



This sludge-covered valve side cover is an example of what happens to an engine when dirty oil is used

than 180 deg. F., and preferably should be between 160 and 180 deg. F. The proper operating temperature is important as it affects the efficiency of the lubricating system.

Poor crankcase ventilation, especially in a cold-running engine, will cause extra condensation of water in the crankcase. Short runs in cold weather aggravate this condition. Check and clean the crankcase ventilator openings at regular intervals. Wash the filler cap in gasoline and then reoil. An efficient oil filter is helpful in maintaining a clean oil supply, provided the filter element is replaced regularly. However, a filter does not eliminate the need for a regular oil drain; it simply permits the extension of time between drainings. Always renew the filter element when changing to a premium grade of oil. An oil that looks clean may contain too much acid and fine abrasives for safe lubrication. Only a complete draining, flushing and oil renewal will provide adequate protection.

As the cost of a complete oil change is small compared to the yearly bill for gasoline, repairs, storage, etc., it pays to drain and flush the engine oiling system at least twice a year—spring and fall. Without an efficient filter, draining should be done more often. Flush the crankcase at each draining. Use a flushing oil, which has the properties of a light lubricant, to eliminate any danger of the bearings running dry during the flushing process. Always drain the oil when hot and be sure the drain plug is replaced tightly. See that the plug gasket is in good condition. Check the oil level after the engine has run awhile.

Remember that the filter takes about a quart. When checking the oil level, allow time for the oil to drain back to the crankcase to get an accurate reading. In both new and reconditioned engines, a light-grade lubricating oil should be added to the gasoline for upper-cylinder lubrication. Too heavy an oil may foul the plunges and

cause extra deposits of carbon and gum around the valves, pistons, etc.

Generator and starting-motor bearings, if provided with oil cups, require a few drops of light motor oil at regular intervals. Clean the cups before oiling to prevent dirt getting into the bearings. Do not over-lubricate. Use a high-temperature grease in the distributor-shaft grease cup, and put a few drops of oil on the felt pad under the rotor. Smear a little grease on the rotating cam face to save wear in the breaker assembly. Water-pump lubrication varies, and some have bearings that do not require lubrication. Use a medium oil in the water-pump oil cups and a special water-pump grease in the grease cups. This grease will resist heat and the dissolving action of water. Do not overlubricate the pump.

Use a small amount of chassis lubricant for engine fans having pressure-type fittings, and a motor oil for those having sump-type lubrication.

Impurities wash past or blow by the pistons into the crankcase instead of being blown out of exhaust pipe

