

# CONSTRUCTION RULES

## BANGERS

### Chassis

1. It must be as per the standard 3mm counter sunk Mardave alloy chassis available in various anodized colours, hot rod chassis with rear lip, or the 3mm Kamtec/Large It/Tic alloy chassis with the following limitations: - If left to the original kit length, the chassis must be used with a shell that is made to fit its size properly. Countersunk chassis and screw set may be used.
2. Limousine chassis must be the same thickness as the alloy V12 (maximum 3mm) & must have the correct body shell to fit, maximum length for a Limousine chassis with body shell is 2 ½ ft.
3. Any Limousine entered must represent a full counterpart.
4. No GRP or Carbon chassis are permitted.
5. All holes must line up with a 1mm tolerance.
6. Any sharp edges must be smoothed out on the chassis.
7. There must be no additional strengthening of the chassis, by adding material along the length of it to prevent the chassis from bending.
8. Rear extension plates are allowed, but should be no wider than the chassis, be no thicker than 3mm alloy or GRP and must be covered by the shell and must have a minimum of 1" (inch) or 25mm gap between the shell & mounting plate.
9. Stepped chassis (benno) maybe used but not in any micro meetings, if used at any time there must be a minimum gap of 1" (inch) or 25mm between the chassis & body shell.
10. No front extensions allowed.
11. A chassis will be used for scrutineering.
12. Chassis and Top Plate maybe off-set a maximum of 5mm from the centre of the chassis.

### Top Decks

13. Original Mardave alloy top plate; or GRP top plate maybe used, Kamtec or Large-IT ones are recommended. Milsy and Fuller top plates are also permitted.
14. Any top plate must not protrude any further forward than in line with the steering servo saver.
15. The width of the top plate should not extend past the centre line of the wheels.
16. Top plate must have a maximum 3mm thickness.
17. No full length double decks.

### Batteries

18. Only 4 cell Sub C Ni Cads & ni-mh cells permitted.
19. Max 5000 Mah for heats and finals and max 3700 Mah for DD.
20. They must be covered in clear heat shrink or the manufacturers covering with identification clearly visible. Battery bars must be no wider than the battery.
21. Only plastic or nylon battery retainers permitted no extra plates inside the car.
22. Cells running down the centre of the chassis / top plate may have a 5mm off-set tolerance from the centre of the chassis plate. All components must remain within the width of the chassis plate unless the battery is in the standard Kamtec / Large-IT position.

### Speed Controllers

23. Mardave/Large It/Tamiya/Kamtec mechanical & resistor type speed controllers only (K9 microswitch is acceptable).
24. No Electronic Speedos (ESC).
25. No additional material allowed on the top plate, with the purpose of it being to protect the manual speed controller. The top part of the K9 is permitted however.
26. Speed Controllers maybe off-set a maximum of 5mm from the centre of the chassis.

### Gears, Motor Pod & Axle



27. 32dp pinion gears only. Pinions Minimum 12 Tooth, Maximum 18 Tooth.
28. Only standard spur gears to be used - Mardave / Kamtec / Tic / Lee 12, 46, 48, 49, & 50 tooth only.
29. Gear sleeves/clips are allowed on the gear arms.
30. Derlin gears, alloy drive hubs or Z Drives are not permitted.
31. Standard Mardave / Kamtec / TIC / Lee 12 axles can be used.
32. Ball races may only be used on the back axle.
33. Standard Plastic Mardave / Kamtec / TIC / Lee 12 motor pod only.
34. A pivot ball must be used and the pod base must be fastened to it by the cup on the plate as originally intended. However the use of a small clip, the same width as the cup may be used to prevent it coming off and a bolt/screw can be fastened through the cup into the pivot ball. The new Kamtec motor pod set is permitted.
35. No GRP or alloy rear pods.
36. Any new release Gear, motor pod or axle hop up be agreed on by the RCBWS committee before use.

### **Wishbones, Steering Arms & King Pins**

37. Steering arms can be standard or may be modified to the ball and link type.
38. Wishbones are to be standard; either the basic injection moulded Mardave / Kamtec / TIC / Lee 12 ones and must be hollow. No alloy wishbones. The Mardave diamond wishbone is not permitted.
39. All wishbone holes must remain in their original position.
40. No wishbone protectors or any other strengthening of wishbones.
41. Front springs must be fitted to all lengths of vehicles.
42. Only standard, hardened and stainless Kingpins allowed.
43. No pipe to be fitted to kingpins.
44. No adjustable kingpins to be fitted.
45. Strut braces are not permitted.
46. Any new release wishbone, steering arm or king pin hop up be agreed on by the RCBWS committee before use.

### **Inner Wings**

47. Kamtec / Danza Salvage & Signs inner wing kits only.
48. Front Wings must be cut to replicate their full size counterpart.
49. A small ABS bumper may be added to the front of the wings for realism, by using 2 small screws/ bolts (Granadas & Crowns only). These must be for decoration and not strengthening.
50. Inner wings can be either body or chassis mounted and can be melted to fit inside the shell.
51. If the wings are body mounted then you can use 4 bolts to fasten the wings to the shell.
52. If the wings are chassis mounted then no more than four bolts to be used.
53. No folding under or gluing of the wings.
54. Any new release inner wing kits to be agreed on by the RCBWS committee before use.

### **Permitted Motors**

55. Mardave G1 & G2, HPI Saturn 20T & 27T, Kamtec Satan 20T, Kamtec 21T, Core 21, Axial 20T, Etronics 20T, Minimum 20T, any motors not listed are to be approved in advance by the RCBWS Committee.
56. Tamiya Mabuchi 540 Silver Can with black end bell.
57. Heat sinks can be fitted.
58. Original label must remain intact and motor tabs remain untouched.
59. Fans must remain intact for RCBWS Heats & finals, no part of the motor internals can be modified.
60. Use of motor cleaning fluids and additives allowed.
61. **TAMPERING WITH MOTORS WILL NOT BE TOLERATED** - Anyone seen or any evidence of tampering or anyone suspected of tampering, the driver will be asked to change the motor. If found to be tampered with, the driver will lose all points scored and excluded.

### **Tyres & Wheels**

62. Must be foam tyres and commercially available.
63. No tyre additives permitted.
64. Any aftermarket wheel must be of the same diameter as per Mardave, Kamtec, Contact Wheels, or

TIC Bruno Wheels.

- 65. Ball raced front wheels are not permitted.
- 66. Alloy wheels are NOT PERMITTED.
- 67. No cut down wheels that allows shells to be slammed.
- 68. Wheels must be 26mm width.

### **Shells**

- 69. All shells to be cut to the cut lines.
- 70. Wheel arches must be cut to the lines or lips marked not above or below unless running inner arches when the front arches can be cut higher.
- 71. No flared arches on shells.
- 72. Sills may be cut or folded to resemble a full scale counterpart.
- 73. Windows must be completely removed as close to original car as possible.
- 74. Front window must have at least  $\frac{3}{4}$  of the plastic removed to allow a name visor.
- 75. No window gussets.
- 76. Roping and gluing of pillars is permitted.
- 77. No unsightly, rude or offensive slogans or gestures on the shells.
- 78. Shells must be in line with the agreed shell lists.
- 79. When mounting the shell the arch must not come lower than the top of the wheel lip unless the shell has a low rear wheel arch (e.g. mk10 Jag, DS420), when the rear arch must not be lower than the top of the rear wheel nut.
- 80. There must be a 3mm gap between the shell and the floor.
- 81. Any shell with bumpers removed the shell must remain the same height as if they was still fitted, for example mk7/8/9 Jaguar bumpers maybe removed but the shell must remain the same height as if they were on there, in other words no slamming!.
- 82. Shells used must be correct to the chassis, i.e. no SWB shells on LWB chassis, , no LWB on minster or XL chassis.
- 83. No unpainted shell permitted for Championship finals.
- 84. XXLWB Shells maybe held together by 0.5mm alloy (same as used in alloy bangers).

### **Body Mounts**

- 85. Cars to have 4 mounting points.
- 86. These may be of any non-metallic material, not exceeding 10mm in width and must not protrude more than 10mm through the body shell.
- 87. Mardave V10 & Kamtec B10 style mounts may be used. If you use two V10 or B10 style mounts, no other shell securing points, i.e. posts can be used,. Only 2 V10 or B10 mounts can be used to secure the shell to the chassis.
- 88. If you are using V10 or B10 mounts at the front and on the top plate, you must remove any rear V10 & B10 mounts.
- 89. If you are using front and rear V10 or B10 mounts, you can keep the bottom part of the V10 or B10 on the top plate, provided it is not used to secure the shell. (We recommend using front posts).
- 90. If anyone loses their boot, they are permitted to use the bottom half of a V10 or B10 mount to protect the rear pod.
- 91. If you use the V10, you can use all six mounting points and secure the shell using clips through all 6 lugs.
- 92. You may use 4 M3 coach screws or M3 nuts, bolts and washers to secure the shell, rather than body clips.
- 93. Body clips/M3 nuts can be cable tied at the ends and together to prevent them coming loose from the body mount. Tape must not be used to cover the cable ties.
- 94. Shell strut. Only plastic/rubber/metal washers, slightly bigger than the post size but not exceeding 1" square to be allowed to raise the shell up off the posts.
- 95. Body mounting for XXLWB (600mm chassis) you may use two body mounts per 200mm so six would be allowed.
- 96. Cable ties must be trimmed back.



### **Roof Fin**

- 97. The roof fin must be fitted to the roof of the car and must not have sharp edges.
- 98. It must be plastic and no larger than the standard Kamtec roof fin.
- 99. It must have the driver's number clearly visible on both sides.
- 100. It must not be mounted forward of the half way point on the roof.
- 101. No mascots, dummies, or bolt on engines etc. on the outside of the body shell.

### **Shell Repairs**

- 102. You may use glue sticks, tape, cable ties, and plastic/solvent weld with joining plates in conjunction with nuts & bolts as to their full size counterparts for REPAIRS only.
- 103. The above repair methods are allowed anywhere on the INSIDE of the body, except if using tape, whereby you can use tape on the outside, but can only overlap the crack/split/decimation by 1" either side of the damage.
- 104. If using plastic for repairs;
  - 1. Any size piece of plastic for the repair can be used, but it can only overlap the crack by 1" either side.
  - 2. If you lose the front, rear or corner of the shell you can replace this, but it can only be attached with a 1" overlap of the original shell.
  - 3. 1 layer of plastic repair only (no overlapping patches).
  - 4. Cable ties only to repair broken patches after that.
- 105. Neither armouring nor the use of mastic allowed.
- 106. No double skinned body shells.
- 107. Each club to specify what repair methods can be used (i.e.. Pipe weld is not permitted at Fast Food Raceway, Devon).
- 108. NO REPAIRING OF SHELLS BEFORE THE FIRST RACE.

### **Ride Height**

- 109. Scrutineers will have a 3mm clearance plate, which your vehicle must run freely over the top of, including the shell. Should it scrape in any way your vehicle will fail scrutineering.
- 110. This is in the interest of protecting the race carpet from damage.

### **Ballast and Weights**

- 111. Adding extra corner weights or ballast is not permitted.

### **Bumpers**

- 112. No internal or external bumpers permitted.

### **Servo Savers**

- 113. Any type of servo saver or bell crank style servo saver is permitted.
- 114. A small piece of ABS is allowed behind the servo saver as a servo saver protector.
- 115. Servo Saver protectors are permitted.

### **BREAKING OF RULES**

- 116. Anyone found to be breaking any of the above rules, being abusive to other racers or organisers; touching cars on the track during a race; lowering shells; using a twisted motor, will be banned from any remaining RCBWS Rounds and RCBWS Title events.
- 117. PLEASE NOTE: IT IS YOUR SOLE RESPONSIBILITY AS THE DRIVER, OR PARENT OR A JUNIOR DRIVER TO ENSURE YOUR CAR IS BUILT TO THE ABOVE RULES. FAILURE TO DO SO WILL RESULT IN POINTS BEING REMOVED FOR THAT MEETING WITHOUT ANY NOTICE OR EXPLANATION. A SECOND OFFENCE WILL RESULT IN DISQUALIFICATION FROM THE REMAINDER OF THE SERIES.