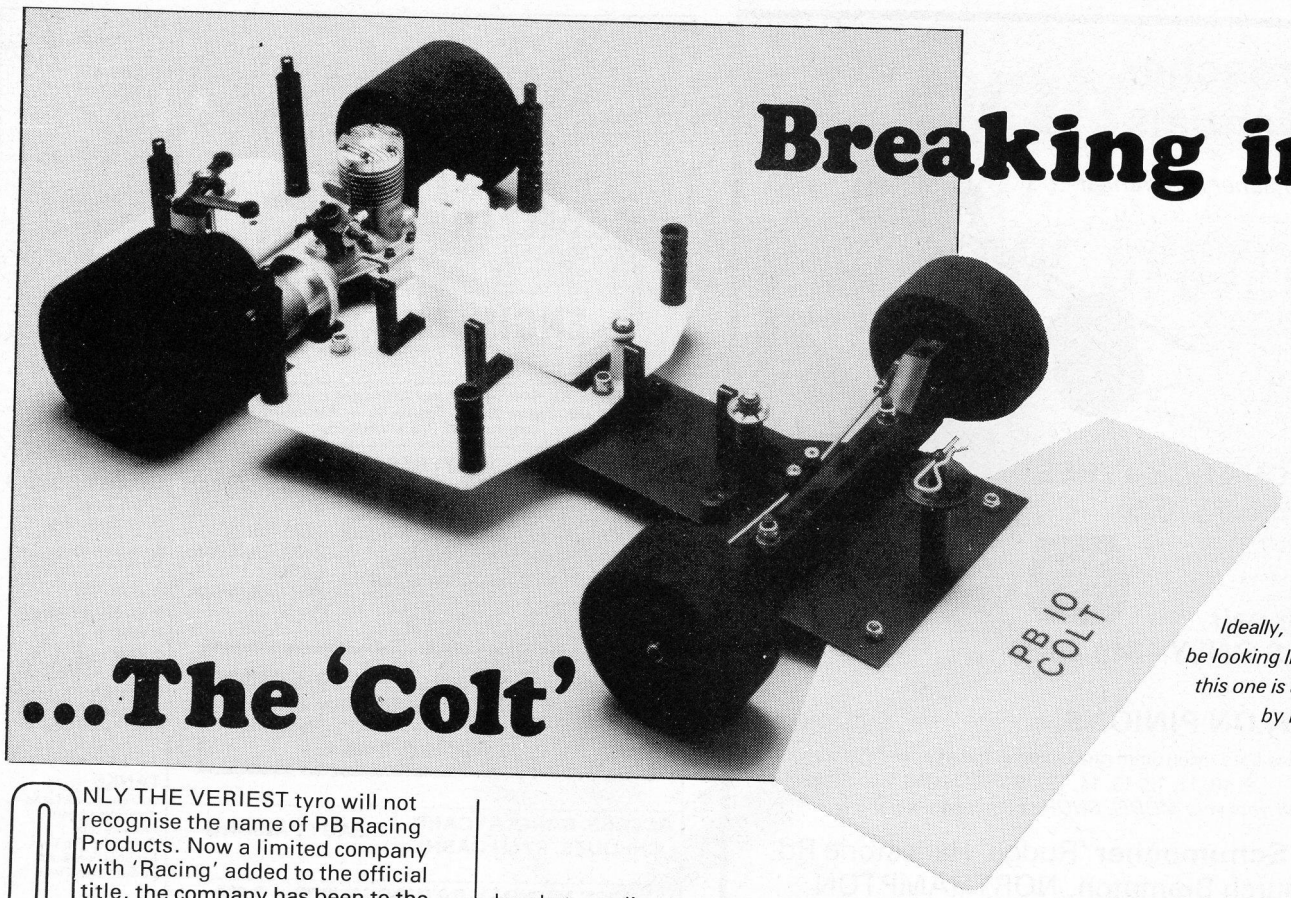
Breaking in ...

...The 'Colt'



Ideally, your car should be looking like this - though this one is a studio picture by PB themselves.

ONLY THE VERIEST tyro will not recognise the name of PB Racing Products. Now a limited company with 'Racing' added to the official title, the company has been to the forefront of manufacture and racing since the beginning of the hobby in Europe. Proprietor Keith Plested came to the very first organised r/c car meeting in England at Easter 1971 held in the grounds of Ashlyns School, Berkhamsted, and if I remember rightly was one of the winners of tankards together with Ted Longshaw, now President of the European governing body for the sport.

Over the years he has been producing ever more successful cars in his range of PBs culminating in the PB9 International currently holder of the World Championship title as raced by Phil Booth of Derby, one of his associates in the development programme. Now comes the PB10, happily named Colt a word which means something in any of the civilised tongues.

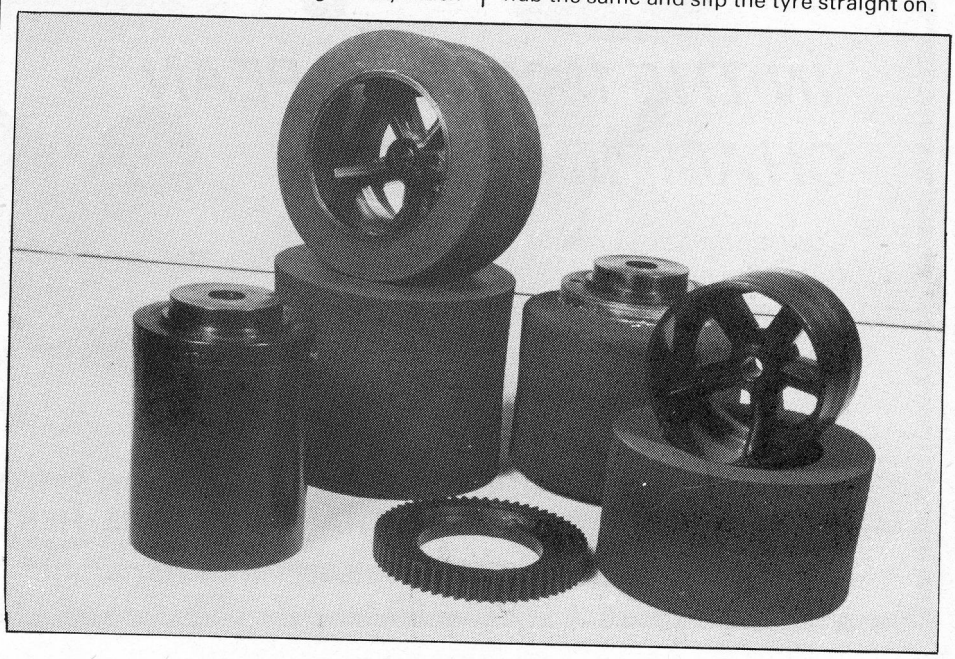
The Colt is a return to beginnings. It has been devised as a low-priced 'starter' kit with all the basic characteristics of its big and more famous brothers, but which can be up-dated to the builder's choice without losing any of the running pattern of the accustomed car, and still able to use any collection of wheels and tyres and other accessories that may have been built up on the way to becoming an expert driver.

The kit is comprehensive and contains everything that is required for a rolling chassis, including an ABS bodyshell. All the builder needs to get moving is the engine of his choice, plus silencer, air and fuel filters, and the radio equipment. Chassis, power pod, steering unit, servo-saver to protect his steering servo, servo brackets, radio plate to hold the receiver etc., fuel tank with spring loading filler cap, wheels, tyres, back axle, and clutch unit with brake, driving gears, body fixing brackets, nuts, scres and washers to put the parts together ... the lot in fact for £45.95!

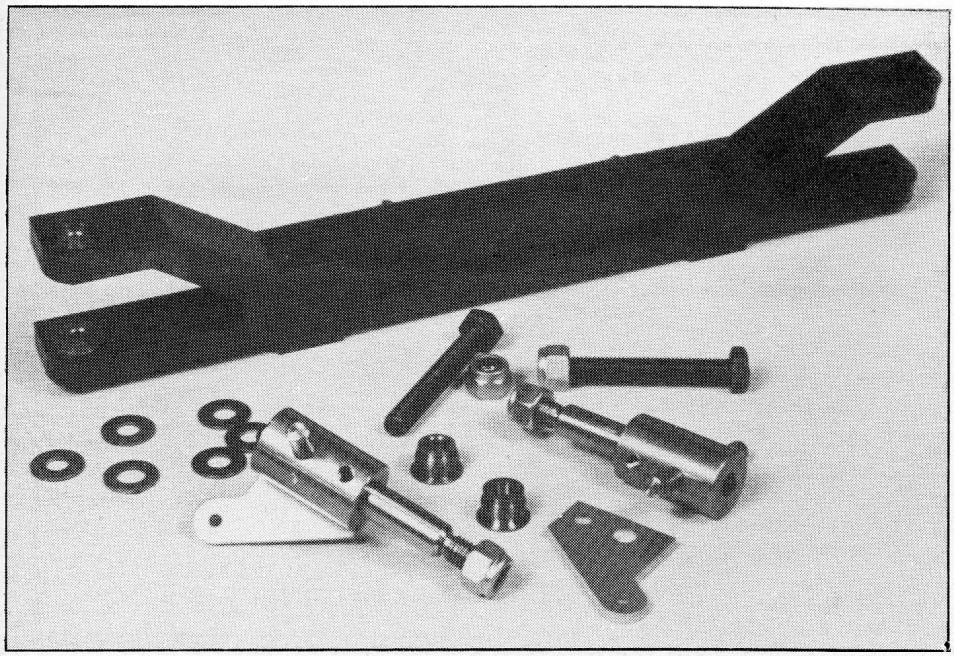
Related items are packed in separate polythene bags (keep them — they come in useful!) with constructional details for that particular item. A single sheet of general instructions is also included but this only makes suggestions as to building order, lists the various grades of rubber tyres available and their uses, plus details of transmission gearing and clutch adjustment. Order of building is very much a personal matter and I differ from Keith by always sticking the tyres on the wheel hubs as my first task.

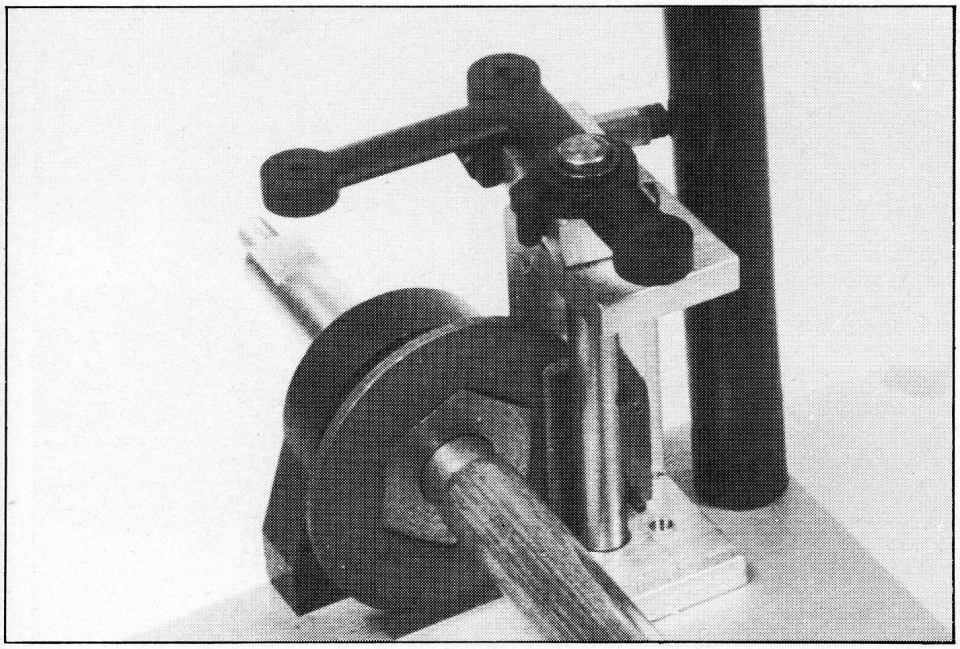
I do this because it is a messy job and well out of the way. Sticking the tyres on? I hear the novice say. Yes, that's the job. Tyres are not the inflated fullsize type but solid rubber or neoprene which must be attached to the wheel hubs securely, otherwise as they get hot in running they will expand and slip off.

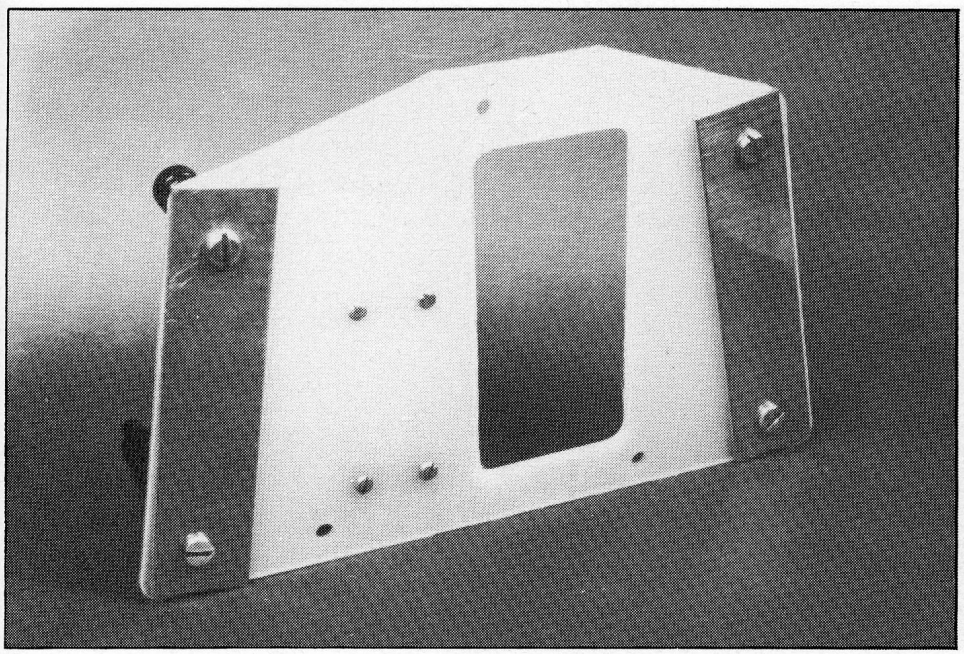
First step is to rough up the plastic hubs with fairly coarse sandpaper to give the adhesive something to grip. Then using Evostik or similar contact glue, coat the inside of a tyre with a thin coating and the hub the same and slip the tyre straight on.



Wheel hubs and tyres and toothed ring gear in stout nylon.







Do not wait for the glue to get tacky but push it on at once. This can be a rather messy operation, but not if we have saved a plastic bag or so from shopping or the kit, which is slipped on the hand like a mitten, which reduces the amount of Evostik deposited elsewhere than on the tyre/hub combination. Clean off surplus either with the Evostik cleaner available or just using petrol or lighter fuel.

Be careful to get the tyres squarely on the hubs. Rotating the hub with a small arbor through it, either slowly on a lathe if you have one or with a friend turning a hand-drill will help in getting them on evenly. Later when the car is ready for assembly they can be trued up with glass paper running the driven rear wheels and with the front wheels again in arbors on a power drill.

This done, we can get to fixing the power pod to the chassis. Note that chassis is not symetrical — right way up has the ready drilled holes for fuel tank and steering servo on the left — looking from the back to the front. Attachment is with safety nuts which must be screwed right down. This is best done with a box spanner holding the screw head and an open ended spanner turning down the nut — or the other way if you prefer — but it won't just spin down for a couple of last turns to tighten.

Next job is to fit the rear axle with its two plummer blocks. This involves installing back axle and the brake. Believe it or not, a disc brake unit is supplied, which must be the first time this has been provided in a kit at the price! Be careful with the little brake lining retaining pins — don't drop them and lose them. I usually tip parts from each bag into a box or tin to stop them from getting knocked off the bench. 'Press' the instruction says: don't bang them in with a hammer! Use a machine vice or similar to close them in gently. Take some trouble deburring and radiusing: it pays. Note that brake lever permits use also for a slide carburettor if fitted.

If we follow suggested assembly order a choice must now be made on the engine. Perhaps you have acquired a run-in engine from a club mate, or you may be getting a new one. What to have should be influenced by engines in use at your club, since you may need expert advice later, and even loan bits and pieces. With a big campaign for 'Buy British' an Irvine 20 would not be inappropriate giving you an excellent stout engine capable of holding its own at club racing level and not too tricky to tune. You need to make the choice since the engine mounts, whilst threaded to fix on power pod are not drilled and tapped for the engine of your choice. If you are at all doubtful of your skill in this direction (you may not even have taps and dies) get your local model shop to do this for you. You may even be able to buy ready tapped mounts to fit your engine. At the

Steering unit with its various parts.

Disc brake unit assembled on rear axle. Post behind will support wing unit.

Radio ('shaker') plate from the rear showing reinforcing plates to prevent possible buckling.

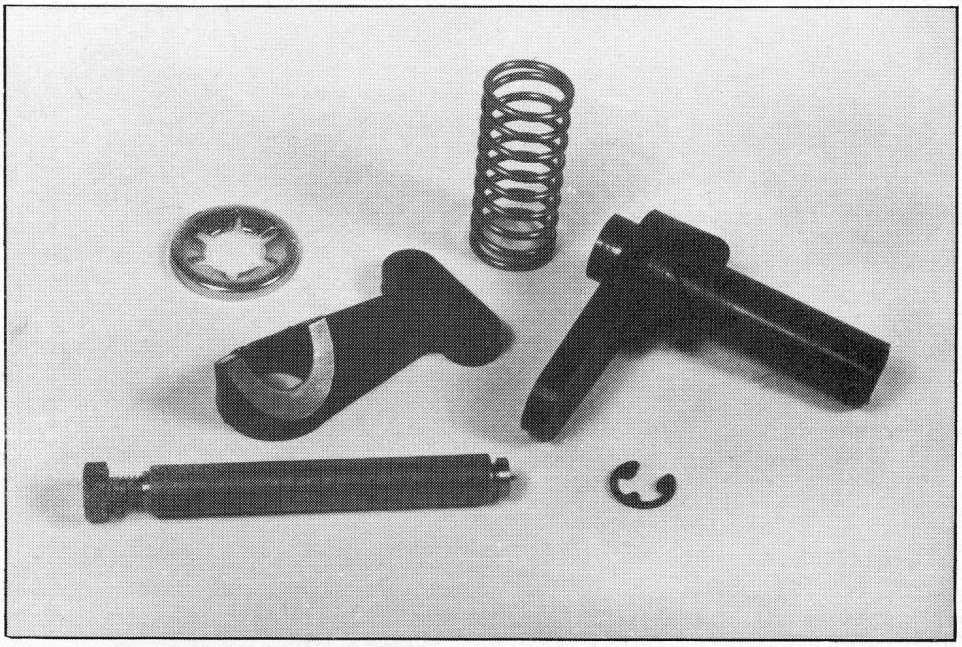
same time you should buy your silencer at the shop (he will be more willing to help with the mounts!) Get the PB silencer with internal baffles to keep the noise well down since nowadays you must not exceed 80 DB under strict rules.

Now for a change we can go to the front of the car and fit the steering, track rods and connections and instal the servo-saver. Care in assembly pays dividends here. A little deburring makes work but do not worry if the final job seems a little stiff — it will work off in a lap or two on the track. Note that caster has been built into the front axle moulding and this should lean back. Again press the kingpin bushes in rather than belt them with the hammer — flanges face inwards. Track rod kit is next opened and the Allen screws inserted straight away into the locking collars. Assemble them on the two track rods and note how they are fixed onto the steering arms. As provided they will match, so that neither wheel will be at a different angle from the other. They will already have a calculated amount of toe-in (which helps to keep them steady on their directed path). If you wish to decrease this amount then the locking collars can be moved a fraction inwards to shorten lengths for a start.

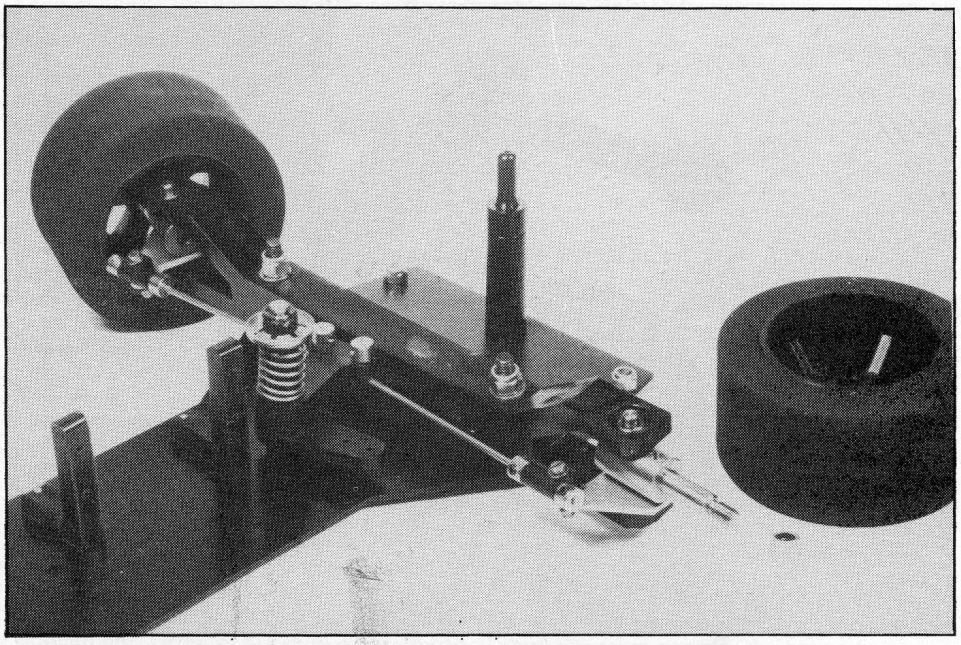
That important item the servo saver is next. In case you do not know its function it serves not only as the pivot from the servo about which the wheels are turned, but also by means of its sprung column protects your expensive servo from risk of being overloaded if you ask it the impossible, such as going on past an immovable object! It is also designed to provide a degree Ackermann steering, in adjusting the turn so that the inside wheel follows a shorter path than the outside wheel on a turn (like dancing girls on the end having to move faster when turning in line).

One vital thing remains before we have completed the mechanical assembly. This is the clutch and its bellhousing. Operation is really ridiculously simple and has altered very little since the beginning of motor cars. Two free moving shoes are placed so that, as the engine turns, they are thrown against the inside of the bellhousing which goes over them and so takes up the drive through the gear on the end of the bellhousing, which drives the rear wheels. According to the degree of clutch slip, so is the smoothness of the take up from stop to full speed. It may be necessary to file a little off the crankshaft end to get the assembly together precisely — but do not do this unless you are sure it is absolutely necessary. Much depends on the make of engine you have chosen.

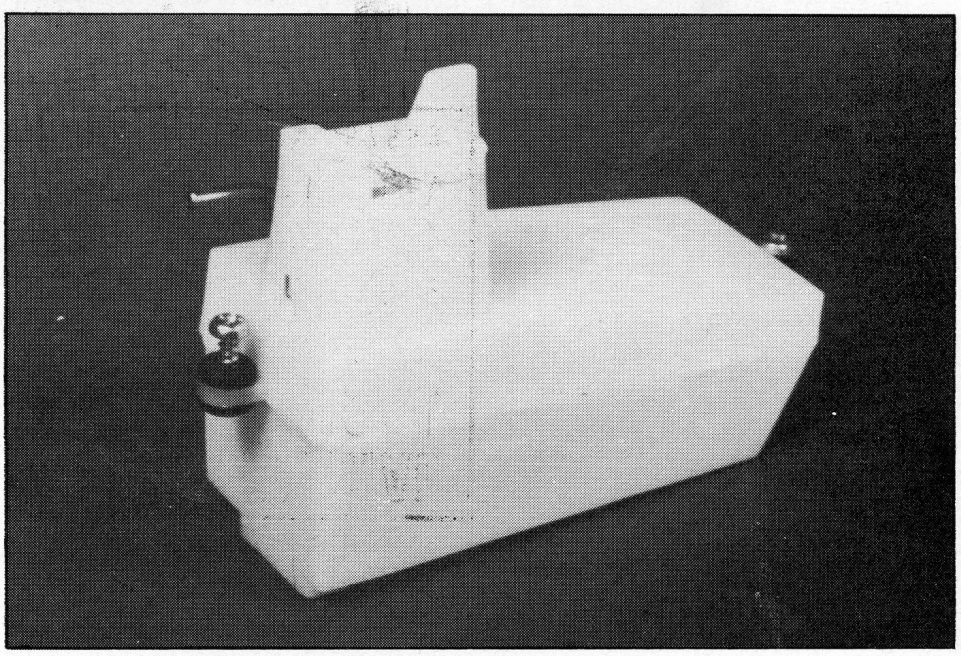
The car can now be fitted with its wheels as a rolling chassis. Radio plate (or shaker



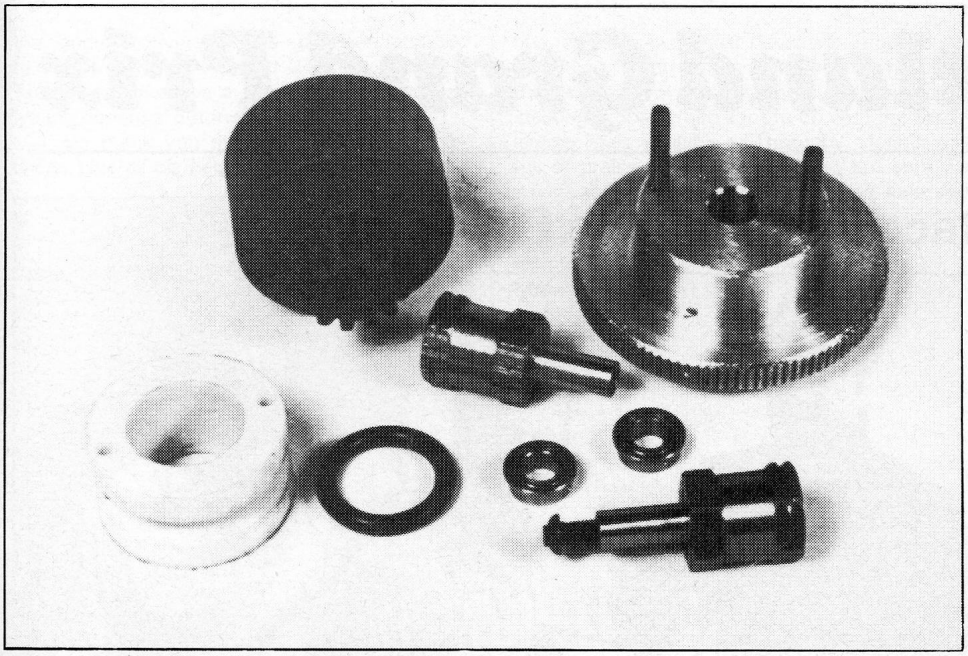
Servo saver parts before assembly.

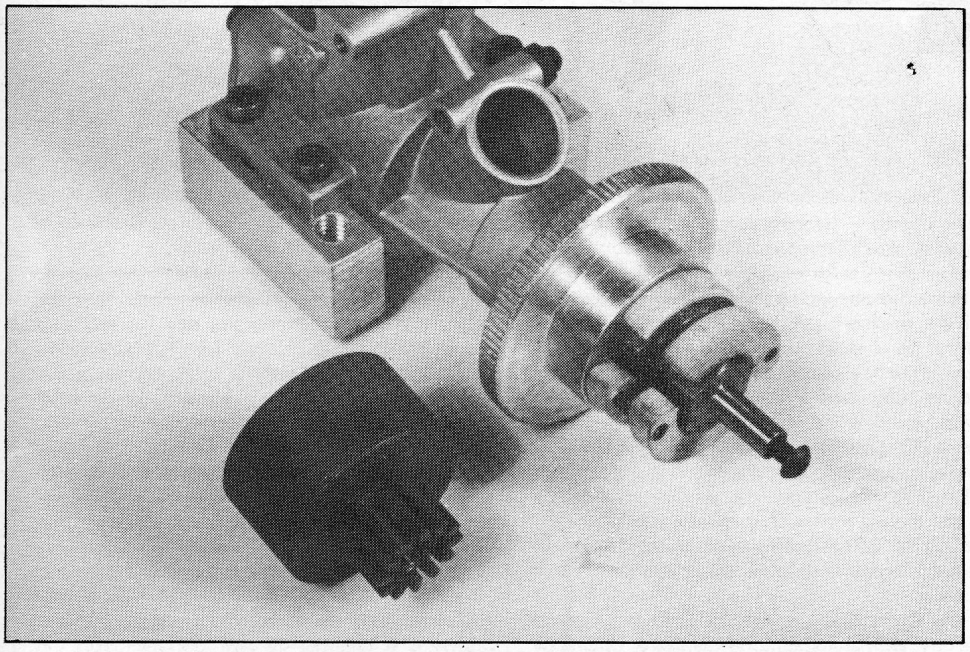


Steering unit in place on chassis. Note the simple adjustment possible. Servo saver is in place, and to the left the servo mounting posts have been installed. Post in front of steering unit is for body mounting. According to type of body this may be altered to a shorter post.



Fuel tank of 125cc capacity, which mounts on radio plate. Filler is spring loaded to ensure quick re-fuelling stops.





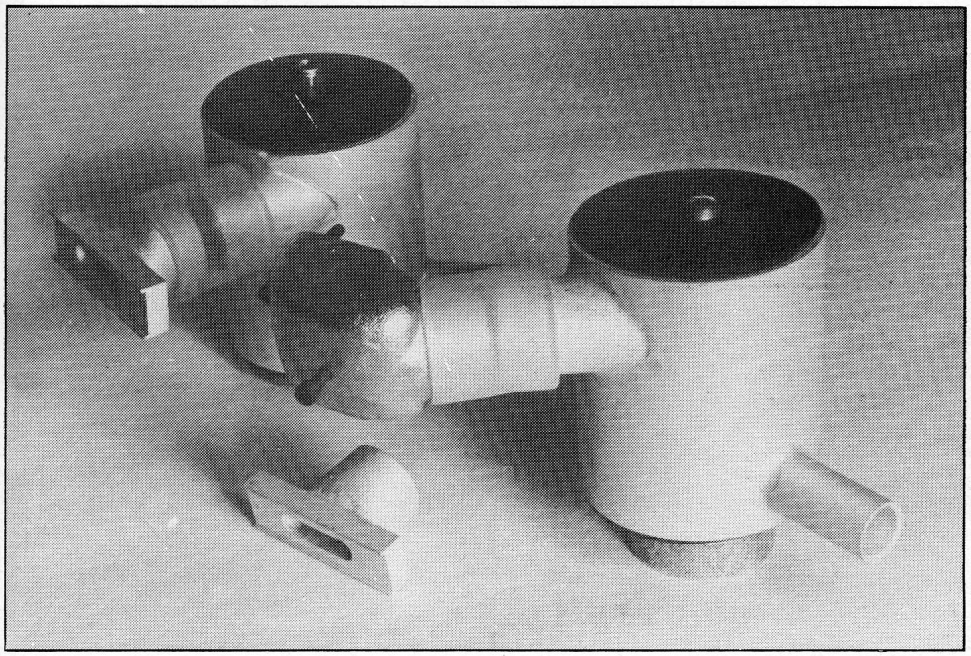


plate as they call it in USA) goes in place with a suitable space for the fuel tank to come through. This packet also contains the four servo brackets which must be drilled to take the self tapping fixing screws using the holes on the chassis plate as templates. Further holes must be drilled to take the servos to be fitted. Here the actual servos can be the templates to show where the holes must go. In screwing in self tapping screws a little Vaseline is a useful lubricant. Do not try to do the job holding the bracket in the hand — secure it in a vice then if the screwdriver slips it will not gash you. Make these screw threads thus rather than doing it direct at attachment point, drilling under size where necessary to give you a start.

Four other nylon pillars will be found in the packet. The two longer ones go to the back of the radio plate, the shorter ones to the front. They should be located about half an inch from the edges of the plate and separated by a suitable distance to take elastic bands from which are sprung the radio receiver and nicad battery for same to reduce the shocks they might receive in running. Two light alloy plates are also included in the bag. Drill these to match the supporting post holes and instal under the plate to prevent it perhaps buckling under pressure of the elastic. Three further holes must be drilled on the plate to fit it to the chassis. Use chassis as a template to locate them. Note that rear radio posts are also used to secure bodyshell in place (of which more later).

The fuel tank comes with two nylon supporting posts. Where the car is to be used without a radio plate (as in some PB marques) these support it. In our case they must be shortened to allow them to support the tank on the radio plate. It will be necessary to drill them through at one end to take the self tapping screws provided.

If you have already acquired your engine it is time to open the clutch unit pack. Note that there is a choice of crankshaft adaptor nut according to the engine you have chosen. One is a standard ¼ in UNF thread the other is metric; this takes care of the available engines on the market — one or the other is sure to fit! Details of cutting the PTFE shoe ring are given in the bag — small Xacto saw or similar will do the job splendidly. Do not experiment with cutting back the shoes at this stage, just trim them as set out. Take care slipping the 0 ring over the assembly. Happily, the pivots onto which the shoes slide have already been fitted in place.

The car should now be looking like our heading picture — though there is still quite a lot to be done. I will be covering installation of the radio gear, cutting out the ABS body and painting it in the next issue.

Clutch unit parts. Both types (Metric and UNF) crankshaft adapters are shown here, but in practice you get one or the other threads.

Clutch unit installed. Shoes have been cut and 0-ring fitted. Bellhousing with 12-tooth gear is shown on left.

A couple of silencers shown with manifolds fitted. Different engines will require differently shaped manifolds — so be sure you obtain the right one for your engine.