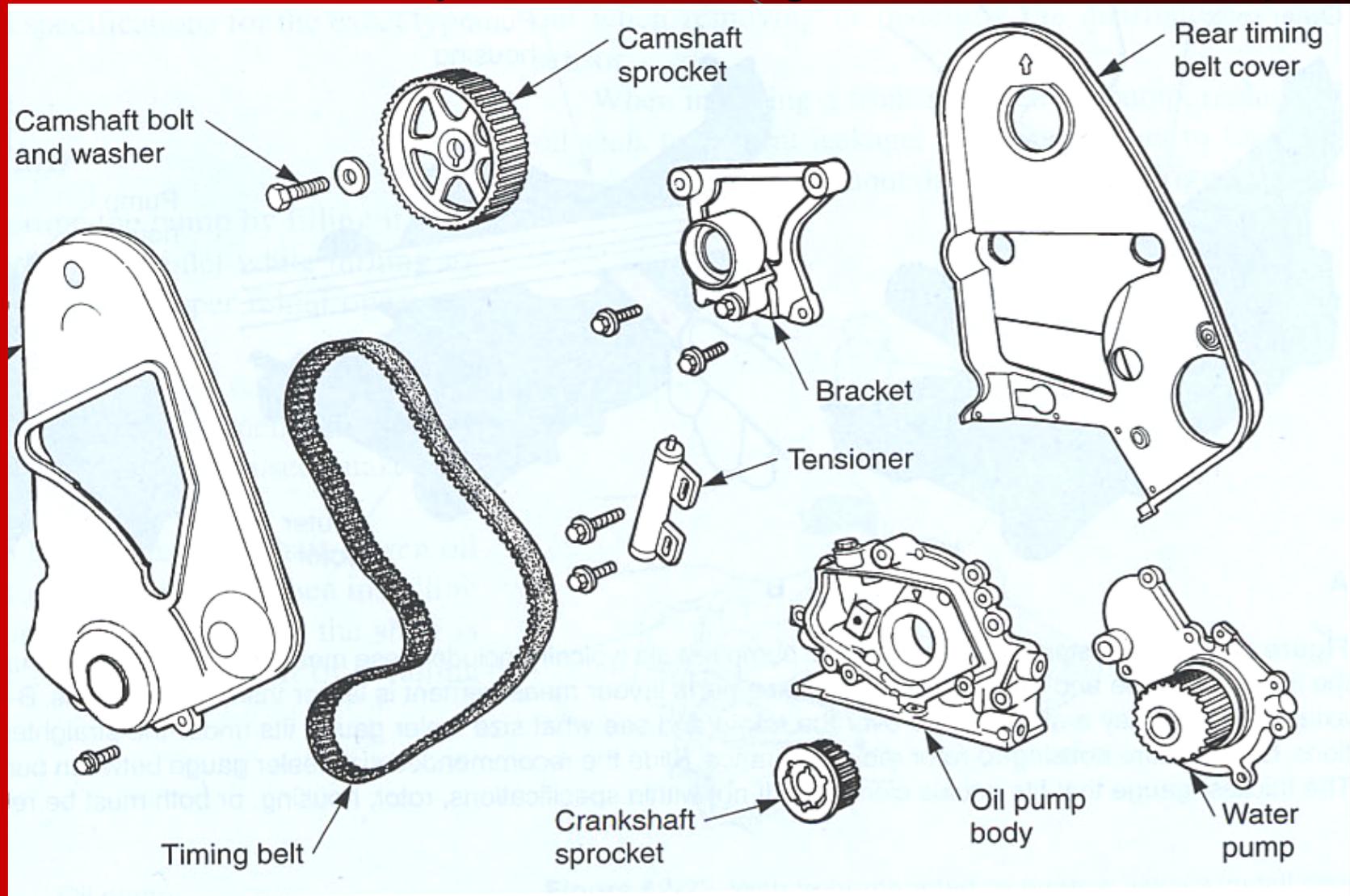
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5. **LOW OIL PRESSURE** is indicated when the indicator light glows, the gauge reads low, or when the engine lifters or engine bearings rattle.
6. **USED OIL** is contaminated with dirt, metal particles, carbon, gasoline, ash, acids, and other harmful substances.

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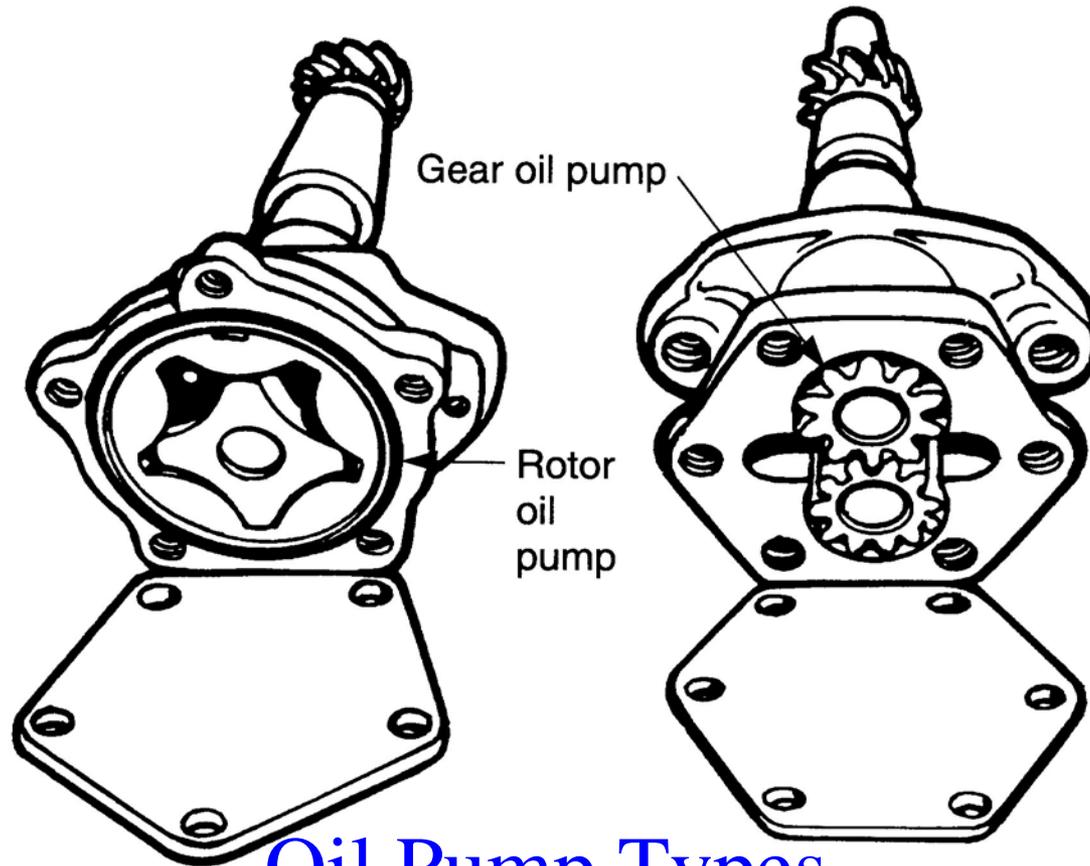
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7. An **OIL PRESSURE TEST** uses a gauge to measure actual pressure in the engine.
8. **INTERNAL OIL LEAKAGE** usually shows up as blue smoke coming out of the vehicle's exhaust.

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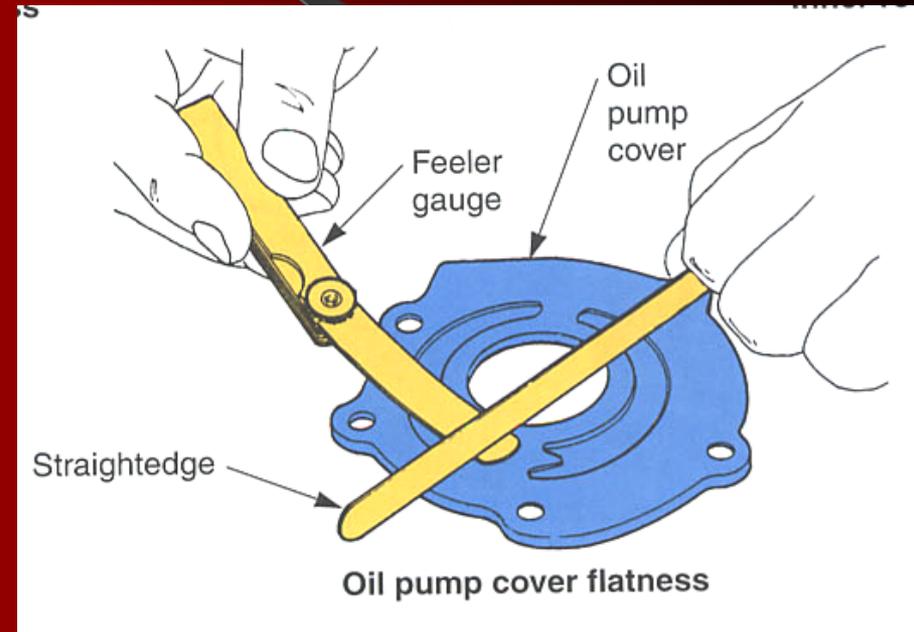
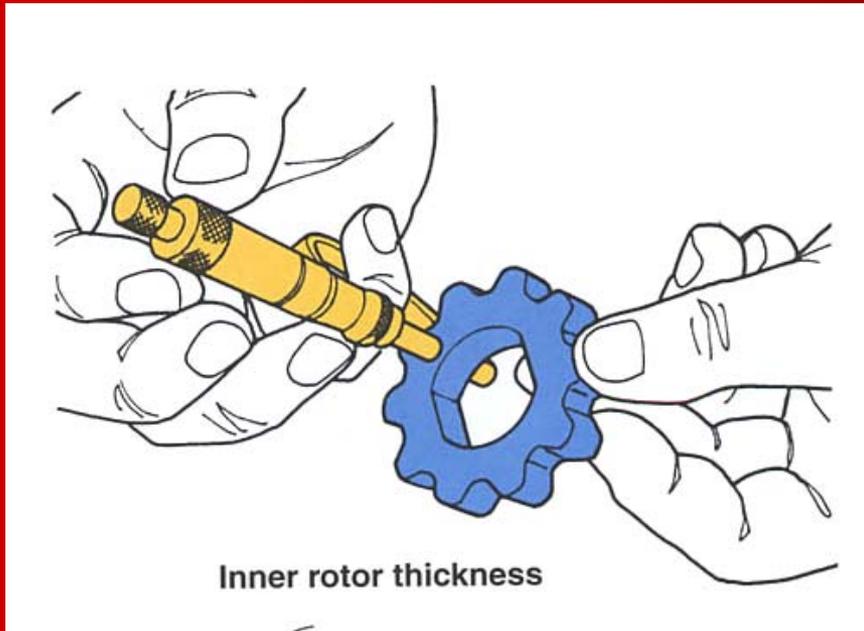
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Oil Pump Types

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Measuring Oil Pump Cover and Gear (Rotor) Thickness

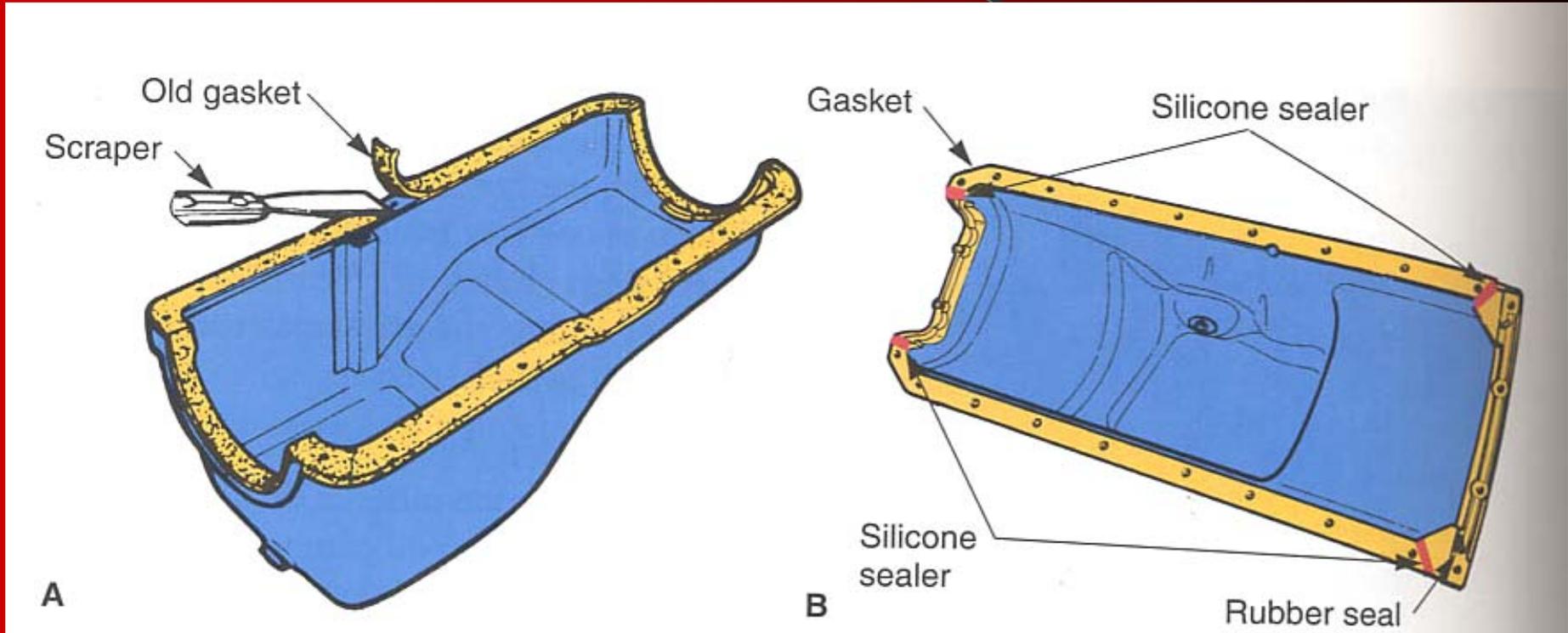
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9. A **GASKET CUTTER** (gasket scraper) is used for freeing stuck gaskets.
10. Adjusting or measuring the **SPRING FREE LENGTH** is a step in pressure relief valve service.

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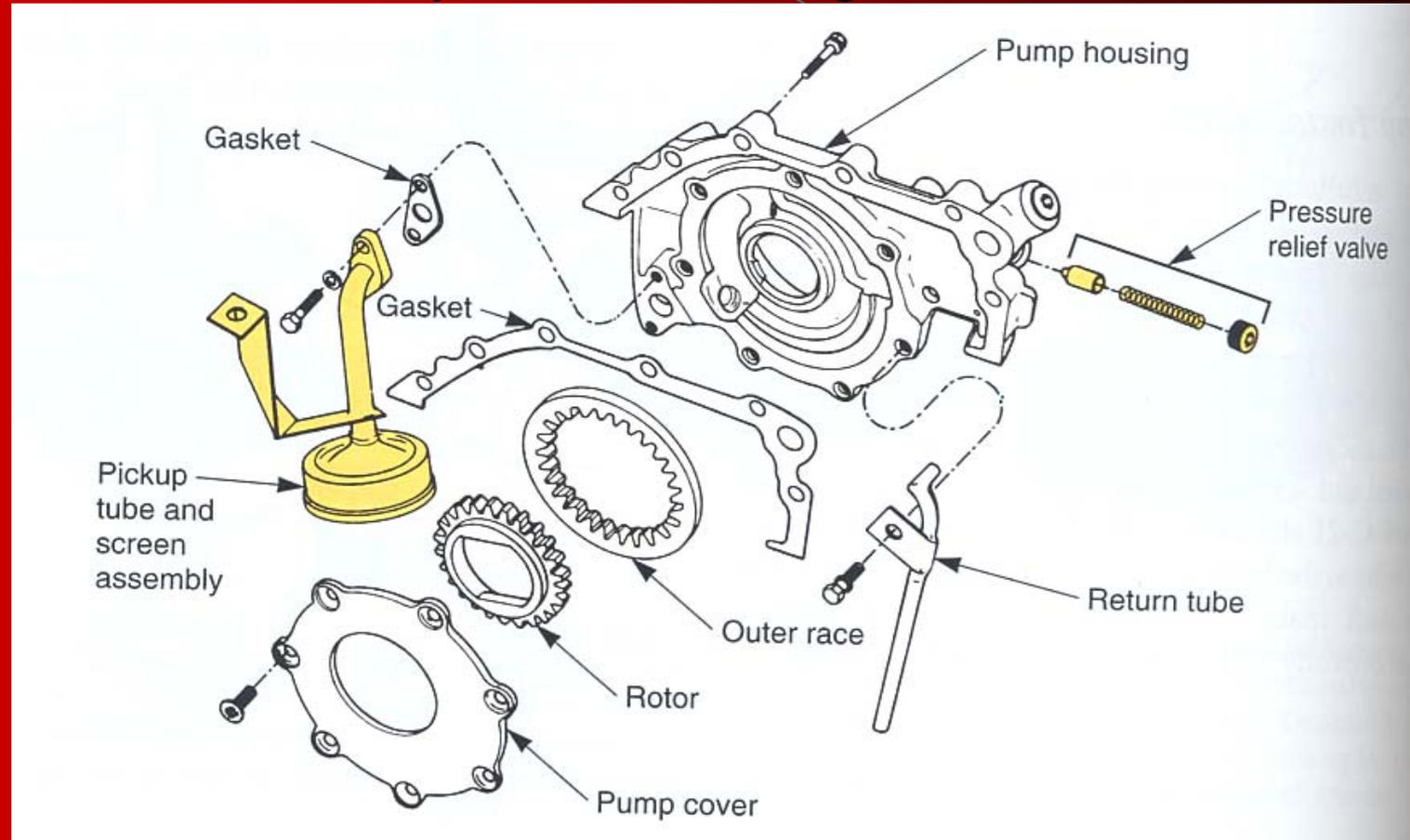


Using a gasket scraper to remove an old, stuck old stuck-on gasket

Applying silicon sealer where gasket butt together

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Exploded view of an oil pump that is mounted to the front of an engine.

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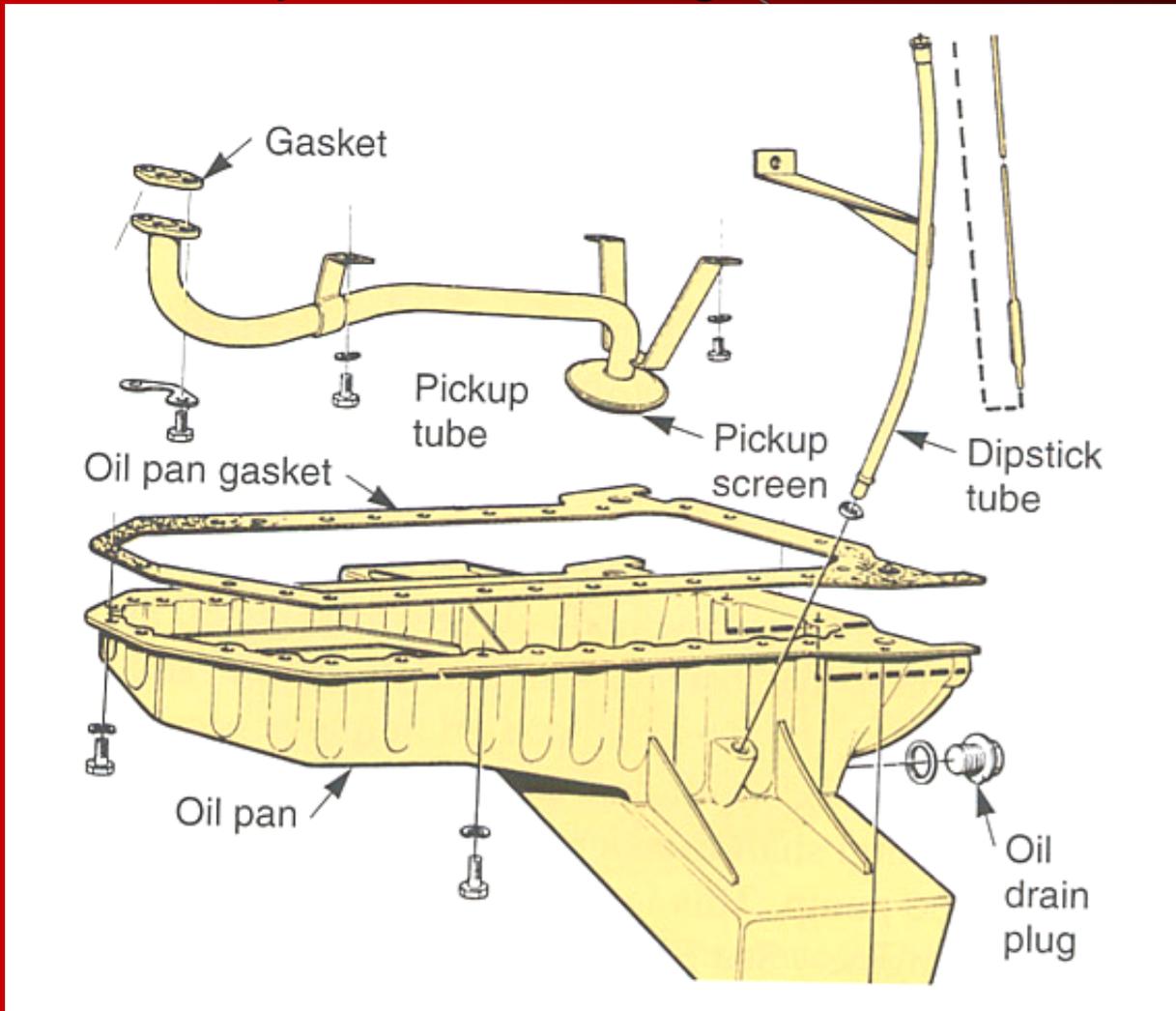
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Installing RTV where the gasket meets a rubber seal. This is to prevent leakage

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1. Without a properly functioning lubrication system an engine will self-destruct in a matter of minutes
2. High oil consumption is caused by external or internal oil leakage
3. Automakers specify oil change intervals
4. Never over tighten oil pan bolts
5. A faulty pressure relief valve can cause oil pressure problems

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