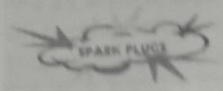

By Eddie Loader

Most owners know that the spark plug ignites petrol mixture in the cylinder bores of their engines, but although most plugs look similar in appearance, there are sufficient differences in the internal composition designed to suit varying engine demands.

The obvious physical differences are in the diameter of the threaded fixing section. Two common sizes are used in Austin Seven engines, 18mm used up to the introduction of the Mk2 Ruby and afterwards the 14mm modern appearance plug was universally fitted. The most important hidden differences in both types of plugs are the composition of the section that protrudes into the cylinder and is in contact with the petrol mixture. Different working conditions inside the cylinder bore demand the use of plugs with a choice of heat ranges to suit. The efficient working of the engine is almost totally dependant on the correct type of plug used. Nearly all pre-war car engines were designed with low compression ratios, under stressed and with low maximum R.P.M.s but they all tended to suffer from a common problem of cylinder bore oil burning. This can quickly cause a spark plug to be fouled with oil deposits, short out the ignition spark with the resultant misfiring.

To prevent this problem most pre-war cars used a plug called a hot running type. This means that the construction of tip and core are such that they allow them to reach a sufficiently high enough temperature to burn off the oil deposits before they can cause harm.

Unfortunately the use of a hot running plug cannot be considered to be universally suitable for all engines because if used in a higher stressed engine that naturally develops higher temperature, the plug tip will overheat and prematurely ignite the petrol mixture. This is, of course, more commonly known as pre-ignition or "knocking' and be very harmful to the health of the engine.

To prevent this pre-ignition occurring, a cold running plug was used. Use of cold running plugs in pre-war cars is not common; their use was usually confined to the odd high performance or racing cars. Needless to say the Austin Seven engine in normal road use is ideally suited to a plug with a hot running tip.

Now the problems start to arise for the original specification 18mm plugs ceased production many years ago and can only be obtained if old stock is lucky enough to be found. Of course it is still possible to purchase newly manufactured18mm plugs but whilst these look similar to the original, they can very much differ "Xerox Serif Wide" SIZE=1>in the choice of heat ranges. The heat range normally varies from normalto cold running and it is difficult to obtain a hot enough plug to self clean oilcontamination. Whilst these modern plugs will cause no problems if your car engine isin good condition, they cannot cope with any excessive oil burning without fouling the electrode and subsequently misfiring.

We all seem to own Austin Sevens that sometime in their life suffer from cylinder bore oil burning in varying amounts. The obvious answer is of course engine reboring or re-ringing, but provided plug misfiring can be avoided, the Austin engine will perform and run quite happily for many years whilst still suffering from excessive oil consumption.

Now there is an alternative to spending your life scouring autojumbles for original 18mm plugs and that is to purchase a set of 18mm to 14mm adapters. These screw into the cylinder head and allows the use of the modern 14mm plug. These threaded adapters are usually available from the normal Austin Seven spares specialist. Or failing this try a vintage motor cycle specialist. The immediate advantage of being able to use the modern 14mm plug is the choice of a complete heat range to suit all types of engine working conditions.

I have found from experience that providing your engine is in reasonable condition, then a long reach plug normally used in Morris 1000's and early Mini's (N9YNN9YC) will run with no problems. If oil consumption is excessive ask your spares dealer for a hotter running plug. For information in the Champion plug range, the higher the number the hotter the plug, but please ask your supplier to check on his specification chart.

There are several things to be aware when intending to use modern plugs. Firstly, is the common use of a resistance type plug in today's engines. These are used for the purpose of radio suppression and also tend to intensify the spark generated at the plug tip. The use of this particular type is not recommended on pre-war engines because they demand a substantially higher current from the high tension circuit. This higher current will always seek the play of least resistance, usually tracking through the Bakelite insulation in the distributor cap and base. This tracking, once it is allowed to develop, will inflict permanent damage which is irreparable. So always make sure you ask for a non-resistant plug, they are usually marked though with their serial numbers being preceded with the letter "R'.

Needless to say the resistance type plug is absolutely forbidden in engines that have magneto ignition unless you would like to become on first name terms with your magneto rebuilders!!

Secondly the other thing to be noticed when selecting modern plugs is to be aware that some modern cars use 18mm plugs. (Mostly Fords between 1970 and the 80's) Whilst this looks the easy answer they are in fact not suitable for Austin engines because these plugs have a tapered base and are designed to fit into a corresponding tapered seat in the cylinder head. They will not provide a gas tight seal when used into the Austin cylinder head.

Eddie Loader