

BRCA GT12 TECHNICAL RULES

This class is based on the principals of close, fair and low cost racing. This will make it both an ideal entry level class for the driver who wishes to try his or her hand at RC racing for the first time, but the rules for the class will also cater for the more competent driver who wishes to take their racing further. In the interests of keeping racing costs reasonable, price limits have been placed on certain items and there is strict guidance as to the use of additional upgrade parts and components. This should also ensure that the performance of each car is more dependent on driver ability and good setup than on budget.

The Rules outlined below may not necessarily cover every single aspect of car construction – drivers are required to follow the spirit and intention of these rules if any ambiguity is discovered.

1 CONSTRUCTION RULES

- 1.1 The essence of the sport of Radio-controlled car racing is competition between realistic models of racing automobiles. All cars must comply with dimensional requirements stated in these Rules.

All cars will use replica GT shells from the list of eligible shells given in Appendix 1
Minimum weight is 950 grams, ready to race including lap-counting transponder at all times during the race/heat/final.
- 1.2 Wheel rim diameter maximum is 40mm, and 26mm Width. Only commercially available wheels may be used. No modifications or changes to the original manufacturer's design and dimensions are allowed.
- 1.3 The tyres must be black except for side wall detail.
- 1.4 Tyre treatments are permitted at the organiser's discretion and are the user's responsibility. Organisers who ban use of specific products should state on the entry forms. Flammable and toxic substances are not recommended. The BRCA has not yet found a substance that it can recommend for the treatment/cleaning of tyres. The BRCA draw organiser's attention to the possible hazard created by large numbers of competitors using tyre treatments in a confined space. The BRCA recommend that the competitor adheres to the methods of usage as stated by the supplier of the treatment.

A list of additives will be published prior to start of each season. New additives may be added during the season, subject to approval by the BRCA 12th section committee.
- 1.6 Tyres must have a minimum width of 20mm and a maximum width of 26mm.
- 1.7 Wheel nuts and/or axles must not protrude more than 2.0mm beyond the outer edge of the wheels. No more than 1.5mm of wheel outer side may be exposed (not covered with rubber) on the outer edge of wheels.
- 1.8 Bumpers may be fitted but must be designed to minimise injury that could result from being hit by a car, also to reduce the risk of damage to other cars. Rigid bumpers made from non-resilient materials such as metal are not allowed. Other sheet materials should have an edge radius not less than 1.5mm.
- 1.9 Only one wing is allowed on the car, maximum dimensions to be, width 165mm, chord 50mm, unless the original car had more than one wing. The second wing must be to scale within 10% in size and location.
- 1.10 Overall maximum width of the rolling chassis to be 165mm including wheel nuts and axles, not including bodyshell. Wheelbase is to be 196mm minimum to 208mm maximum. The race ready car must have a minimum unmodified roof height of 85mm with the bodyshell fitted.
- 1.11 All cars must have clear windscreens, unless the actual car did not have clear windscreens.
- 1.12 Side and/or rear windows, if any, must be clear.
- 1.13 All cars to have clearly visible identifying numbers to the Race Directors satisfaction.
- 1.14 Numbers must be at least 25mm high with minimum stroke of 4mm. They must be black numerals on a white background.
- 1.15 No portion of the chassis or any equipment may extend beyond the body, except aerial masts, rear diffuser (if fitted and in accordance with Rule 6.1.1) and up to four posts for the purpose of mounting the body shell.
- 1.16 Flexible masts/tubes only may be used.
- 1.17 Openings in the body other than ones appropriate to full size cars shall be kept to a minimum.

- 1.18 Wheel cut-outs may not be more than 10mm larger than the tyre radius. Exception- scale size and/or shape wheel well cut-outs. Wheel wells must be cut out if the original cars are cut out.
- 1.19 When initially entered in a meeting the body shell must be neatly finished and complete
- 1.20 Body and chassis must be securely joined at all times while the car is on the track.
- 1.21 Body shells must be listed in Appendix 1 to these Rules to be eligible for use in BRCA GT12 Nationals. Body shells must be approved by the Committee, a list of approved shells will be available on the BRCA website. Body shells when painted must have a minimum of headlights, front grill and rear lights picked out in a realistic colour, size and shape that clearly separate them from the other body colours. Additional grills and intakes picked out in the same way are preferred. Windows will be clear, may not be cut out, and will be shaped as per the original car. Bodies must not be cut above the lower cut lines marked on the body shell. If there is a diffuser cut line, the bodyshell may be cut to this line.
- 1.22 Only one drive motor is allowed per car.
- 1.23 The minimum ground clearance of the car, not including the spur gear, is 3mm; minimum 1mm under the spur gear; this will be checked during scrutineering for each qualifying heat and final race.
- 1.24 Only Personal Transponders will be used to record laps at BRCA sanctioned events and Nationals.

2 DEFINITION OF BRUSHLESS MOTOR

- 2.1 13.5 brushless - Any motor listed in any of the Electric Board Homologation List for Brushless Spec Motors (13.5) as updated from time to time.
- 2.2 17.5 brushless - Any motor listed in any of the Electric Board Homologation List for Brushless Spec Motors (17.5) as updated from time to time.

3 DEFINITION OF A ZERO-TIMING SPEED CONTROLLER

- 3.1 Speed controllers may not be equipped with any form of automatic or programmable timing advance. If this feature is available on the particular speed controller it must be disabled and placed in an approved mode
- i.e. the "ROAR blinking LEDs mode." Only Speed controllers from the BRCA Approved Blinky ESC's list may be used.
- 3.2 Reverse function must not be used in GT12- class cars at Nationals.

4 BATTERIES ALLOWED

- Any Batteries conforming to the current Electric Board 1S Stick and Saddle LiPo battery list as updated from time to time. All Batteries used in any competitions MUST be hard-cased.
- 4.1 Soft cases or no cases are not allowed.
 - 4.2 Cars with 13.5T or 17.5T Brushless Motors will be powered by cell/s with a maximum nominal voltage of 3.8V.

5 CHASSIS AND COMPONENTS

- 5.1 The chassis component will consist of one continuous sheet of material that extends from a minimum 10mm ahead of the front axle line and runs continuously along the car to end 25mm minimum behind the rear axle line. The chassis may not include any features designed to allow the front and rear axle to rotate along the central axis of the car relative to each other. (Intent – that the chassis supports all the suspension components and is sufficiently rigid not to be used as a working part of the suspension system/s).
- 5.2 Chassis and Front Suspension components must be commercially available
- 5.3 No modifications are allowed to the chassis, but edges may be smoothed, sanded, or sealed.
- 5.4 Chassis and Front end design may be offered in an “alloy” or “composite” version.
- 5.5 Metals used in the production rolling chassis and any aftermarket parts may only be brass, steel or aluminium with the exception of turnbuckles which may be titanium. Brass, lead, and steel may be used as weights.
- 5.6 All suspension systems must operate independently of the chassis component.
- 5.7 Separate dampers are only allowed on the rear suspension. Dampers requiring seals to prevent the egress of any type of damping medium are not allowed. (Intent – that dampers are non-sealed ‘straw’ or ‘tube’ style. Dampers with any type of damping medium contained in a sealed reservoir are not permitted).

- 5.8 The front end of a GT12 car may be fitted with simple independent suspension. Over the full travel of the suspension, there must be no camber change relative to the main chassis. Intent, that suspension systems from Touring cars, GT10 cars, LMP12 cars, and F1 cars are not used. Changes to the suspension using shims/straps/spacers to adjust camber and caster are allowed.
- 5.9 In addition any camber change due to flexing of components should ensure that there is no more than 2 degrees of change relative to the chassis when subjected to a load of 2kg in the direction of the suspension travel.
- 5.10 The front end must be fitted as per the manufacturers instructions, with no modifications allowed.
- 5.11 Chassis and front end designs no longer need to be homologated provided they meet the above requirements. A list of previously approved designs will be maintained.
- 5.12 The rear axle must not have any articulated element and may be fitted with a Differential.
- 5.13 Only a single fixed speed transmission is allowed.
- 5.14 Gears in the single fixed speed transmission must be 32DP or 48DP only.
- 5.15 Rolling element (ball) bearings are allowed on the front and rear axles.
- 5.16 Cars may only have two driven wheels with the drive to the rear axle.

End of Construction Rules

REVISION HISTORY

- V1.0 JG Amended from EGM 2014 (21 May 2014)
- V1.1 MS Shell List Updated (21 May 2014)
- V1.2 MS Incorrect Blinky Diagram Removed (22 May 2014)
- V1.3 JG Audi Shell Added (01 June 2014)
- V1.4 PL Lambo GT12 bodyshell added (23rd January 2015)
- V1.5 DG Updates from 2015 EGM (1 Sept 2015)
- V1.6 DG Changed Appendix 1 to state GT Section committee instead of 1/12th Section Committee (22 Sept 2015)
- V1.7 MS Re-formatted as construction rules only (24 Sept 2015)
- V1.8 DG Porsche GT3 Bodyshell added (23 Jan 2016)
- v2.0 DG Changes made after 2016 EGM (24/05/2016)
- v2.1 DG GTM Bodyshell added (19/01/2017)
- v3.0 DG Changes made after 2017 EGM (1/11/2017)
- v3.1 NC GTF Bodyshell added (19/02/2018)
- v3.2 NC Changes made after 2018 EGM (27/08/18)
- v3.3 NC MLGT3 bodyshell added (01/09/18)
- v3.4 LO LS3 bodyshell added (16/10/18)
- v3.5 LO LTS-GT bodyshell added (05/11/18)
- v3.6 MRC Updated introduction (no rule changes)
- v3.7 MRC Updated following 2019 GT AGM, BDGT12-AGT added (21/05/2019)
- v3.8 MRC Updated adding in Front End List
- v3.9 MRC Italia bodyshell added (11/10/2019)
- v4.0 MRC Atom2 Carbon Chassis added (21/03/2020)
- v4.1 MRC BittyDesign Seven20 bodyshell added (11/06/2020)
- v4.2 DG Montech RSGT3, Montech AKURA, Protoform Corvette C8 Added. (05/10/20)
- V4.2a MRC Updated – no changes, added note of clarification on BD Seven20 (13/03/21)
- V4.3 DG Updated to include Mardave Venom Pulsar Chassis and Front End. (BRCA Approved from 01/01/2021)
- V4.4a DG Updated to include Mardave chassis VP103 and single beam front end VP5B
- V4.4b DG Updated to include Atom 3 chassis+front end, Carbon and S2. 03/03/2022 (Never Issued as awaiting commercial release of Atom3)
- V5.0a DG Updated after 2022 EGM (Atom3 still not included as not yet released) (07/07/2022)
- V5.0b DG Atom3 now included as commercially available. 03/04/2023
- V6.0 DG Updated after 2023 EGM
- V7.0 MS Updated after 2024 EGM (19/07/2024)