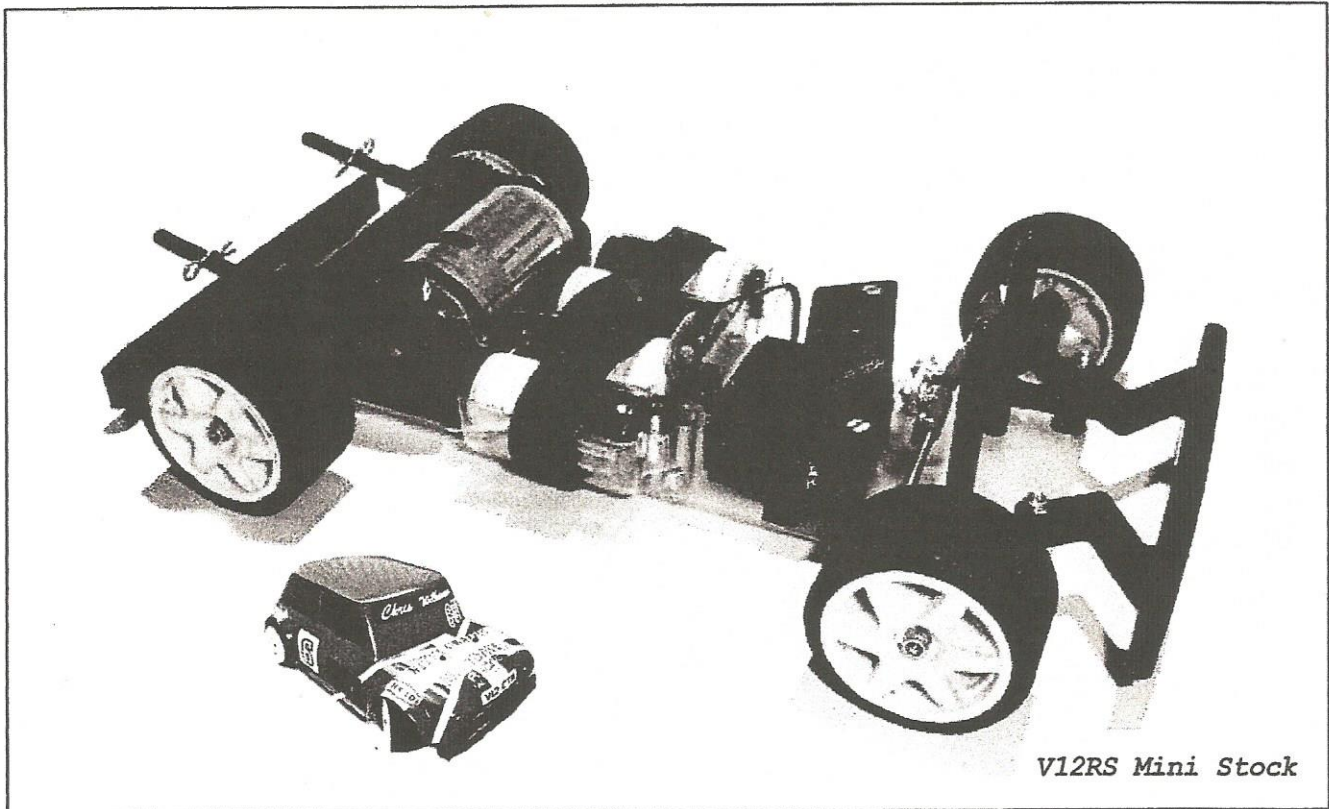
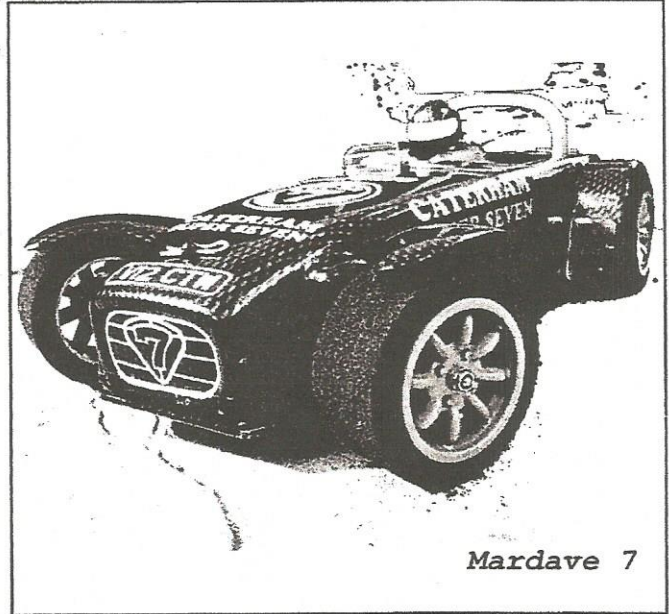
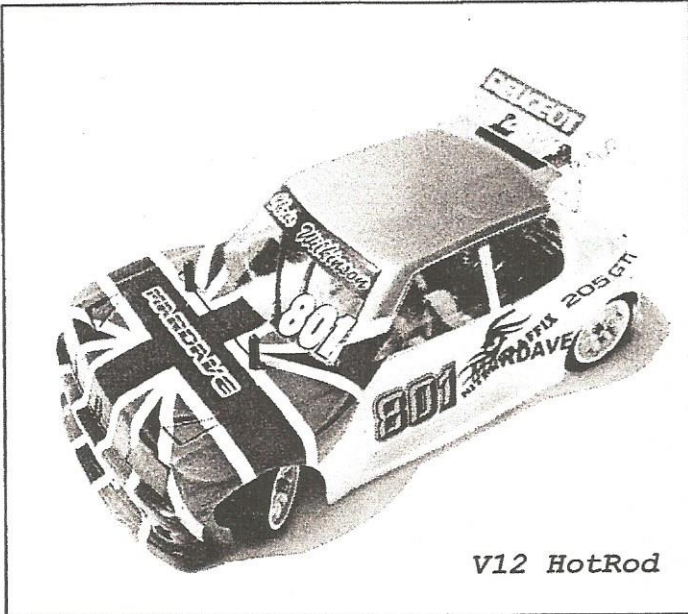


# MARDAVE

PROUD TO SAY  
"MADE IN ENGLAND"

## ASSEMBLY INSTRUCTIONS

V12 Club & Basic Kit  
V12 Mardave 7  
V12R & RS Mini



Thank you for purchasing this V12 Series Kit. We are confident that you will have as much fun building and racing it as we had designing and testing it. Please read the instructions carefully and take your time building the car. This will ensure fast and trouble free racing.

Chris Wilkinson (Mardave)

## Additional Items required

The major item required is the radio control equipment. Any good two-channel proportional radio will be suitable. This will include a transmitter, receiver, 2 servos, a battery holder, and a switch. The battery holder will not in fact used in this model as the receiver and servos are powered by the rechargeable 4.8 volt car battery with a consequent saving in weight, space and cost.

Also required will be a 4.8 volt battery charger. This may use a 12v or mains source of power and should be of the fast charge type i.e. the charge time will be less than 1 hour, possibly as little as 20 minutes depending on the type.

A small tube of cyanoacrylate (super glue) will be required for fixing the tyres to the wheels. Tools required will include a screwdriver, pliers, 3mm spanner, hobby knife, file, a soldering iron and solder.

## Assembly Instructions

### Sprues and Flash on Mouldings

Plastic sprues should be removed as necessary with a sharp knife. Every effort is made to minimise flash on mouldings but should this be apparent, again remove as necessary.

### Spare Items

Some extra items are included so there will be some screws, nuts, etc remaining after assembly.

### Self Tap Screws

Self tapping screws are used frequently during assembly. These are light, efficient and vibration proof but care should be taken not to overtighten them or the thread may strip.

## Assembly

THE FOLLOWING IS THE SUGGESTED SEQUENCE OF ASSEMBLY.

### Front Suspension

Attach a small E clip to one end of each king pin V6A and press king pins through the outer holes of the front suspension arms V5A (Note which way up the arms fit. Press the stub axles V6B fully into the steering arms V5BL and V5BR and fit over king pins. These should slide smoothly up and down. If they do not, remove the stub axles, turn them through 180° and replace them. or you can use an 1/8 reamer to enlarge hole.

Assemble the coil springs V6C, M3 washers and E clips to the top of the king pins (See photo).

Assemble ball screws V7B to each steering arm with 2.5mm nuts. Assemble arms to chassis with 9mm long self tap screws. Screw track rods V7A into plastic ball sockets V7C leaving approx 6mm of thread showing.



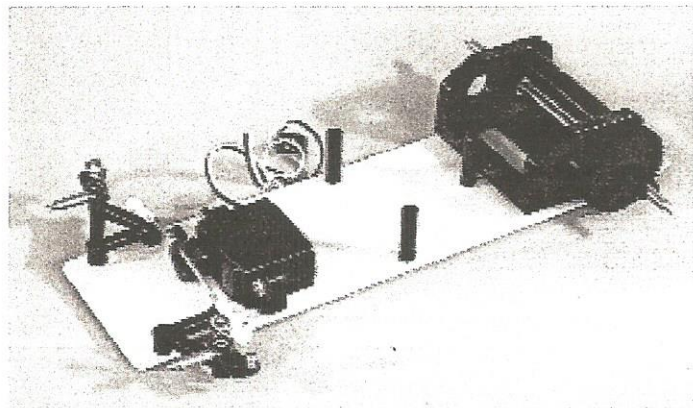
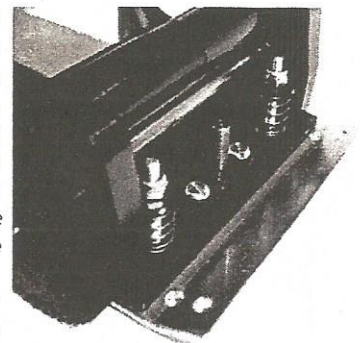
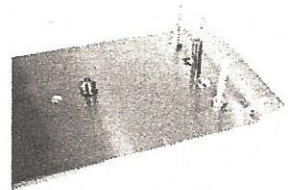
the screw to ensure correct alignment. Attach motor mounts to the pivot plate V8B using 4 x 9mm countersunk self tap screws. Assemble the pivot ball nut V9A to the chassis using an 8mm machine screw. Secure the 2 x 25mm long spring carrying screws to the rear chassis with 3mm nuts. Assemble the guide pin V9B to the chassis with an 8mm machine screw (See photo).

Snap fit the motor mount assembly onto the pivot ball on the chassis.

Assemble the coil springs V6C, locating washers and nyloc nuts and adjust the nuts equally to show approx 4mm of thread above the nuts

Fit the O ring V8F into the plastic O ring holder and assemble to the pivot plate using 2 x 6mm long self tap screws. Do not fully tighten these initially. Varying damping can be achieved by adjusting these screws to vary the tightness of the O ring around the guide pin.

Press fit the 2 plastic rear axle bushes V8E into the motor mounts (See photo).



### Rear Suspension

All Club kits & Banger kits have a Pre Built Pod so some of the next step are not used. Cut rear spring locating washers V8C and the e01 ring holder V8D from the slot in the pivot plate V8B. Join the 2 motor mount halves V8A together using a 16mm self tap screw. Hold the two halves down on a flat surface when tightening

### Rear Axle

Push rear axle V10 through the bushes and fit plastic spur gear V11A to drive side and spacer V11B to the other side, turning these until the flats on the axle engage with the flats inside the plastic parts. If bushings are loose in holder, use thread locker to fit.

## Speed Controller (S/C)

The speed controller supplied is a simple resistor switch unit which is easy and cheap to repair if damaged. Three speeds are available for forwards and reverse, the current being diverted through both resistors for the slowest speed and through one resistor for the second speed. The resistors will get hot in use so wires should not touch them.

Open the speed controller bag and fit the three plastic pillars to the chassis using 9mm long self tap screws (hold with pliers if necessary to prevent them turning). Remove the backing from the foam rubber strip and attach it to the inside edge of the speed control plate, this is to protect the battery once it is installed. Assemble the S/C onto the pillars with 9mm long screws.

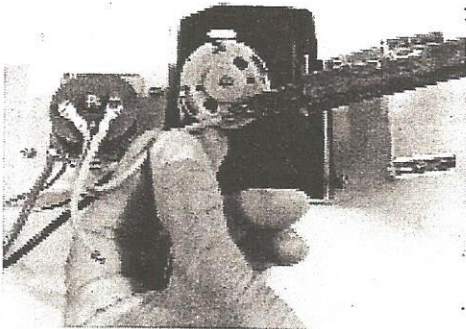
If Using ESC electronic speed controller, Follow ESC instructions and use V14 Battery Box to hold battery pack in place.

## Motor

Solder the leads from the speed controller onto the motor V14

See photo

Position the motor and secure with 2 x 10mm long machine screws with washers under their heads.



Fit the pinion gear V15 and tighten the grub screws ensuring one is aligned with the flat on the motor shaft. With the motor screw fully back in the adjusting slot, the mesh with the pinion supplied should be correct. i.e. a small amount of backlash should be felt when the wheel is turned.

## Wheels & Tyres

It is necessary to bond the tyres to the wheels with adhesive. A small tube of cyanoacrylate (super glue) is recommended. Position the tyres carefully on the wheels. We suggest a test spin on an axle to check that the tyre is running true before bonding. Place the wheel and tyre face down on a flat surface, stretch the tyre away at one point, inject a small blob of super glue and let go of the tyre immediately.

(A third hand may prove helpful here). Repeat this approx. 6 times around the wheel. This should prove sufficient

Fit the wheels to the car with 3mm nyloc nuts. Tighten the rears fully but not the fronts.

## Radio Installation

The car is designed for control by two channel radio with two servos. One servo operates the steering and the other operates the speed controller. If ESC is used then only one servo is needed. Most transmitters have two joysticks. The right hand stick moves from side to side and is used for steering whilst the left hand stick, which moves forwards and backwards, is used for speed and forward and reverse control. It is usual to connect the linkages so that when the steering joystick is moved to the right, the car turns to the right (when moving away from the driver) and when the speed control stick is moved forwards, the car goes forwards. When the speed control stick is moved back, the car goes into reverse.

The two servos in your radio set are the same so it does not matter which is used for steering and which is used for speed control.

## Steering Servo

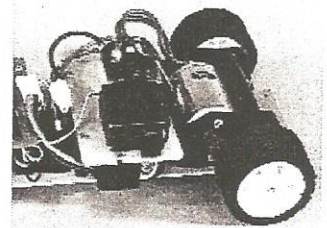
Select one servo for the steering and assemble the servo saver unit V16 to it as per separate servo saver instructions. Fix the two servo mounting posts V5D to the holes in the chassis with 9mm long self tap screws and fit the steering servo to the posts with 9mm self tap screws and washers. Feed the track rod ends through the holes in the servo saver arm.

Note: the two sets of holes allow a choice of steering lock. Try the lower holes initially. Adjust the track rods for length if necessary and snap fit them onto the ball screws using pliers.

## Speed Control Servo

Fix the two servo mount posts to the speed control plate with 9mm self tap screws and fit the servo with washers and self tap screws. (See photo).

Prepare a suitable servo output arm. This will probably mean cutting off one or more



arms to leave one only. Fit this to the servo in the vertical position as shown. Screw the plastic ball socket approx. 4mm onto the linkage rod, check for length, feed through a hole in the arm and snap fit onto the disc ball nut. When the servo arm is vertical, the speed control disc should be in the off position.

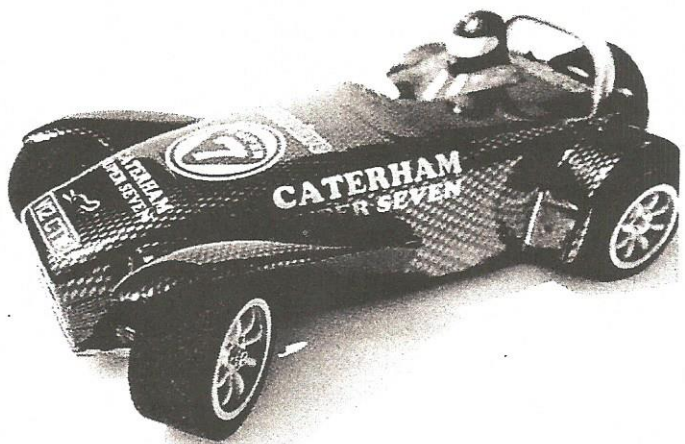
## Battery

Attach the small piece of adhesive foam rubber to the battery retainer V5C. Fit a 9mm self tap screw into the retainer block, slide the battery into place under the speed controller and fit the retainer block into the slot and tighten the screw.

If ESC electronic speed controller is supplied then V14 battery box is used.

## Receiver (R/X)

First attach the aerial mounting pillar V17B to the chassis with a 9mm self tap screw. Position receiver and fit to the chassis with a small piece (10mm) of D/S tape



## Radio Power Connection

The radio battery pack supplied with the radio equipment is not used in V Series cars. The radio receiver (RX) and servos are powered by the car battery. This is possible because the car battery is 4.8 volts which is the same voltage required by the radio. This arrangement saves weight and running costs. Two wires are fitted to the speed controller for this purpose.

The radio switch may be fitted but is not necessary and is not shown on the photos. When the car is not being raced, the battery should always be disconnected. This automatically switches off the radio. To connect up the radio therefore, it is necessary to cut the lead from the switch to the receiver close to the switch, strip approx. 4mm of covering from the ends of the wires and tin the wires with solder. Then solder to the wires on the speed controller, black to black and red to red and cover the joins with insulation tape or a similar item. Fit the two servo plugs into the receiver (RX) and neatly position and tape up the surplus wire.

If you wish to use the radio switch, this is best fitted to the chassis at the side of the steering servo using D/S tape. In this case cut off the connector to the radio battery pack and similarly connect the wires to those on the speed controller.

## Aerial

Thread the receiver aerial back and forth through the holes in the aerial plate as shown and fit the plate to its mounting pillar with a 9mm self tap screw.

## Testing The Radio

Fit the necessary dry batteries into the transmitter (TX), fit crystals into the RX and TX and you are ready to test the radio.

First remove the steering servo saver and the S/C servo output arm. Then switch on. Always switch the TX on first then the RX.

Both servos should twitch. Next set the two trim levers at the sides of the TX joysticks to neutral and refit the servo saver and the output arm. Both should be as near to vertical as possible. Remember, the R.H. stick should be operating the steering. If it is not, swap the plugs over in the receiver. Also, if necessary, change the direction switches on the TX so that the car will turn right when the stick is moved to the right and will move forward when the L.H. stick is moved forward. If ESC is used follow ESC Instruction booklet.

## Rear Body Mounts

Most of our V Series cars employ unique quick release body fitting systems. There are two types of rear fitting - the twin exhaust type as used with the V-Dub and Willis bodies, and the hook type as used on most other bodies (See photo) Both use Alloy plates which are fitted to the chassis with M3 screws and nuts. The body shell can be raised if required by fitting packing washers or nuts under the plate. The exhaust pipe kits include two rubber anti-vibration washers which fit over the pipes before the body is fitted. Fix the pipes to the rear plate with self tap screws.

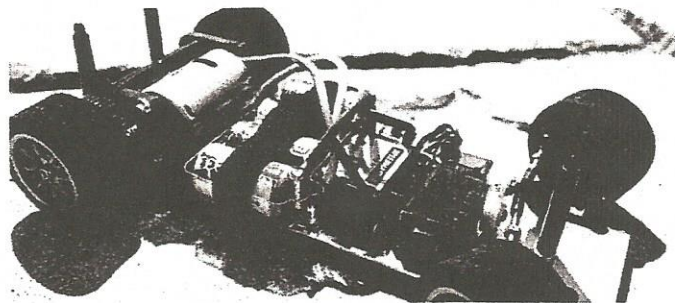


The hook type plastic moulding is fitted to the rear of the body shell with two 9mm self tap screws. Drill 2 holes where marked in the body 3mm diam. to suit. Fit the slotted plastic plate to the rear plate with M3 screws and nuts. Again, packing washers or nuts can be used to accurately position the body shell.

Fix the piece of foam rubber to the centre of the hook moulding. This stops vibration and ensures that the hooks leave the slots freely when the body is hinged open to remove.

## Mardave 7

Apart from a few changes to wheelbase and chassis, the New Mardave 7 has the same build quality as the V12. There is a Lexan Battery tray that is fixed to the chassis by 3 screws and m3 nylocks, and cells are held in place with a Velcro strap. Body Shell is mounted on three posts and the shell has dots and trim lines to make it easy to mount. Decals are by Nitell Graffix and add a great finishing touch to the Kit.



## Front Body Mounting

The front body mounting post need a 5mm hole in the bodyshell, and the shell is secured with body clips.

## Body Shell

Trim the front and the rear profiles carefully with scissors or shears to the lines etched on the body and smooth with a file and fine emery paper. Some of our bodies may require wheel arches cutting out. Curved metal snips are ideal but saws, drills, files, etc. can be used to trim to the lines etched on the body. Drill 2 holes if necessary 5mm diam. for the front body mounting.

## Painting and Finishing

The body shell material is A.B.S. plastic. If you wish to paint it, cellulose car touch up sprays are recommended. Use masking tape or sellotape to achieve multi-colour schemes.

To fit the decals, cut closely around the shapes, remove the backing paper and position carefully. Note that the side windows are printed the correct distance apart and therefore can be cut out and attached in one piece.

## Finally

The steering track rods should be adjusted for length so that the front wheels are parallel or toe in slightly.

When driving the car, the transmitter trims should be adjusted so that the car will run in a straight line hands off and the speed controller will always centralise in the neutral position. Try to avoid stalling the motor. If the car does not respond to the throttle, switch off immediately and locate the trouble. Lubricate the rear axle bushes, front wheels and king pins/steering arms initially and occasionally with a light oil. The V Series are supplied with a 12 tooth motor pinion. Larger pinions may give a slightly higher top speed but slower acceleration. When racing on a circuit the choice of gear ratio will depend on the length of the straights and the duration of the race. Higher gear ratios generally use more power.

Mardave  
11 Watkin Road  
Hedge End  
Southampton, Hants, SO30 2TB  
+44 (0)1489 799163  
e-mail mardaveracing@aol.com  
www.mardave.com