

Fig. 7—Timing Chain and Sprockets

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| 1—Chain case (integral with crankcase) | 5—Timing chain |
| 2—Camshaft sprocket screw | 6—Timing marks |
| 3—Camshaft thrust bearing screw | 7—Crankshaft sprocket |
| 4—Camshaft sprocket | |

Repairs to the timing chain should be entrusted to Dodge Brothers Service Stations, as a variation of only one tooth on the sprocket will make a marked difference in the operation of the car.

Cooling System

The radiator is of the cellular type, connected by short pieces of hose to the engine. The fan is driven by the crankshaft through a V-type rubber cord belt. This belt also drives the generator. The water pump impeller in the cylinder block, just behind the fan, is driven by an extension of the fan shaft.

Care

The cooling system should be drained (drain cock at bottom left corner of radiator) and flushed occasionally to remove dirt and sediment. If the radiator is removed from the car, the ideal way to flush the radiator is to invert it and force the water through the bottom connection to remove large particles collected in the top tank. Very hard or lime water should not be used in the system. Because of the scale-forming chemicals it contains, its use will cause scale to form on the walls of the inside of the

radiator and cylinder water jackets, which, in a short time, will restrict the circulation of water. The water passages in the radiator core are very small and if care is taken to use soft water at all times these small water passages will not become clogged with the scale, which is very difficult to remove.

Lead and oil paint should never be put on the radiator core because it forms an insulation that retards dissipation of heat.

Hose connections should be kept tight. Soft hose should be replaced with new, firm pieces. Mounting studs and the screws holding the core in the shell must be kept tight. Radiator compounds or other liquids should not be used for stopping small leaks because they generally block the passages in the radiator, which necessitates an overhauling.

Steaming

When steam comes out of the radiator it is an indication that the water is not circulating properly or that an insufficient supply of water is in the system. Very often if the water in the radiator is frozen, the radiator will emit steam, because ice has obstructed the circulation, and the water around the cylinders is being boiled. A frozen cooling system should be thawed as promptly as possible. There is a great possibility of ice causing much damage to the engine water jackets, pump, and radiator, especially if the overflow pipe in the radiator is clogged.

If an engine is run at a high temperature due to an insufficient supply of water or obstructed water circulation, care must be taken to allow the engine to cool before refilling the radiator. Cold water making contact with an extremely hot cylinder may crack the cylinder casting.

Adjustments

The fan belt is adjusted by loosening the two bolts at the bottom of the generator, one at the front and the other at the rear, which hold the generator on its mounting. The bolt which locks the generator in place in the slotted segment at the front of the generator should then be loosened. The generator can then be swung outward on its bracket, thereby tightening the fan and generator drive belt. The belt should not be adjusted too tight; it should only be brought to a very slight tension.

The water pump packing nuts should be turned to the right or clockwise for tightening. Binding the pump shaft should be avoided by not tightening beyond the point of stopping the leak. If, however, the leak is not stopped by turning the adjusting nut, the packing should be replaced.

Non-Freezing Solutions

At the first indication of freezing weather the cooling system should be filled with a good non-freezing solution. Denatured alcohol and water in proper proportions make a very good solution, but care should be taken to prevent its spilling on the lacquer finish of the car. If this does happen, the solution should be quickly flushed off the lacquer finish with water so as to avoid spotting or bleaching the finish, because alcohol is a solvent of lacquer. Alcohol evaporates from water and, when refilling the radiator is necessary, it is generally best to refill with clear denatured alcohol instead

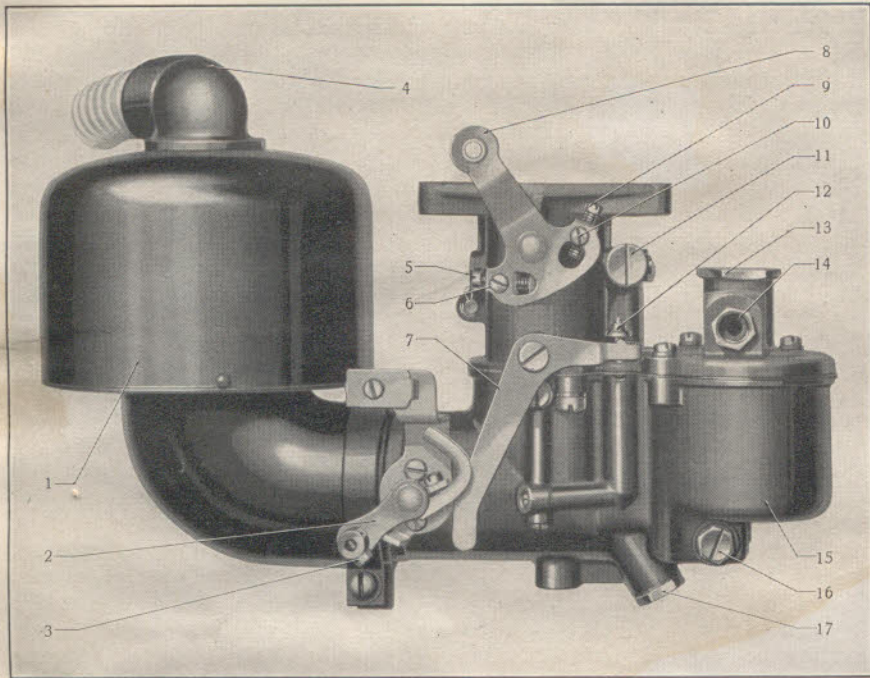


Fig. 8—Carburetor and Air Cleaner

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| 1—Air cleaner | 10—Throttle adjusting screw lock screw |
| 2—Choke lever | 11—Idle and low speed adjusting screw |
| 3—Choke wire clamp screw | 12—Auxiliary control needle |
| 4—Crankcase ventilator connection | 13—Fuel strainer cap |
| 5—Closed throttle adjusting screw | 14—Fuel inlet connection |
| 6—Throttle adjusting screw lock screw | 15—Float chamber (carburetor body) |
| 7—Auxiliary control lever | 16—Main metering orifice (float chamber drain plug) |
| 8—Throttle lever | 17—High speed fuel jet |
| 9—Open throttle adjusting screw | |

of water. Such a solution should be tested about once a week to make certain that it will not freeze in the prevailing temperatures.

Under no circumstances should a calcium chloride solution be used. It has a chemical action on different metal parts of the entire system and in a short time will cause damage.

The following formula is dependable for a good non-freezing solution at all temperatures indicated. Capacity of the cooling system is 16 quarts.

Freezing Point Fahrenheit	Percentage Alcohol	Amount of Alcohol U. S. Measure	Amount of Water U. S. Measure	Specific Gravity
20°	10%	2 qts.	14 qts.	.981
10°	25%	4 qts.	12 qts.	.971
0°	35%	5½ qts.	10½ qts.	.959
-10°	40%	6½ qts.	9½ qts.	.950
-20°	45%	7½ qts.	8½ qts.	.943
-30°	50%	8 qts.	8 qts.	.933