

Expert Advice For the Automobile Owner

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

There is an irregular rick in my motor which is particularly noticeable at high speed. What may be the trouble?

The causes of an irregular rick at high speed are: 1. Sticking valves or a weak valve spring may produce this trouble. If the former can be found to be the cause, and the remedy is some oil on the valve stem, unless the stem is warped by the heat, in which case it will need to be ground up in a lathe, while the latter can be found out by inserting a screwdriver between the ends of the valve spring, one by one, while the motor is running at high speed. If the rickling occurs when this is done the rick is due to a weak and should be replaced. The position of the screwdriver between the ends of the spring is to increase the compressive strength.

Rooted spark plugs, loose connections, spark wire joints too tight together, improper contact of the distributor brushes due to weak springs or worn brushes, loose points too near together, leakage of current due to worn insulation or possibly loose magneto parts or worn bearings are the causes of irregular firing that may be produced by the ignition system.

Missing at high speeds can be blamed on the fuel system if there is dirt in the carburetor line or on the spray nozzle or float chamber. It may also be caused by the sticking of the float or the auxiliary air valve.

Is it easier to pump a tire with a jack under the wheel or with the weight of the car upon the tire?

It is easier to pump the tire with the jack under the wheel. The last ten or fifteen pounds, however, should be put in with the jack removed.

I have heard that one should use an oil in winter that will not get stiff. Can you tell me what kind of oil to use?

Cold will tend to thicken almost any oil, but in order to reduce the congealing a lighter oil is used in winter. In the gear set and axle housings, for example, instead of using the regular summer grade of heavy oil or grease most makers recommend cylinder oil, which is much lighter in body than those mentioned. There are many grades of cylinder oil, and if you will ask your dealer for one of light body and use it in the gear cases instead of regular transmission oil you will have little trouble. The average oil in the motor causes little trouble, but in order to assist the electric starter, should you have one installed, you might try a lighter oil than you are at present using.

In cone clutches I notice there are two different types where the action of the spring is in opposite directions when it engages in the flywheel. Can you give the name of each type and explain their action?

The types you refer to are the inverted cone and ordinary types. In the former type the spring is on the inside and in the latter on the outside of the clutch itself. The difference between the engaging members is in the direction of slope of the cone. In the ordinary type, the small portion being on the inside and the large diameter on the outside, whereas in the inverted cone it is just the opposite. By pressing the pedal of an ordinary cone clutch the spring is carried backward for compression, whereas in the inverted cone, the spring being on the opposite side, it is compressed by a forward thrust.

There is a swishing sound issuing from the neighborhood of the right front wheel of my car when it is in motion. It seems to occur once every revolution. What can be causing it?

There are two very likely causes of such a noise. It may be due to the speedometer gears meshing too tightly or the demountable rim may have a wedge loose. Jack up the wheel and rotate it slowly and you can soon determine whether the gears are too tight. If this is the case loosen up the rim that carries the driven gear and move the gear only far enough away so that the noise is eliminated. If the trouble is not found in the speedometer gears tighten up the wedges on the rim. One loose wedge will make a noise similar to that you have described due to the lack of support at this point.

The platinum points in my breaker box burn out in four or five months. Can you tell me why this is?

Intermittent point destruction usually is caused by poor adjustment and care of the points. If the points have too much clearance between them, allowing arcing, the heat produced will destroy the metal in a short time. The points should be dressed three or four times a year by filing with a very fine file. Special magneto rules are supplied by the maker of the instrument or any accessory house.

In ordinary practice at advanced spark how far from the top dead center should the spark occur in inches?

The advanced spark may occur anywhere from one-half to one inch before top dead center. In many racing cars the magneto is set so as to produce a spark more than one inch before center.

Can the low speed of an ordinary gear set be changed to a lower ratio without changing the two higher speeds?

If the gear box is well laid out in the first place the change of the lowest gear will cause the proper progression of the other gears to maintain. In most instances the gear box is laid out on either a geometric or arithmetic progression. Therefore if the lowest ratio is changed it will throw the proper progression from one gear to another. An arrangement of this kind therefore should not be done unless the gear box is designed in the first place.

Can you give me the recipe of a few of the best oil emulsions which would be used in prime movers in case of hard starting in cold weather?

A good grade of kerosene, one which will burn without soot, is perhaps as good as anything you might expect. The use of mixtures of ether and gasoline or kerosene and gasoline will give a more lively expansion, but these are not advised. If you do wish to use these elements the kerosene should be mixed in the proportions of one ounce to five ounces of gasoline and the ether three ounces to five gallons.

How often does a magneto have to be remagnetized?

Much depends upon the conditions under which the magneto operates. Once a year appears to be the average period.

I have a four cylinder car which I am stripping for a racing type roadster. I wish to make it as light and fast as possible. Will you please give me some information on this matter?

First decrease the weight of the vehicle as much as possible, removing all unnecessary parts—that is, unnecessary equipment. Since wind resistance is a great factor it becomes evident that every effort should be made to streamline the car. A long, tapered hood, coming almost to a point, as in some racing cars, is good. Just enough space should be left in front to allow air currents to reach the radiator. It is considered as important to care for the rear of the car as it is to look after the front in this respect. After the parts have been streamlined as much as possible the mechanical end should be considered. If possible the valve seats should be increased in size and new and larger valves obtained. The size of the valve seats may be increased with a counter bore. The lift of the valves may be increased slightly by using larger cams. Setting the magnets ahead will cause the motor to stop if the throttle is set down too far. If possible use a larger carburetor, for if the intake valves are made larger more mixture can be accommodated. The frictional loss in the motor is reduced somewhat by removing one of the piston rings, but if the pistons have but two narrow rings this should not be done. Lighter pistons help matters materially. Some use an aluminum alloy, some steel or steel, while others take the old pistons and drill holes in them. Each piston should weigh the same as any other piston. Use lighter connecting rods if possible, but do not remove metal from the old ones, for the strength may be impaired. New rods of stronger metal and thinner section or hollow rods are better. One of the first essentials for a speedy car is to have a pressure oiling system, with a hand control on the dash or other place within easy reach of the driver. This consists merely of a hand pump drawing oil from the tank and forcing it to the crank case. Ball check valves properly placed can control the direction of flow. The motors of nearly all racing cars are equipped with magnetos of the double distributor type, so that they feed to two sets of spark plugs at the same time.

Are there any differentials in use which push and brake equally where mud or slippery road is encountered—in other words, where one wheel is on a dry spot and the other on a slippery spot, will the dry side do the pushing until both wheels slip instead of the slippery side spinning and killing the pushing power on the dry side, as is the case with most differentials?

There are several differentials on the market which claim to give positive traction. One of these works on the ratchet principle, another with a series of steel balls placed between peculiarly curved plates and others with varying mechanical principles applied.

I have trouble changing the gears of my car from first to second. At times it will change perfectly, and the next time the gears will grate. The gears shift easily while the car is not in motion. What is the matter?

Your trouble probably is due to dirty oil in the motor. The motor and clutch case are lubricated by the same oil, and when it has been used a long while it becomes sticky and interferes with the free action of the clutch. Drain the old oil out, rinse the system thoroughly with kerosene, crank the motor several times with the spark off and then put in fresh oil. You should have no further trouble unless the grease in the gear box is too heavy or the box is too full. You should use a very light nonfuld oil or a heavy cylinder oil in the gear box.

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