Expert Advice For the Automobile Owner

Queries and Replies Covering Matters of Importance to the Man Who Runs a Car

Will you please tell me how to line up the front wheels of a car?

In lining up the front wheels the first thing is to make sure that the wheel bearings are properly adjusted. They should be just tight enough so that there is no side play in the wheels; but, on the other hand, they should not be so tight that the wheels bind and do not turn freely. This done, take a long stick or rod that will reach from the inner edge of one rim across to the inner edge of the other. Then measure the distance between the rim edges horizontally back of the center of the wheel. Mark this distance on the stick and then try it on the rims horizontally in front of the wheel centers. The front distance should be one-fourth inch to three-eighths inch less than the distance across the backs of the hubs. If you find these distances are not correct you can get the proper adjustment by taking up or letting out on the steering cross rod, which parallels the axle and runs across just back of it. First loosen the lock nut at one of the ends, then take out the pin that goes through the steering arm and yoke and screw the yoke out or in, as the case requires. Then check the wheel alignment again and tighten the lock nut.

What is the object of a clutch brake?

A clutch brake is a device to check the momentum of the clutch while changing speeds. Usually when the clutch is thrown out or disengaged it tends to spin for some time, due to the momentum it received from the engine. The clutch brake rubs on the clutch or clutch shaft in such a manner as to slow it up so as to make quiet gear shifting without having to wait for the gears intended to be meshed to assume approximately the same speed.

When taking down my car I put the cylinders into a solution of caustic soda to remove the old paint and have found that the solution acts as an excellent carbon remover. It scales the carbon right off and leaves the surface cleaner than after scraping. Could you tell me if it would harm the motor to inject it into the cylinders and let it stand for a day or two, then start up the motor to blow the carbon out through the exhaust? If some of it went by the pistons would it have any effect on the lubrication? Does it attack iron?

Your suggestion regarding removal of carbon is very interesting, and it should cause no difficulty provided care is taken, but otherwise great havoc may result.

Caustic soda, caustic potash or sodium or potassium hydroxide will not injure iron if left in contact with it for only a day or so, but all these solutions quickly dissolve aluminum and eat bronze and brass; consequently it is imperative that none of the solution you use come in contact with these substances.

In other words, it is perfectly safe to clean the carbon out by this method, provided you have the cylinders off, but it is doubtful if you will find it safe with the motor assembled unless it happens that your pistons and crank case are iron or steel.

A particularly violent action might be set up if the pistons are aluminum, the aluminum and cast iron forming a battery, and rapid corrosion would result.

It is dangerous to use this solution when the crank case is aluminum, as some of the liquid might leak down and attack it. This applies to motors with crank case bottoms of aluminum. If the upper half of the crank case is aluminum and the bottom is of steel there is small cause for worry.

Any of the solutions mentioned will not attack lubricating oil or any mineral oil, but vegetable oils will be turned into soap.

In using an alcohol and water mixture is there any way of telling, except when first mixed, the percentage of alcohol remaining in the solution?

By the use of a hydrometer. You can fill the radiator with what you consider the correct proportion of alcohol and water for the temperature conditions of your locality and then test this solution with a hydrometer to determine its specific gravity. Once you have found the figure for the correct mixture you can tell thereafter whether the percentage has dropped by new tests with the hydrometer.

What is the difference between direct current and alternating current?

In direct current the electrical circuit is in one direction at all times; in alternating current the electrical circuit varies its direction intermittently. To make this clear suppose you put a straw into water and drew with a steady suction with the mouth at the other end of the straw. The water would pass up the straw in even flow in one direction. The electric current does the same thing in all direct circuits. Now, suppose you suck and blow on the straw, alternating the efforts evenly. The water will pass rapidly up and down the straw. This corresponds to the way the electric current acts in an alternating circuit, although the alternations are of course tremendously fast. As an example of the speed of the alternations a lamp bulb in an alternating current gives a steady light without flicker.

Will you please explain what is meant by back firing?

Back firing usually implies that ignition takes place in the cylinder before the piston reaches the dead center of the compression stroke, thereby causing the crank shaft to reverse. If this occurs when the operator is holding the crank it produces a back kick which is liable to dislocate the shoulder or otherwise injure the arm.

The term back firing is also applied to an explosion occurring in the cylinder during the inlet stroke of the piston. This would ignite the gas in the intake manifold and mixing chamber of the carburetor. Should gasoline be near the carburetor it may cause a serious fire.

Will you please explain why valves are reground by alternating rotary motion in view of the fact that valve tappets are arranged to give the valves a slightly continuous rotary motion in service? Also, what are the objections to the continuous rotary motion in regrinding?

Valves are ground by an alternating rotary motion to avoid scoring the seats or the valves themselves. You know that if you were sandpapering a finely finished piece of wood, such as an automobile body, preparatory to painting it you would not draw the sandpaper around in a continuous path, for that would leave ridges or scratches. The same applies to grinding in valves.

Can you tell me the best method of cleaning leather upholstery?

The best thing to apply to the upholstery if you would preserve its softness and keep it from cracking is a good leather dressing preparation. There are a number of good ones on the market. Water in which there is a little ammonia is also a good leather cleaner, and after using it a soft cloth should be employed to rub the surface of the leather dry.

What causes gasoline to drip from my carburetor for a few seconds after stopping the motor?

Probably the float is not adjusted properly.

Do oversized pistons tend to make a motor heat?

Yes, if they are so tight that they are stiff and create too high compression. If they allow the proper clearance they do not overheat the motor.

When removing a storage battery, if the generator wires were connected, why would not that prevent the windings from burning out?

Because if the generator is passing current through itself without any outlet the voltage builds up rapidly and at high speeds it can reach the point where the windings will be burned.

If I change a one and one-fourth inch carburetor to a one and one-half will it increase speed without making the intake manifold larger?

This depends entirely on how well the present size of carburetor and size and design of manifold are adapted to the engine in question. Ordinarily when the carburetor for touring is replaced by one of larger size more speed results.

Why is the distance between the front wheels of a car greater at the top than at the bottom?

The reason for this is to make steering easier. The object of tipping the wheels in this manner is to bring the point of contact between the wheels and the ground in a vertical line below the axis of the steering knuckle. When the line of the center of the steering knuckle produced is coincident with the contact of the tire and the ground there is no tendency for the wheel to be thrown out of line when an obstruction is met on the road. On the other hand, were this point to be somewhat inside of the point of contact of the wheel and the ground there would be a tendency for the wheel to be turned about the steering knuckle whenever an obstruction was met, with the result that there would be an interference with the steering.

How can I tell whether my motor is timed correctly? When cranking the motor slowly with the spark advanced it kicks back. Does this show that it is properly timed?

Your motor is probably timed correctly. If you wish to check up on the timing set the spark at full retard and the piston of No. 1 cylinder at top dead center. Then examine the breaker box mechanism. If the points for No. 1 cylinder are just ready to break the timing is correct.

Should there be any up and down play in an oil pump drive shaft and would this play cause a knock audible every revolution of the cam shaft?

The oil pump drive shaft should be rigid, and if it is loose it might cause a knock.

Can the axle shafts in a semifloating axle be taken out without dissecting the axle? If so, how is this done?

In a semifloating axle the shafts cannot be removed without going to the trouble of removing the shaft bearings which are housed in retainers. The latter are in most cases screwed into the housing.