

PB VISIT

INTRODUCING PB8 & OTHER GOODIES

Factory picture showing "Bridgie" in use: Panel on right shows all with lights and dials a-flickering. Works manager John Robinson stands just behind it partly screened.

I HAVE just been down to Havant to see the new and enlarged PB Racing Products Ltd factory and enjoy the Bridgeport computer engineering machine, which can do nearly everything short of calling the teabreak, as well as see some of the latest PB goodies. I went away positively loaded, including the first off the line, label still damp, of the mail order/export PB8 kit, which becomes very much the lead figure in this story, though what with the special bits has grown up from the standard version with due acknowledgements.

First of all the factory itself, now about twice the size it was when visited and written up in our Issue No. 1 though still on the same and adjoining sites. Increasing sophistication has meant that straightforward turning and auto work no longer earns its floor space, so much of the elementary work is now made out and

only comes in for the finishing processes. The 20 ton press has been joined by a 40 ton press which can stamp out a power pod in one bang. Pride of place is enjoyed by the Bridgeport which works to an accuracy of .0005 inch repeat, has a programme on tape which does its sequence of jobs with a display board giving progress flashes; can be fed alteration instructions and instructed to insert them in the proper place; then finish the day with a revised programme all ready for next use. If some other job is required then a new programme tape is slipped on and work proceeds merrily without elaborate setting-up time.

A really adequate bin storage system has been set up at the packing and despatch end which will soon be computerised. This will mean that part numbers will move from three-digit to five-

digit reference and of course provide instant stock state reports. Distribution agreement with Parma did not materialise after all, but had the good result that the space intended for extra storage has now become the plastic moulding department taking all plastics out of the main factory floor space. This has given Keith adequate space to make his Lexan moulding machine a special dustfree enclosed work area. Already bodysells are coming off the line with that super gleam and finish unknown before. Other Lexan improvements include true airfoil shape to car aero foils; other experiments will be producing front bumper aerofoils capable of adjustable incidence rates.

Another interesting bi-product of the extra space is possibility of storing rubber for tyres to enable it to age and so avoid some of the shrinkage problems experienced. That power press can now stamp out thirty tyres at a time, and these are left stacked to mature. There is still, alas, a small "black hole" section where the final truing up of tyres takes place.

So much for the premises. Let us take a look at the new developments taking place. If we use the PB8 as the focal point we can work from back to front of the car. Item No. 1 must be silence. Horrid threats of stricter enforcement of silencing rules has made this a priority. Latest from the production line is an insert which goes into the dustbin silencer, together with a special length of silicon tube which must be pushed right home on both dustbin and manifold. Making it longer or cutting it shorter will strangely enough have the effect of making it *noisier!* The quieter motor fairly purrs, but do check your laps

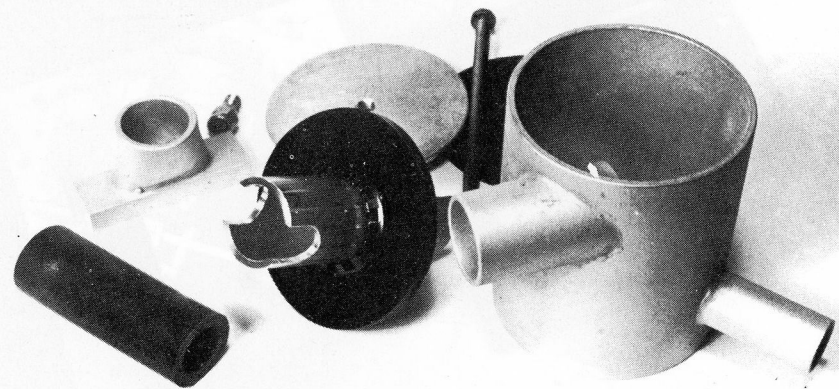
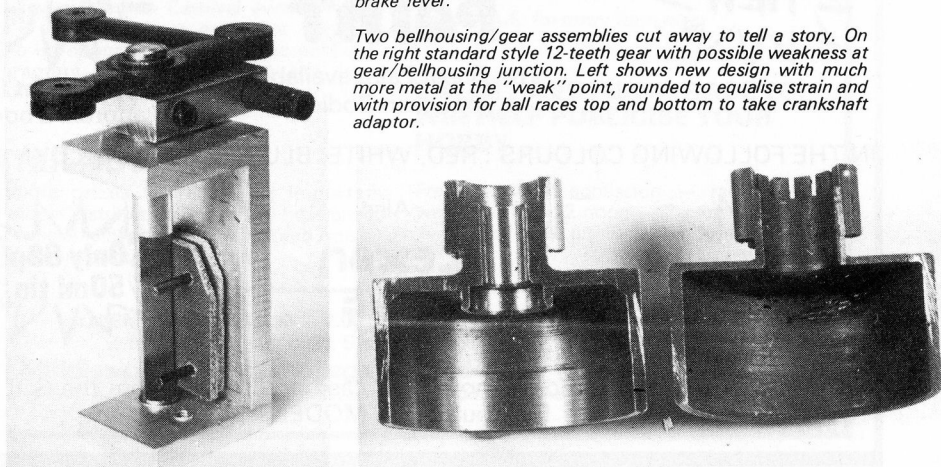
against the clock: you will find that under given conditions the quieter car is just as fast though because of lower noise it may not seem so! Experiments have also taken place and are continuing with where to put the silencer. Cover picture shows it brought amidships and with battery position pushed ahead to give it room. In spite of over ¼lb of weight shift this has only brought balance point forward by ¼in from 4¼in ahead of back axle to 4½in ahead. So far this season Keith's car has been a little different at every meeting to test these potential improvements. Keen spies who have followed his lead have sometimes been very disappointed, only to be told, "Sorry chum, that was an unsuccessful experiment!" However, cover picture does show a variation on battery and Rx attachment via a radio plate in lieu of the upright body posts which are standard. Just for the record on this car, the chassis shape is different too, shaped roughly like a wine bottle in side view.

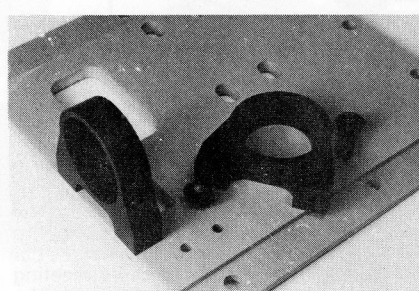
Disc brake caliper kit should be plain bearing for the PB8, I am lucky I got the double ball raced version that goes with the PB9. Brake lever is ingenious. With a pumper carb where movement of throttle lever is transverse to the car the L-shaped brake lever is assembled with the brake & throttle override kit without alteration. If a slide carb is installed with a lengthwise movement, then the simple back and forth carb and brake action means that the leg of the L-lever is cut off. The override pivot moulding have also been improved with a metal sleeve insert to enable them to be safely tightened up.

Silencer with new inner piece that assembled to instructions quietens engine, improves fuel consumption without loss of power.

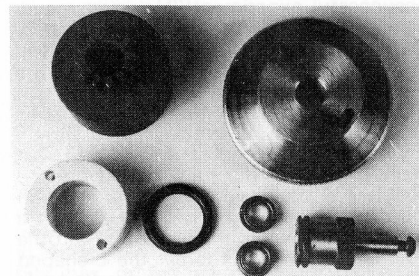
Disc brake unit: alas you cannot see ballraces top and bottom of brake lever.

Two bellhousing/gear assemblies cut away to tell a story. On the right standard style 12-teeth gear with possible weakness at gear/bellhousing junction. Left shows new design with much more metal at the "weak" point, rounded to equalise strain and with provision for ball races top and bottom to take crankshaft adaptor.



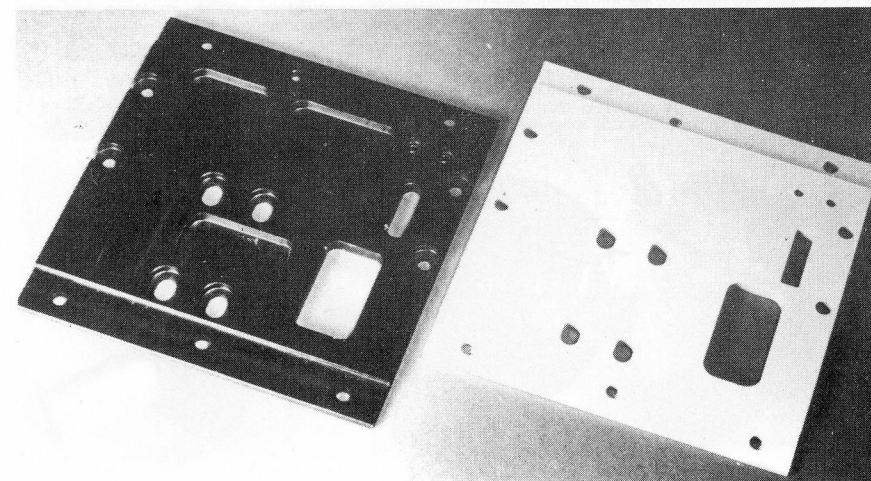


These are the smart anodised alloy plummer blocks that save weight and reduce CG slightly.



Parts of spur gear/clutch/bellhousing assembly. Note two ballraces. Shoe must be cut and trimmed to take O-ring.

Standard satin finish power pod on right; black anodised super accurate highly lightened pod on left. The button screw heads are all recessed as can be seen making it additionally snag free when over-riding the other chap.



With the demand for special parts it seemed a pity not to let the Bridgeport do something on these lines. Hence the anodised in fashionable black alloy plummer blocks. The arch milled out between attachment holes makes a saving in weight and design permits a lowering of the back axle by some 3mm. The PB diff. continues to hold its place with a terrific demand now being met. I saw an enormous box of tested and run ready to go diffs all in their bright orange anodising. must have been several hundreds of them.

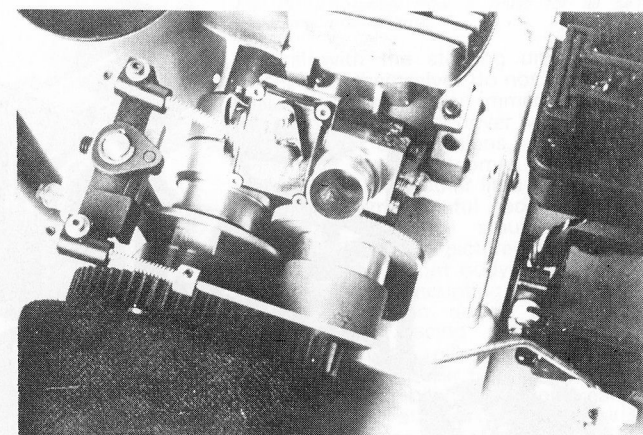
Still, by the way, the cheapest diff. on the market, but likely to last indefinitely by virtue of the gear design which provides maximum bearing surface to working parts.

These all have a pre-run before despatch but this does not mean the user should flog them unmercifully. An initial run of say five to ten minutes on the track, then a check to see that all screws are good and tight will ensure long and problem free life, not forgetting the use of a little oil from time to time.

While I was there "Bridgie" was working on the new lightweight power pod taking out all the excess metal and drilling the various holes all to guaranteed accuracy of .0005in from focal point at top left hand corner of pod. Again I have been lucky and can install the super pod in all its black anodised glory. Weightsaving is yet another step towards higher speed so every little gram begins to count.

Engines are becoming more and more powerful making the need for higher gear ratios desirable. This poses all kinds of problems. The 12-tooth gear/-

Linkage set-up for use with disc brake and slide carb. This also shows that slide carb, completely sheathed against ingress of dirt. Air filter removed for viewing.

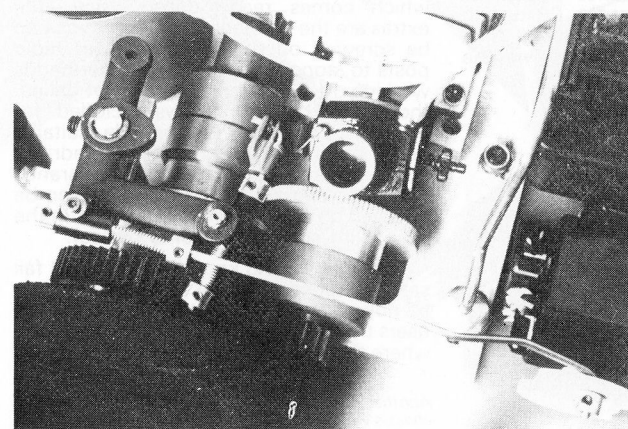


clutch housing has been regarded as about the smallest that can be safely obtained. As the number of teeth decrease the diameter of the gear is also reduced until there is a very limited amount of metal to hold the teeth on, particularly as the gears have to be undercut to enable the gear cutting tool to be withdrawn without damage. Some experimental 11-teeth gears were cut leaving additional space which effectively ruined an expensive tool after making a dozen. Considerable new thought has now gone into the question, with a revision of stress points, rounding of cut back areas and made additional metal available at the tooth junction. Originally in this country teeth were to 32dp whereas in USA a 24dp design was followed, involving larger diameter gears. Now with increasing reliance on metric sizes experiments with

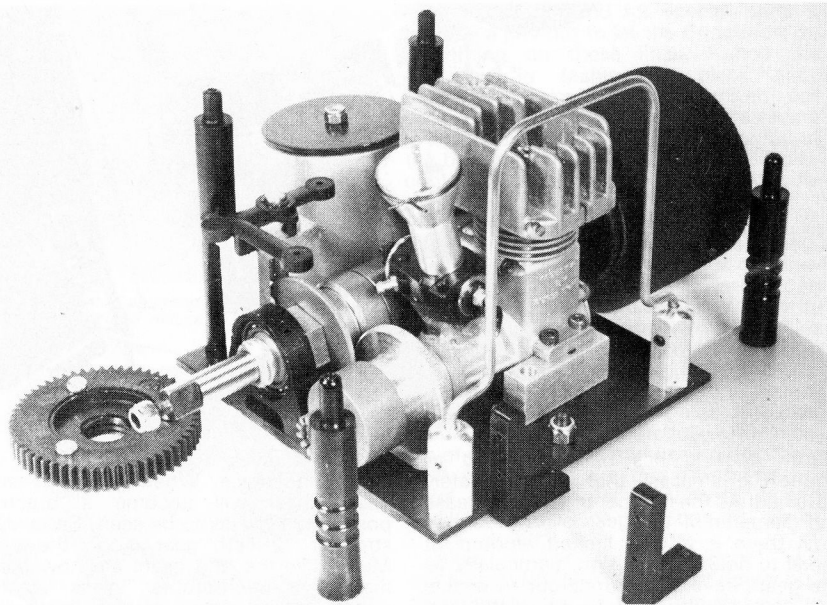
Module 1 gives us 25.4dp close to the American choice. Whether the 11-teeth gear wheel will become a practical possibility remains to be seen. Certainly a stronger 12-teeth gear is on the way. Meanwhile the ring gears are now being made in a much stouter "glass" so that power "bites" of two or more teeth at a time are a thing of the past. The new material has a melting point around 100 deg. Centigrade so there is little chance of softening or melting by reason of transferred heat on the track.

Moving forward we come to the rollbar which is shaped to go into rollbar supports and locate in place of the existing screws which hold power pod to chassis. A very useful extra, serving as lifting handle as well as engine protector.

The super fine airfilter has already been adequately discussed in earlier issues.

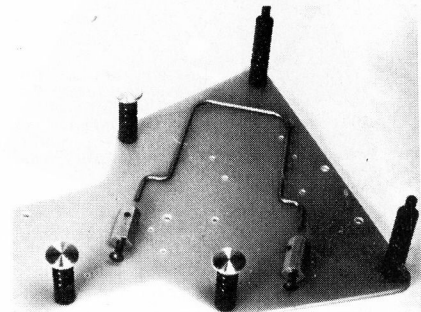


Linkage set-up for pumper carb. Here the leg of the disc brake L has been retained to provide transverse movement. Air filter removed.



SuperTigre X21 in place (carb will have to be turned round); rollbar fitted; lightened power pod in use, plus anodised alloy plummer blocks.

Promised new slide carb. has still to see the light of a production day. At the moment less than dozen prototypes have been made and are in use with the PB Team. I understand that all the problems have been ironed out and that they can be expected to come off the line about the time of the world champs at Geneva. Feature of special importance as against any other slide carb is that the PB design will have the sliding part enclosed thus preventing grit and dirt entering via the



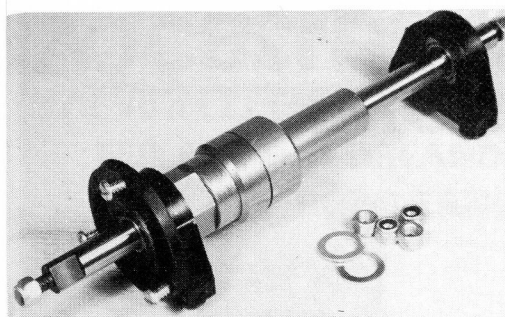
slide and undoing the good work of the air filter.

New fuel tank is also still awaiting its final shape. Those seen in white are efficient but alas the customers have said that they look like bathtubs and don't want to know. New shape will be cosmetically more elegant though to meet demand will probably be in black. White ones show the level of fuel in the tank, black ones don't.

We are now on the glassfibre chassis which comes ready drilled. Nice little extras are the knurled alloy caps which can be screwed on top of the shorter radio posts to stop risk of holding rubber bands working off. Servo brackets are not drilled, though selftapping screws included for them. A 2mm drill will provide suitable holes. I also just run through the predrilled holes so that the self-tappers are clearance fits in the chassis. The radio posts can be screwed on much more easily if held in the vice (with soft metal clamps please).

Everyone should know about the PB fail safe and steering layout for full Ackermann by now, but I would just remind would-be users that it is the only commercial system where the ballbearings for front wheels are

Another shot of the rollbar, shown on fibreglass chassis with radio rubber retainers screwed in place.



THE COVER PICTURE

Shows a PB Experimental car with wire rear bumper, new location for silencer — note its "sugarbasin" shape instead familiar "dustbin". Differential and disc of course. Moving now to centre of the car as shown below there is the massive airfilter — you must take our word for the prototype slide carb — and the prototype fuel tank with fliptop, due to come out in fashionable black. Forward mounting of battery to allow silencer to come in its place, all fitted to low lying radio plate, with ex-inner tube rubber laced to supports. Warning: Danger to wealth! Follow PB experiments with caution: they are not all successful!

The PB differential now a must for all self-respecting Internationals!

integral with the steering unit so that wheel hubs themselves do not have to be ballraced. This saves an immense amount for the well-stocked driver with wheels and tyres for all occasions.

Right at the front comes the bumper plate provided. Another little one goes at the back. Some careful people are now fitting an additional stout wire rear bumper. . that cover picture again. This is a tip to follow. Front body post in allow with assorted mounting positions is another protection device against the hurly-burly of racing which will, in conjunction with rollbar save a lot of damage should the car turn, or be turned, over. Wing has been mentioned earlier. The wire supports are also noteworthy being of stouter (12 gauge) than usual gauge and held in place with knurled screws (not hex as on instruction sheet) plus allen screw security.

There are lots more PB items coming along. . work is in hand for the probable needs of 1980 and 1981 when engines give even more power and ways and means to harness it; plus the ecological question of going ever faster but quieter please.

