Bolt on bits !

Nuts, bolts and threads is a bit of a minefield. Threads may be cut or rolled and you are probably more familiar with cut threads. To make a cut thread, take a rod or bolt and cut the thread into the shank with a die or die nut. Naturally this leaves you with a thread which is cut from the original material but leaves microscopic jagged edges-- known as stress raiser points -- in the teeth of the thread. The form of the thread will dictate how low or high they are.

With a rolled thread the shank has a wheel forced into the material, squeezing the metal up to the surface to form a thread. It often needs several passes to obtain the finished thread of the required size. A rolled thread can be likened to a forging because the original grain of the material flows into and along the threaded section, rather than being cut at 90 degrees to the flow of the grain.

Rolled threads are therefore felt to be superior in terms of mechanical strength (size for size) to a cut thread. The best bolts.....or at least the more expensive ones !.....tend to have a waisted section perhaps with a shoulder at one end and a thicker section half way down if it is a long bolt. The theory is that the bolt will only be as strong as the thinnest section at the base of the tread, so the shank need not be any thicker than this. The raised sections are simply there to provide location within the hole.

On most bolts you will find a number at the top of the bolt. This represents the tensile strength of the bolt. For example an 8.8 would be general purpose steel bolt, while a 10.9 is a higher tensile. If you are replacing bolts around the car, always check the rating and replace like with like.

SU tuning.

Modern cars have done away with the carburetter and now the distributer as well. However for us the good old SU still soldiers on !

A butterfly on the engine side of the unit controls the engine demand and when you open the throttle, this butterfly rotates. Air cannot enter the engine directly due to a piston across the airway's path. A chamber above the piston is connected to the engine airway and air is drawn from this chamber causing the piston to lift until a state of balance exists, in accordance with Bernoulli's Theorem (and if you can't remember get your old school textbooks out !). The lifting piston then allows air into the engine.

A tapered needle fixed to the piston lifts out of a fixed jet to increase fuel at the same rate as the air flow increases. At least it does if the taper of the needle is tailored to match the air flow, *which is what SU tuning is all about.* The main jet is adjustable up the taper or down it but only to a limited degree. This allows for finer tuning, but it isn't what you would call an adjustable main jet. With a single SU some people alter the taper of the needle by carefully filing bits of it away at the place where the mixture is weak, but it takes considerable skill and judgement (and luck !) to know where to file. Many people regard this as nothing but a bodge. The answer is to select the correct taper on the needle in the first place. Genuine SU needles are still available but you will need to "ferret out" your local stockist. Try looking up Carburetters in your "Yellow Pages".