by Bill Burkinshaw

Presto!

robbe

a look at the latest in 4WD 1/8th Off-Road technology

The Robbe 'Presto' ready for the race track. Very strong construction and excellent handling puts this car high on the potential winners' list.

TWO, 4-WHEEL DRIVE 1/8th scale I.C. powered Off-Road racers dominated the 1983 European Championships finals. The *Yankee* and the *Robbe* 'Presto'. In terms of handling and sheer performance nothing separated the two, only the brilliant driving of the young Spaniard, P. Martinez enabled the 'Presto's' of the Italian team to be finally overcome by an incredibly small margin in 45 minutes of racing.

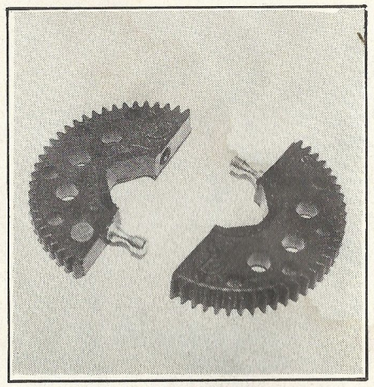
This car has been available in Continental Europe for about 12 months now but is only just available here in the U.K. via importers *Cougar Craft* who already handle the extensive *Robbe* aircraft and boat kit range.

Several unusual features separate the 'Presto' from the rest. Firstly, the car is available in various different forms, 2-wheel drive, 4-wheel drive without differentials or 4-wheel drive with either 1 or 2 differentials. A 'competition' kit can also be obtained to uprate the car further. The kit examined here is the straight 4-wheel drive without differentials version.

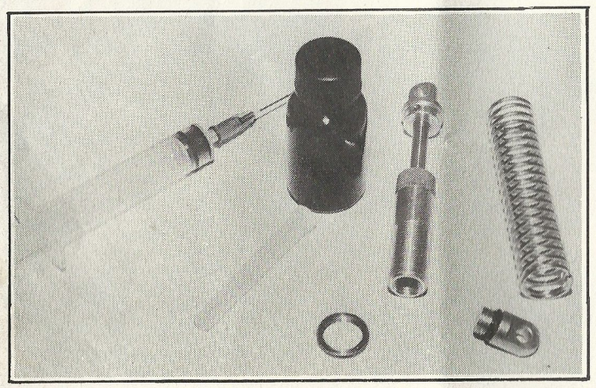
All four wheels are independently suspension units. An interesting arrangement at the rear utilises the transverse countershaft to both transmit drive and act as pivot spindle for the rear trailing arms. Power is transmitted down the *inside* of the rear arms via chain and sprockets to the rear wheel spindles. There are no separate drive shafts for the rear drive.

Chassis is of 'double-decker' style with both top and bottom plates of alluminium alloy. Drive from front to rear utilises a roller chain with glass reinforced nylon sprockets. An ingenious, cam locked, split, main drive gear is used to overcome the necessity of removing the whole of suspension unit if a gear needs to be changed.

The kit is designed around either *HP*.21 or *Enya* .21CX motors and although *HP* engine blocks will fit both *OPS* and *Picco* motors, it may be necessary for some modifications to be made if neither of these two engines are chosen. Although the standard 4-wheel drive kit does not include differentials or bodyshell, in other respects the kit is complete with a very good multi-language instruction book and two sheets of diagrams showing an exploded view and details of the various construction steps.



Above: the novel split main drive gear can be simply replaced without resorting to a major overhaul.



Left: rear coil-over shock absorbers ready for filling with suitable damping oil. Oil and filler syringe are included in the kit. Dampers for the front suspension are an optional extra to an optional extra.

Assembly

With very minor exceptions all the parts fitted well. Some tolerance problems were noted on turned metal parts of the front suspension. The grooves for 'E' clips were not of sufficient depth and were not placed far enough out on the spindles to allow installation of the thrust washers without some initial trimming of the shoulders.

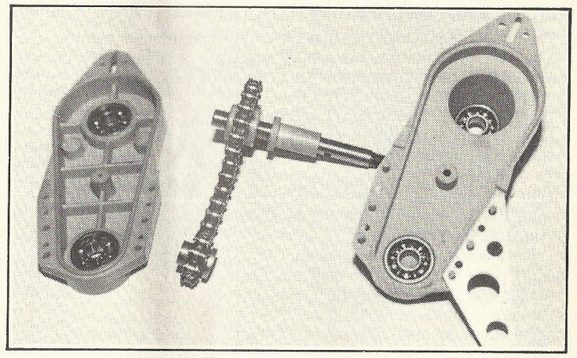
A neat system of tension adjustments for the drive chain is incorporated using adjustable tie-rods which should effectively prevent any problems resulting from the front differential or gear mountings moving. In spite of first impressions there are two different front suspension arms, they look the same but the lower arm has a location for the front 'hairpin' spring. An adjustment for suspension setting is provided plus three different spring rates. No front dampers are included, friction damping is obtained by tightening or loosening the front pivot pin nuts. A nicely moulded flexible front bumper is included.

The main chassis has a double plate fitted for engine mounting and although no mention is made of bonding this to the chassis, it is a good idea to epoxy this in, using clamps to hold the plates together whilst the epoxy cures. Line up the plate using nuts and bolts whilst the glue cures.

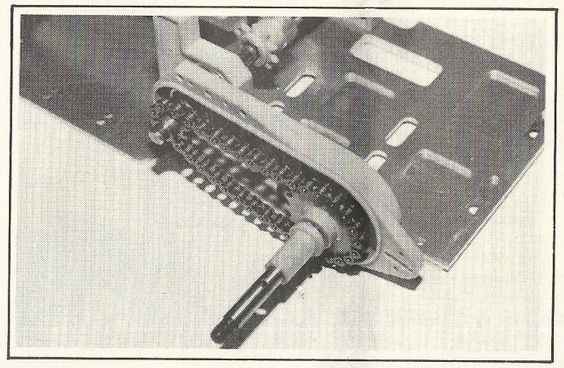
Nylon mouldings support the transverse counter shaft which carries drive gear, chain sprocket for front drive transmission, brake disc and also doubles as pivot spindles for the rear suspension arms. All bearings on this countershaft are ball-raced, six ball-races in all plus a further four at the wheel spindle end of the swinging arms, ensuring that the drive train is free-moving. As usual it is necessary to free-off the fit of the 'ferodo' style brake disc on the carrier with a little file work. Some careful fettling will also be needed on the clever split drive gear. The moulding is very complex and although good, moulding flash needs to be removed with a sharp scalpel so that the two halves fit snuggly together.

Dampers

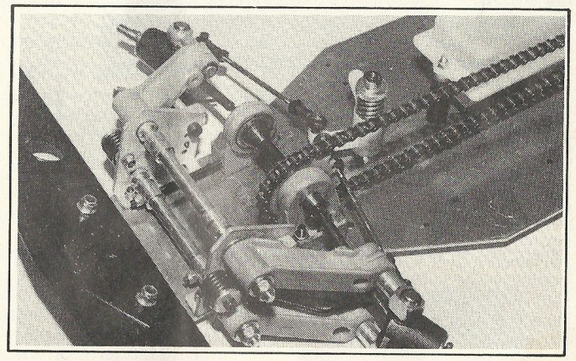
Large one-way dampers are provided with coil-over springing, adjustable for ride height. The oil supplied for the dampers appears to be a hydraulic fluid type with very low viscosity and is supplied with a hypodermic style filler to ease filling the units. Tyres supplied are of a very soft material and should really aid the suspension to smooth out the bumps. I fitted these using cyanoacrylate glue after first roughening up the hubs thoroughly using emery cloth.



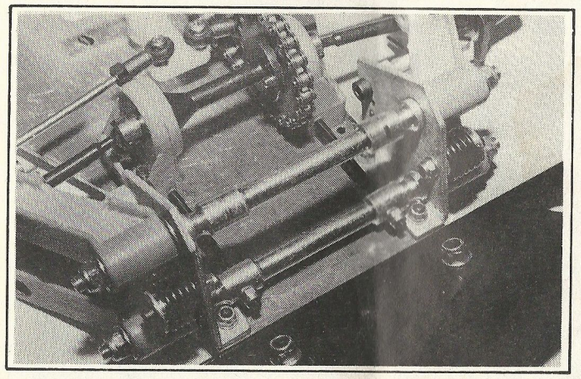
Right: the rear suspension, trailing arms are split down the centre and enclose drive chains to take power from the countershaft to the wheels. Ball-races are fitted throughout.



Left: the rear suspension system needs no drive shafts by using the method shown here. When attaching both halves of the trailing arm, seal the joint with silicone rubber compound.



Right: front suspension layout showing front-end drive shafts and chain. The servo-saver sits slightly off-centre but no steering bias is noticeable.



Left: suspension springing on the front-end is via 'hairpin' springs attached to the lower wishbones. Chain adjustment is simple, two threaded adjuster rods pull the bearing blocks forwards on slotted mounts.

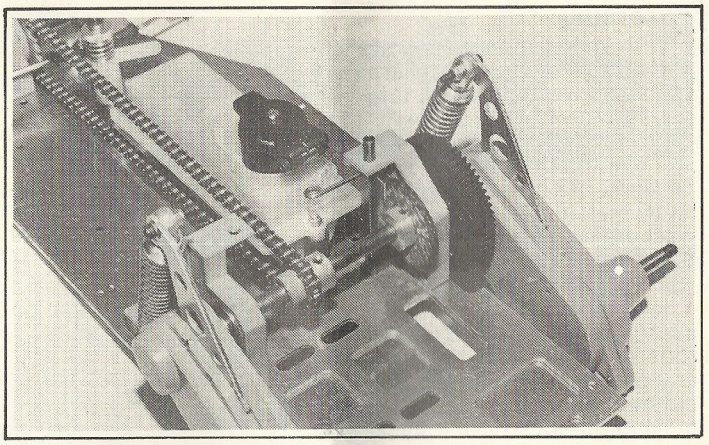
R/C Equipment Fitting

The two servos are screwed to moulded nylon brackets which are slotted to accommodate various lengths of servo. Space for the throttle servo is strictly limited and great care is needed in shaping and fitting the pushrods so that they do not foul either the fuel tank or the brake linkage. Using an *OPS* engine presented a minor problem as the slide on the carburettor is free to rotate and it was apparent that it could possibly foul the countershaft and jam in a half open position. My solution was to reverse the carburettor so that the slide was at the rear of the car with the pushrod passing right across the front of the carburettor.

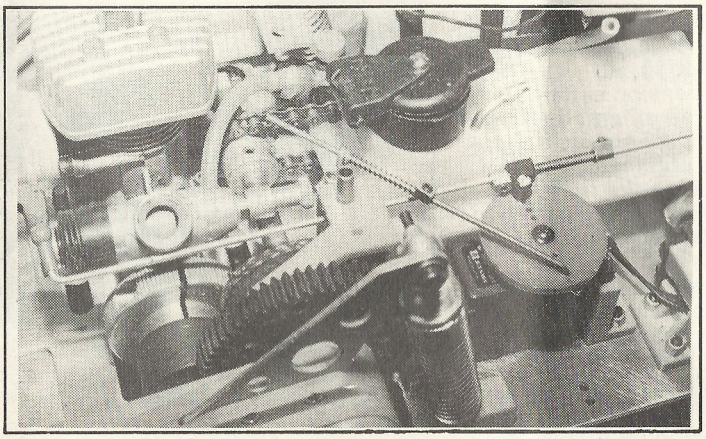
Brake linkage is extremely simple, the pushrod just floats, a 'Z' bend fixing it to the servo disc. *PB Racing* servo discs were used, their *JR/Sanwa* style being very robust and long. Receiver and battery pack are suspended between posts on the rubber bands supplied. With the R/C equipment fitted the upper chassis plate can be installed. This plate has a support for the top of the servo-saver pivot spindle which really stiffens up the mounting, providing a very positive linkage. The actual link between servo arm and saver incorporates an adjustment facility to ease setting up. *Robbe* advise that steering should be set up with 0° toe-in or 1° toe-out not the more customary toe-in found in two-wheel drive cars.

It is next to impossible to fit some rear exhaust motors as the rear swinging arm will pass very close to the rear of the motor. If you have a rear exhaust unit look very carefully at this aspect. Nor is it easy to fit anything other than *Robbe's* own transverse rear mounted silencer, the mini-pipe style unit will project rearwards a long way and be vulnerable in the event of rear-end collisions. A suitable silencer, manifold and silicone connector tube is available and I would advise its use.

I chose to use a *P.B. Racing*



Right: the main drive countershaft transmits drive to front and rear via chains. Cam operated disc brakes also feature.



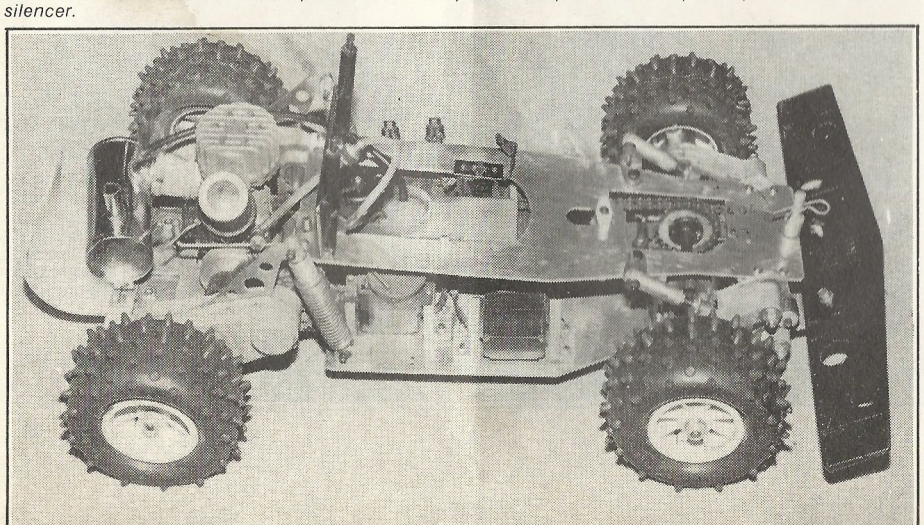
Left: close-up of the throttle and brake linkage. Note: the reversed slide carburettor with slide pointing rearwards to miss countershaft. Space is very limited and patience will be needed to achieve a good linkage.

'Corvette' bodyshell although *Robbe* do produce a 'Lancia' bodyshell specifically for the 'presto'.

On the Rough

The chain drive transmission is free-running right from the word go and should not require much bedding-in. The steering is stiff to start off with and with the 'Presto', and any other 4-wheel drive car, I would only recommend high power ball-raced servos for steering. This type of car is expensive right through, there is little point in spending £200 plus for a kit then skimping on cheap engines and R/C equipment. Use of low power or 'standard' servos will cost more in the end as they will not last the distance.

Below: the 'Presto' at rest with optional front dampers fitted plus rear bumper to protect rear-facing silencer.



Prestisimo!

Any doubts about the handling qualities of the 'Presto' without differentials were very soon dispelled. Turning ability was amazing with excellent straight line performance also. The usual understeer expected from cars without a differential was just not there, the car turns well with a nice predictable amount of power-on understeer making the car very easy to handle. Providing the drivers reactions are quick enough to keep the wheels pointing in the right direction, use of the throttle pulls the 'Presto' back onto line instantly.

The enormous travel of the rear suspension really evens out the bumps, but I do feel that the optional extra of front dampers would be advantageous and the fitting of a rear anti-roll bar. My first run with the car resulted in loosing a front drive shaft which was found and re-fitted with more attention given to the adjustment and shimming of the front trailing arms. Once properly set-up, no further trouble was encountered. The only other addition I would recommend is a rear bumper to protect the transversely mounted silencer. Overall a very easy car to drive, good acceleration, very compliant suspension and tough to boot.

UK Importer: Cougar Craft, Woodhead Road, Holmbridge, Huddersfield, W. Yorks. HD7 2UX.
Price: £160.75.