

# 10<sup>TH</sup> SCALE ELECTRIC CIRCUIT SECTION



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**BRCA**  
BRITISH RADIO CAR ASSOCIATION

2023 HANDBOOK

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# HOW TO USE THIS HANDBOOK

This booklet is aimed at competitors or officials for 1/10th electric powered 4WD Touring Cars, 1/10th electric powered FWD 2WD Cars and 1/10th electric powered 2WD F1 Cars, enabling them to have the information always required for the class. However, it should prove useful to all club racers too as we hope it will give the reader more information about our national series.

The information contained herein should be read in conjunction with the Association Handbook as the General Rules contained in the handbook apply to us all, at all events, and in any circumstances take precedence over sectional rules. It is every member's responsibility to ensure they have read and understand. - ask an executive official as appropriate for clarification if you do not.

The application of the rules works thus:

The Association General Rules apply at all events we go to, including most club racing as we are all members of the association at all times, Sectional Rules (as in this book) apply at Nationals and Clubman Nationals, as sanctioned by the section committee. Sectional rules do not apply at clubs, unless the clubs wish them too and it is entirely the clubs choice either way.

## Changing a rule

Every rule in this booklet and the Association Handbook was proposed and voted in by one of your fellow racers - none of the committees can simply 'make up' a rule. If you don't like a rule, you can easily try and have it changed (though the first thought should be to find out the rationale of why one of your fellow racers proposed it in the first place perhaps?) If you're happy a rule needs changing, get somebody else to agree with you - a seconder - and then write/email to one of the following people:  
 - Section Rule to be changed - Section Secretary - who will liaise with you to ensure it's then voted on at their section conference. Association General Rule including the Constitution - Association Secretary - who will liaise with you to ensure it's voted upon at the Association annual general meeting. You should endeavour to be at any meeting where a rule change, you have proposed, is taking place as it will be discussed, possibly amended, plus you'll almost certainly be asked to elaborate on it.

## Summary

'The Rules' should be the easy bit of our sport, but they're not as we're all passionate about our sport and should want to have an input into how it's run, make sure you have your say, the Association works because people get involved and make a difference.

If you don't like how something is being done, you should offer to do it yourself, every Association official is a volunteer, and they are doing a role because it needs doing. However, it is as much your responsibility to do that task as it is theirs - just that they volunteered to do it before you had the opportunity to offer to do it better.

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# Hello and welcome to Electric Touring car, F1 & FWD racing . . .

The 1/10th scale, electric powered section covers 3 different types of racing cars.

The largest class is for 4-wheel drive touring cars capable of speeds in excess of 70mph making them the fastest electric power class. They are made from carbon fibre, titanium, composites, and anodised alloys and feature advanced electronics, making them one of the most tuneable classes.

F1 cars are 2wd scale versions of the hugely popular motor sport class raced around the globe. They are made from carbon fibre, titanium, composites, anodised alloys and feature advanced electronics, however strict construction rules reduce the allowable tuning options that the 4wd touring cars have. Front Wheel Drive 2wd 'FWD' cars are based on scale BTCC style hatchback cars and are the most cost effectively way to get into our section. Again, the cars are made from carbon fibre, titanium, composites and anodised alloys. Electronics are most budget friendly aimed at entry level motor sport.

The racing series for our section is divided into 2 different championship series.

The 4wd National series and the 2wd National series. Both series run on separate days all over the country at some of the best UK tarmac tracks.

The 4wd National series runs 3 different motor 4-wheel drive touring car motor classes. The Modified class is the fastest class allowing any motor from the BRCA EB lists with open speed controllers. The Super Stock class is for 13.5 Blinky motors and fixed timing speed controllers from the BRCA EB lists. The Stock class is for 17.5 Blinky motors and fixed timing speed controllers from the BRCA EB lists.

The 2wd National series runs 2 classes. F1 with 21.5T Blinky motors and fixed timing speed controllers from the BRCA EB lists. FWD with 17.5T motors and fixed timing speed controllers.

Both National series are run outdoors, with the season running from 1st April to 30th September. All the venues we visit are purpose-built tarmac circuits. All classes run on a control tyre which ensures a level playing field and reduced cost in tyre selection. The tyre we use is voted on by our drivers before the season starts. All junior entries into our events half price, as we recognise that our young drivers need to be encouraged and nurtured into what we hope will be the world champions of the future.

Our National series has become world-renowned for its competitiveness and prestige. This has been thanks in no small part to the will and enthusiasm of club and BRCA officials and of our competitors, who have countless years of experience and a vast knowledge base to share with newcomers. We like to think of ourselves as a friendly class of RC racing in which you can choose to compete at any level. Our aim is to organise the biggest and best 1/10th scale Touring Car, F1 & FWD Championships in the world, while giving good value for money. We hope that you will choose to become a part of what we do and come and race with us. I wish you every success with your racing this season and hope to see you trackside.

## *Jordan Norwood*

BRCA, 1/10th Electric Circuit Chairman

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Taking up a brand-new hobby is a somewhat daunting prospect for someone of any age or background. There's a lot to learn and take on board, often before you've really started out properly. RC car racing is no different, and in fact nearly always it will be of benefit to do some reading and find out the basics before committing to a purchase or deciding.

This article assumes that you've already decided that RC racing is for you and that you're considering Electric Touring Cars or F1 as the class to start off with, or maybe you've previously raced another class such as nitro on road or electric buggies and are coming in to 1/10th Electric Circuit for the first time.

The short checklist below outlines the milestones that you'll need to reach in order to go from 'having an interest' to 'going racing' in either class.

*Become  
a BRCA  
Member*

*Find your  
nearest club  
that supports  
the class*

*Purchase the  
equipment  
you need*

*Build/  
prepare your  
car and go  
racing*

*Take your  
racing to the  
next level*

## Become a BRCA member

BRCA membership is important and should be the first thing to cross off your 'to do list'. For more information about what BRCA membership provides and why it is important, visit the BRCA website at [www.brca.org](http://www.brca.org). You can also use this link to join the BRCA online.

## Find your nearest club

1/10th Electric Touring Cars and F1 cars are designed specifically for racing, which means they aren't suitable for driving up and down the street or in a local car park. Therefore, it is strongly advisable to find out where your nearest club is that supports either or both classes of racing and pay them a visit. Finding your nearest club will not only allow you to establish where you will be able to race your car, but also to start getting that thing which money can't buy; good advice! On your first visit to the club, ask the racers there about their cars and the racing. What equipment do they use? How much does it cost and where do they buy it from? Are there any rules specific to the club that you need to be aware of?

Establishing these things will lay the foundations for what comes next, give you a much better understanding of what racing entails and hopefully enable you to make informed decisions on what to buy.

## Purchase the equipment you need



Touring Cars and F1 Cars come in kit form and typically include the main chassis and suspension components along with a detailed assembly manual. There are lots to choose from and most of the major manufacturers make a competitive car. By using quality parts and testing, along with each manufacturer having a team driver programme, pretty much all of the leading brand cars would be winners in the right hands. It usually comes down to how you build, setup and drive the car rather than one chassis having an advantage over another. Choose a car that seems to be popular and has good backup for spare parts and advice. In addition to a chassis kit you'll need a full set of electrics including radio gear. It is typically a good idea to choose a radio system which has adjustable features such as steering end points and throttle & brake curve. Whilst a little pricier these tend to be of better quality, have a faster response and will help you get the most out of your car.

Electric Touring Cars and F1 Cars use 2S Lithium Polymer (or LiPo) batteries. These have a nominal voltage of 7.4V or 7.6V and range in capacity from around 4000mAh to 8400mAh. There is a list of homologated packs that are legal for use at BRCA national events on the BRCA website.

There are 3 classes of Touring Car raced in our 4wd national series. All 3 classes run brushless motors and compatible electronic speed controllers or speedo's as they are known. 2 classes are raced in our 2wd national series.

Super Touring (4wd) is the fastest and our 'blue ribbon' class. In Super Touring motor and speedo settings are open, meaning you can run whatever you like provided it is on the homologation lists.

The Pro Stock (4wd) class runs 13.5 turn motors with open speedo settings, whilst stock (4wd) runs 17.5 turn motors with fixed or 'blinky' speedo settings.

F1 (2wd) is our 1.10th scale version of the hugely popular global motorsport class. The F1s run 21.5 turn motors with fixed or 'blinky' speedo settings.

FWD (2wd) cars are hatchback scale versions of BTCC cars and run 17.5 turn control motors and controlled RPM blinky ESCs.

'Open' and 'blinky' relate to dynamic timing that the speed controller can use to increase the performance of the motor. Blinky has no dynamic timing and a flashing LED on the speedo indicates this setting is being used, hence the name 'blinky'. Remember; the lower the number of turns the more powerful the motor. As with batteries, homologation lists of approved equipment can be found on the BRCA website.

What good is a car if it's got no wheels? Both the Touring Cars and F1 Cars use rubber tyres, and a control tyre is selected at the start of the season which is then used at all of our events. This means there is no confusion about which tyre to use and gives everyone a level playing field. There are a range of bodyshells available for both the Touring Cars and F1 Cars all of which come clear and unpainted, meaning you get to choose your colour scheme and design. As per the Motor and battery list, there is also a homologation list for bodyshells on the BRCA website. Each model gives differing handling characteristics, so it is best to ask around and see what works best at your local track.

Finally, you'll need equipment to charge your batteries and a set of tools to use when working on your car. As with the other items above, seek advice online or at your local shop or club regarding what to buy.

## Build your car and go racing

The most important thing here is to TAKE YOUR TIME. All cars are very sensitive so try to be thorough when you build and prepare the car. Time spent in properly preparing your car will pay dividends in the long term and you'll be able to get the most out of your chassis. There's a wealth of information available online and the drivers at your local club will be happy to help too; just ask them for advice on what they do.

You will find setup sheets online to assist in setting up your car. By this time, you should already have found your nearest club and have a good idea of how they operate. Take things slow and steady to begin with; concentrate on driving smoothly and consistently and the speed will build as you get more comfortable.

## Take your racing to the next level

Once you've been racing at club level for a while you may find that you want to go and experience different tracks and meet new people. This is one of the great things about RC Car Racing is there's a vast network of people, clubs, and events to engage with, whatever your level of ability and experience.

It may seem daunting, but one of the best ways to learn about Touring Car or F1 racing is to enter a national championship event. These events are open to anyone and there is sure to be someone else competing at your level. What's more, you'll have direct access to help and advice from the country's fastest and most experienced drivers. It is probable that you'll learn more in a single national weekend than during several months of club racing as in many cases you'll be able to pick up and understand the dos and don'ts from other people instead of having to figure them out for yourself.

For more information about national and regional competitions, visit the BRCA website.

Each year clubs from all over the country are invited to submit applications to host a round of our national championship. From there the drivers who competed in the series the previous year, get to vote on which tracks host the National and Clubman's National rounds. The competition Secretary then liaises with the host tracks and formulates a calendar for both series.

Each round of the national series is an individual standalone event meaning you can enter as little as a single day's racing if you've never tried one of our competitions before. All entry is done via the BRCA website.

- Go to [www.britishradiocarassociation.co.uk/10thEC-events](http://www.britishradiocarassociation.co.uk/10thEC-events)
- As you scroll down you will see a list of the available events.
- Simply click on the Enter button next to the event you wish to enter to add this to your cart.
- You can then either click checkout to go on and complete your entry or add more events to add more entries to your cart.
- You will either be required to login to the website or if you've never previously registered then complete the required registration details.
- You will then be redirected to a PayPal payment page to complete your entry.

Over the next series of pages, you will find details of the events for the current season.

01323 442575      [www.zen-racing.co.uk](http://www.zen-racing.co.uk)

Unit 1, European House, Hackhurst Lane, Hailsham, East Sussex, BN27 4BW      *The Aggregation of Marginal Gains*

## 4WD NATIONALS

A competitive series of one-day events, racing at outdoor tarmac tracks across the UK. While this is the top level of Touring Car racing in the UK, the Nationals are open to everyone.

### General rules

Rush SPC32M R2 pre-glued slick tyres, Max 2 sets per meeting for Mod and 13.5, 1 set for 17.5. Shimizu XG-RAIN pre-glued wet tyres, Max 1 set per meeting.

Maximum LiPo voltage of 8.40v. LiPos must be balance-charged in closed LiPo sacks, at no more than the maximum charge rate advised by the manufacturer. Motors, LiPos and bodyshells must be on the relevant BRCA approved lists.

### Meeting format

Optional practice on Saturday in heats. Free practice Sunday morning in heats. 3 rounds of Round-By-Round qualifying. Your best 2 round positions are added together to give your overall qualifying position. 3 rounds of finals. Your best 2 round positions are added together to give your overall final position, with trophies for the top 3 overall in each final, plus TQ and top juniors.

### Championship points

The winner of each A-final will receive 150 points, second 149, third 148 and so on down to last place at the event. This gives 6 scores in total, with 4 to count (i.e., you must do at least 4 meetings to qualify for championship trophies). Entry details £21 entry fee. Additional £10 for Saturday practice (paid in cash to the club). Half price entry for all juniors! (16 or under on the meeting date). Please use the Under-13 or Under-17 button when entering to receive your discount. Juniors must book each event separately to receive a discount for each one.

### Entry details

£21 entry fee. Additional £10 for Saturday practice (paid in cash to the club). Half price entry for all juniors! (16 or under on the meeting date). Please use the Under-13 or Under-17 button when entering to receive your discount. Juniors must book each event separately to receive a discount for each one.



#### MAY

14th National Round 1 Stafford

#### JUNE

11th National Round 2 Eastbourne

#### JULY

16th National Round 3 Halifax

#### AUGUST

20th National Round 4 Cotswolds

#### SEPTEMBER

17th National Round 5 Colchester

### 17.5 Blinky Touring

17.5T BRCA approved motors  
'Blinky' ESCs (no boost or turbo).  
Rush SPC32M R2 slick tyres.  
Shimizu XG-RAIN wet tyres.  
Max 1 sets of each per meeting.

### 13.5 Blinky Stock Touring

13.5T BRCA approved motors  
'Blinky' ESCs (no boost or turbo)  
Rush SPC32M R2 slick tyres.  
Shimizu XG-RAIN wet tyres.  
Max 2 sets of slicks and 1 set of wets per meeting.

### Modified Touring

Any BRCA approved motor  
'Open' ESCs  
(boost and turbo are allowed)  
Rush SPC32M R2 slick tyres.  
Shimizu XG-RAIN wet tyres.  
Max 2 sets of slicks and 1 set of wets per meeting.

Please note: These are just a summary of the rules. Please see the appropriate sections in the BRCA handbook for full technical and sporting rules.



## 2WD NATIONALS

A competitive series of one-day events, racing at outdoor tarmac tracks across the UK. While this is the top level of Touring Car racing in the UK, the Nationals are open to everyone.

### General rules

FWD will use RI-MB-BRCA pre-glued cut slick tyres. Max 1 set per meeting. Shimizu XG-RAIN pre-glued wet tyres. Max 1 set per meeting. Control motor and RPM limit ESC will be used. LiPos and FWD touring car bodies must all be on the relevant BRCA approved lists.

F1 will use HRF1ABRCA dry tyres, max 1 set per meeting. Motors, LiPos, 'blinky' ESCs and F1 bodies must all be on the relevant BRCA approved lists.

Maximum LiPo voltage of 8.40v. LiPos must be balance-charged in closed LiPo sacks, at no more than the maximum charge rate advised by the manufacturer.

### Meeting format

Optional practice on Saturday in heats. Free practice Sunday morning in heats. 3 rounds of Round-By-Round qualifying. Your best 2 round positions are added together to give your overall qualifying position. 3 rounds of finals. Your best 2 round positions are added together to give your overall final position, with trophies for the top 3 overall in each final, plus TQ and top juniors.

### Championship points

The winner of each A-final will receive 150 points, second 149, third 148 and so on down to last place at the event. This gives 6 scores in total, with 4 to count (i.e., you must do at least 4 meetings to qualify for championship trophies). Entry details £21 entry fee. Additional £10 for Saturday practice (paid in cash to the club). Half price entry for all juniors! (16 or under on the meeting date). Please use the Under-13 or Under-17 button when entering to receive your discount. Juniors must book each event separately to receive a discount for each one.

### Entry details

£21 entry fee. Additional £10 for Saturday practice (paid in cash to the club). Half price entry for all juniors! (16 or under on the meeting date). Please use the Under-13 or Under-17 button when entering to receive your discount. Juniors must book each event separately to receive a discount for each one.



#### APRIL

23rd National Round 1 Adur

#### MAY

28th National Round 2 West London

#### JULY

2nd National Round 3 Mendip

30th National Round 4 Bedworth

#### SEPTEMBER

3rd National Round 5 Aldershot

24th National Round 6 Broxtowe

### Formula One

21.5T BRCA approved motors  
'Blinky' ESCs (no boost or turbo)

Slick Tyre - Slick Tyre -  
Hot Race - HRF1ABRCA,  
max 1 set per meeting.

Wet tyre - Sweep -  
Front: SWF1FV5G-MPG-BRCA,  
Rear: SW-F1RV5G-28RPG-BRCA,  
max 1 set per meeting.

### FWD

HW30408011  
17.5T Fixed Timing motor  
HW30112003 RPM limited ESC  
Ride RI-MB-BRCA cut-slick tyres.  
Shimizu XG-RAIN wet tyres.  
Max 1 sets of each per meeting.

Please note: These are just a summary of the rules. Please see the appropriate sections in the BRCA handbook for full technical and sporting rules.

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# Forest Raceway

Home of the Forest Of Dean RC Car club

Mitcheldean, Gloucestershire,  
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# 10<sup>TH</sup> SCALE ELECTRIC CIRCUIT GENERAL RULES

## 1. DEFINITION OF TERMS USED

- 1.1 'Committee' - This is the BRCA 1/10th Electric Circuit Section Committee as established by the BRCA Constitution. Committee decisions require a quorum consisting of at least 40% of the total committee membership, unless otherwise specified.
- 1.2 'Sanctioned Event' – This is any race event for which the Committee has approved the date, venue and organiser. Sanctioned Events will abide by 1/10th Electric Circuit Section Rules at all times. Only Sanctioned events may use the letters BRCA in their title.
- 1.3 'Organiser' – This is the club or organization that hosts a Sanctioned Event.
- 1.4 'National' – This is a Sanctioned Event, the results of which count towards the BRCA 1/10th Electric Circuit National Championships.
- 1.5 'Race' - This can be any Practice Heat, Qualifying Heat or Final.
- 1.6 'Commercially Available' - Any item being accessible for purchase by anyone and therefore must be or have been available in UK retail outlets in reasonable volume at any one time.
- 1.7 'Track area' – This is the only area in which cars may be raced. It will be defined by barriers designed to contain cars in the event of an accident. Only Competitors, their mechanics and Officials will be allowed to enter this area.
- 1.8 'Blinky Mode' - This is any speed controller approved by the BRCA Electric Board that satisfies the Zero Boost specification.

## 2. SANCTIONED EVENTS

- 2.1 4WD 10th Circuit National
  - 2.1.1 Classes:
    - 4wd 'Modified Touring' for Open Modified brushless motors with 2S LiPo battery and Open ESC.
    - 4wd '13.5 Blinky Touring' for 13.5t brushless motors with 2S LiPo battery and Blinky ESC.
    - 4wd '17.5 Blinky Touring' for 17.5t brushless motors with 2S LiPo battery and Blinky ESC.
  - 2.1.2 A maximum of Six, one-day meetings.
  - 2.1.3 The winner of each championship will be crowned the BRCA [class] National Champion [year].
  - 2.1.4 For the first 7 days of booking-in, only the following drivers will be able to enter: Those who completed the counting number of rounds in the previous seasons BRCA championship Modified, 13.5 Blinky or 17.5 Blinky.
- 2.2 2WD 10th Circuit National
  - 2.2.1 Classes:
    - 2wd 'FWD' for 17.5t brushless motors with 2S LiPo battery and Blinky ESC as detailed in section 17.
    - 2wd 'F1' for 21.5t brushless motors with 2S LiPo battery and Blinky ESC.
  - 2.2.2 A maximum of Six, one-day meetings.
  - 2.2.3 The winner of each championship will be crowned the BRCA [class] National Champion [year]
  - 2.2.4 For the first 7 days of booking-in, only the following drivers will be able to enter: Those who completed the counting number of rounds in the previous seasons BRCA championship FWD or F1.
- 2.3 National Championship Rules
  - 2.3.1 Venues will be selected by committee for both 4WD 10th Circuit National and 2WD 10th Circuit National Championships.
  - 2.3.2 Event Entry: Each meeting will have a maximum of 11 heats. Entry fee £21 per meeting (£17 going to the host club, the remainder going to section funds). The host venue may charge up to £10 per driver for Saturday practice. Entries will open at noon on the last Saturday in February.
  - 2.3.3 Event Schedule:
    - Monday Friday:: Track closed to meeting entrants, apart from any race meeting organised by the host club that is publicised and open to all entrants.
    - Saturday: Practice (attendance optional).
    - Sunday: 3 Qualifying rounds, 3 Finals rounds. Best 2 round scores to count.
  - 2.3.4 Tyre vote: All drivers who competed in a scoring meeting will be eligible to vote. The tyre vote will be voted on from an approved list compiled by the section committee. A single approved tyre assembly and a single approved control treaded tyre assembly for the wet, both of pre-built and glued construction, will be chosen by an online vote of competitors who completed the counting number of championship rounds in the previous season. In the event that more than two tyres are submitted, and no tyre receives a majority of votes, a second vote will be held featuring the two tyres that received the most votes. If this second vote is a tie then the committee has the ruling vote.
  - 2.3.5 Tyre allocation.
    - 4WD Touring car entrants are allowed to use the following number of tyres per meeting:
      - Modified/13.5 Blinky: Two sets of slick tyres.
      - Modified/13.5 Blinky: One set of treaded tyres (wets).

- 17.5 Blinky: One set of slick tyres.
  - 17.5 Blinky: One set of treaded tyres (wets).
- 2WD FWD entrants are allowed to use the following number of tyres per meeting:
- One set of semi slick tyres.
  - One set of treaded tyres (wets).
- 2WD F1 entrants are allowed to use the following number of tyres per meeting:
- One set of slick tyres.
  - One set of treaded tyres (wets).
- 2.3.6 Qualifying: Round by round qualifying will be used. Each competitor's two best scores will be counted.
- 2.3.7 Finals: Overall final results will be determined by adding the best two final scores together. Ties will be resolved according to 5.2.2.
- 2.3.8 The championships will run between 1st April and 30th September.
- 2.4 Event Entry: Competitors entering any BRCA Sanctioned Event must be a BRCA member. Membership cards or proof of membership may be required to be shown.
- 2.5 Once booking in closes the number of finals is set, e.g., 55 rounded up to 60 = 6 finals for that class.
- 2.6 A competitor may only enter one 4WD Touring Car class per meeting. A competitor can enter both 2WD FWD and 2WD F1 on the same day.
- 2.7 All entry fees must be paid in advance and entries will not be accepted until payment is received. Late entries will be accepted after the normal closing date but the qualifying heat which late entry competitors are placed into is at the discretion of the Race Director. Any late entrant must be able to prove they have not driven on the track in the 7 days prior to the meeting as per 3.3.3.
- 2.8 Junior drivers under the age of 17 on the date of the race they attend shall be entitled to a 50% reduction on the full entry fee for that race meeting.
- 2.9 Entry cancellations must be notified directly to the Competition Secretary. Providing written notice is received at least fourteen days prior to the event, the full entry fee will be provided. Any special entry conditions may be excluded from refunds, see terms on entry to events.
- 2.10 Any driver not turning up at an event and not notifying the Committee in advance will have their entry withdrawn from the next event they are booked into, without refund. The entry may be reinstated on receipt of a satisfactory explanation of the mitigating circumstances - the committee must receive this information at least seven days before the next event.
- 2.11 All drivers must confirm their arrival to the race director before the drivers briefing. Once qualifying begins, competitors shall stay in the race computer even if they decide not to race.
- 2.12 There will be a trophy presentation at the end of each event. The host club will provide all trophies, which must include:
- Top 3 in each final.
  - TQ in each class.
  - Top 3 juniors in each age category in each class, determined by their final position.
  - Formulas for FWD class.
- 2.13 The section will fund end of season Championship trophies.
- 2.14 Track Requirements: Track width must be at least 2.4m at the narrowest point. The start line and timing loop must be identified on the track. There will be a designated 'pull-off' area.
- 2.15 Applications to host a Sanctioned Event must be received by the date published by the section committee. Applications must include full details of the venue, including pitting area, toilet facilities, rostrum design, race control facilities and policy for camping/caravans. Details of standards required can be obtained from the Section Secretary.

### 3. QUALIFYING SYSTEMS

- 3.1 The maximum number of cars per qualifying heat shall be 10.
- 3.2 The start of each qualifying heat will use a 1 second stagger between cars, with the order being determined numerically for round 1 and then by FTQ in subsequent rounds. Cars not at the start line once the 10 second countdown has begun, or not setting off when their number is called, will start in numerical order when all the other cars have left. If for any reason a car does not start, then the race time for that car will begin automatically when one of the other cars has completed its first timed lap.
- 3.3 Round by Round qualifying awards points for each competitor's position in each qualifying round individually. The highest qualifying position in each round will score one point; second place will score two points, third place three points and so on.
- 3.3.1 In the event of a tie-on total points, the competitor with the BEST round score will be awarded the position (using all counting rounds until the tie is broken). If they are still tied, then (from any of their counting rounds only) the fastest time will be used. Example: A score set [1,3] beats a [2,2]. If both competitors have a [2,2] but competitor A has a fastest time of 19- 301.11 and competitor B's fastest is 19- 304.55, then competitor A will win the tie break.
- 3.4 During qualifying, if a competitor has their race time adjusted for any reason, then the round positions will be recalculated using the new race times.

## 4. FINAL SYSTEMS

- 4.1.1 Finals will consist of 10 cars except for the lowest final which may run less. If the lowest final contains just 1 car, that car may be moved to car 11 in the final above, at the race director's discretion.
- 4.1.2 Drivers with a higher grid position may claim their preferred space on the rostrum. It is recommended drivers enter the rostrum in qualifying order.
- 4.1.3 Finals are to be run in the same order as qualifying rounds.
- 4.1.4 In the event of cars arriving at the grid once the 30 second countdown has begun, the countdown should be stopped, offending cars placed at the back of the grid and the countdown restarted from the 10 second mark.
- 4.1.5 Finals will use a grid start of two rows of cars spaced at 3m intervals on a staggered grid. Where available, the top qualifier in each final may choose their preferred side of the grid from which to start.
- 4.1.6 Cars must start behind their grid line and with at least one front wheel within the confines of the width of the box.
- 4.1.7 An audible signal will start each final.
- 4.2 Multi-Leg Finals:
- 4.2.1 The winner of each final gets 1 point; the second gets 2 points and so on. Cars that do not start or are disqualified will be awarded last place in their final.
- 4.2.2 In the event of a tie-on total points the competitor with the lowest counting final round scores will be awarded the position. If they are still tied, then the competitor with the most laps completed in the fastest time from any of their counting final rounds will win the tie. Example: A [1,3] beats a [2,2]. If both have a [1,2] then the best laps/ time from counting final rounds will be used to break the tie.

## 5. CHAMPIONSHIP POINTS

- 5.1 4WD 10th Circuit National and 2WD 10th Circuit National
- 5.1.1 The winner of each A-final will receive 150 points, second 149, third 148 and so on down to last place at the event.
- 5.1.2 All events declared by the committee as counting towards the championship will be used in the calculation of championship scores. A competitor may consider their best scores from 50% of the events declared, plus one, with halves rounded down.
- 5.1.3 In the event of a points tie in the Championship, only results from the competitors counting championship rounds will be used to break the tie. The following order to break the tie will be used until a decider is found:
- The highest round score will be considered (and so on down if required) until one driver has a higher score than the other (150 beats 149 etc).
  - The qualifying positions will be compared until one driver has a higher grid position.
  - The number of first, second, third etc round-by-round scores (the counting round scores) will be compared until one competitor has a better round score. If this fails to break the tie, the position will be shared.
- 5.1.4 Two junior championships will be run per class:
- Under 13 - Under 13 years of age on or before 1st October of the championship year.
  - Under 17 - Under 17 years of age on or before 1st October of the championship year.

## 6. INTERNATIONAL CHAMPIONSHIPS

- 6.1 Entry is open to all members. If there are more entries than available places, preference will be given based on national championship results for the class.
- 6.2 Drivers who request a place must pay the entry fee by the announced deadline. Any driver not paying the fee will be removed from section events until the fee is paid.

## 7. RACE OFFICIALS

- 7.1 A Committee member will be appointed as the BRCA Steward for the meeting; the Steward will have overall authority regarding compliance to the rules and regulations and may be called upon to resolve any dispute.
- 7.2 A Race Director or Timekeeper must be present at race control throughout the timed heats and finals at national events. Unless otherwise stated the race director will also act as referee.
- 7.3 A Technical Officer who will check that technical and eligibility rules are upheld will be available at national events.
- 7.4 A Timekeeper will check that the timing equipment is operational and that all races have started and finished in accordance with the rules.
- 7.5 Referees may be used for qualifying heats and finals. Referees will be selected by the BRCA committee.
- 7.6 The Referees will monitor driving standards and competitor behaviour.
- 7.7 A Referee's decision can be reviewed by the committee. The committee's decision is final and may not be protested.

## 8. RACE PROCEDURES

- 8.1 Finals and grid positions are to be determined by a driver's final qualifying position.
- 8.2 Competitors who have raced in the National championship in the past will be graded on their previous % championship grading assuming that they are racing in the same class. Drivers who change class will have a 15% decrease applied to their % if changing class. New drivers to the championship will be graded at 1% when they enter their first meeting in the championship (it is at the committee's discretion to waive this in exceptional circumstances). If the driver has not raced in the championship for 3 seasons then they will be classed as a new driver. Any new class created will have the drivers grading approximated for the first meeting.
- 8.2.1 Driver grading will be based on championship position counting half plus one (with halves rounded down) of the completed rounds.
- 8.3 The Race duration:
- 4WD 10th Circuit National will be five minutes, plus last lap allowance.
  - 2WD 10th Circuit National will be five minutes, plus last lap allowance.
- 8.4 In severe weather conditions the Race Director is responsible to ensure that the track is in a suitable condition to race on.
- 8.5 After each race, competitors will assume assigned marshalling positions for the following race. No other person is allowed within the track area (except officials) while the race is in progress. The race director can ask for marshalls to not directly marshal after their heat and marshal the subsequent race (eg. race 1 marshal race 3).
- 8.6 Cars must be presented to scrutineering as stipulated in the drivers briefing. If not stipulated, then cars must be presented to scrutineering immediately after the race has finished.
- 8.7 An AMB/MyLaps system is to be used for timing and results should be determined based upon the accuracy specified in the club handbook (recommended to be the same as published by the timing equipment manufacturer).
- 8.7.1 Only Personal Transponders supplied by each competitor will be used to record laps.
- 8.7.2 At all sanctioned events it is the driver's responsibility to securely fit the lap recording equipment to their car before the start of any race.
- 8.7.3 Competitors using a personal transponder are responsible for ensuring that such equipment functions with adequate signal strength. If this equipment malfunctions, competitors may have their laps recorded manually providing that:
- A) The transponder starts the race clock for that race.
  - A) An official is satisfied that the car was circulating during any missed laps.
  - C) If the personal transponder does not record a finishing time, then final lap(s) can be awarded at maximum lap time for the driver in that race, until the total race time has been reached.
- 8.8 During a race, the only people who can pass any information to a competitor are the Race Director (or their assistant), Referee or commentator. Receiving information from an assistant will result in a loss of that heat/final time. Competitors may pass on information to each other on the rostrum regarding cars that have stopped on the circuit.
- 8.9 Only the Race Director, Timekeeper or a Referee may call for a restart of a race within the first lap of the leading car. If a race is abandoned after the first lap of the leading car then time must be allowed for recharging.
- 8.10 At the race end, when the cars have passed the finish line, and the finish signal has been given, the cars must pull off into the designated pull-off area, so as not to interfere with any other competitors. Failure to comply will result in a penalty.
- 8.11 If a race is abandoned, only cars running at the time the original race was aborted will be allowed to restart.
- 8.12 Meetings can only be abandoned by a majority decision of the BRCA Committee members present.
- 8.13 No active mobile phones are allowed on the drivers' rostrum nor are they allowed to be used within the track area.
- 8.14 Any race or heat stopped due to race equipment malfunction or an Official's error will be re-run after a suitable delay.
- 8.15 Any race notified by race control as being delayed from the published timetable to either qualifying or finals will receive a minimum of 15 minute's notice prior to assembling on the grid.
- 8.16 BRCA Section to supply scrutineering aids for all events.

## 9. MARSHALLING

- 9.1 Competitors will be expected to marshal the race after their own, with competitors in the last race of a round expected to marshal the first race of that round. The race director can ask for marshalls to not directly marshal after their heat and marshal the subsequent race (eg. race 1 marshal race 3).
- 9.2 Penalties will be applied for late marshalling or failure to marshal.
- 9.2.1 Failure to or late marshalling is clarified as being any marshal not at the correct position when the first car leaves the start line or final grid (unless the marshal is under instruction from a race official)

- 9.3 Drivers are allowed to provide a competent substitute marshal, but the Race Director must be notified and approve of any change first. Substitute marshalls must be current BRCA members. The driver will be subject to any penalties incurred by their substitute marshal.
- 9.4 Marshalls must have their hands free at all times.
- 9.5 Marshalls must wear safe and sensible footwear that will not become detached when performing marshalling duties. (Open toe shoes or sandals are not acceptable).
- 9.6 It is not mandatory to marshal practice sessions.
- 9.7 Marshall points (posts) are carefully positioned by the event organisers, if any competitor feels that the marshal points are unsatisfactory, they must inform Race control.

## 10. PENALTIES

- 10.1 Referees are empowered to give driving and marshalling penalties. All other penalties will be given by the Race Director and/or BRCA Steward.
- 10.2 Jump Starts in Finals: After the 10 sec. count-down to start signal has started, any car moving ahead of the Grid line before the official start signal will be penalised with a ten second penalty applied after the race has finished.
- 10.2.1 If there are multiple 'jump starts' at the start of a Final, the referee can call for a restart and may decide not to issue any penalties arising from the original start.
- 10.3 Driving Standards; for a first offence the Referee will normally issue a clear warning. The Referee will clearly announce any penalty and record it on the published results for that heat/final. At the Referees' discretion, penalties can be incurred for bad driving and/or corner cutting with any one of the following, depending on the severity of the offence:
- Official Warning
  - Stop-Go penalty
  - 5 or 10 second penalty
  - 1 lap penalty
  - Disqualification.
- 10.3.1 A driving penalty of one lap deduction may be awarded if any car continues to circulate the track after having received the finish signal, and especially so if that car in any way interferes with a competitor still racing.
- 10.3.2 The Stop-Go penalty area must be well defined and in a position that is practical to operate.
- 10.4 Failure to or late marshalling in qualifying will receive a penalty of loss of your best points score from qualifying.
- 10.5 Failure to or late marshalling of a final leg will receive a penalty of loss of your best points score from the finals.
- 10.6 A second marshalling infringement during the same event will result in disqualification and the allocation of zero championship points for that event.
- 10.7 All marshalls must remain on their marshalling points until released by the following marshal or the race director. Failure to do so will be classed as failure to marshal.
- 10.8 Any driver who ignores a warning or penalty issued by the officials will be disqualified from the race.
- 10.9 A driver will be permitted a maximum of three penalties per event, for a 4th infringement they will be disqualified from the event and allocated zero championship points for that event.
- 10.10 The Referees' will not give a penalty for accidental corner cutting provided sufficient time is spent stationary so that no advantage is gained.
- 10.11 Any penalty incurred for any reason will be carried into any subsequent re-run.
- 10.12 Competitors exiting or entering the rostrum platform area while a race is in progress will be disqualified from that race. Race 'in progress' is clarified as from: - 'when the first car is started (all cars in Finals)' to 'the race is declared over'. Competitors must remain in their original position until the race is declared over. If a competitor decides for whatever reason to cease driving, they may step back.
- 10.13 Any failure to present the car to scrutineering, before/after the race in which the car has raced, or any failure to meet the technical and dimensional requirements of these rules before or after a race will result in the loss of that race time.
- 10.14 Where post-race scrutineering is used as a method to mark the allocated tyre allowance for the meeting, and the competitor registers on the timing computer without presenting the car for post-race scrutineering, it will be assumed that the competitor has used one new set of tyres.
- 10.15 Any competitor found to be using illegal equipment may at the Race Director's discretion be disqualified from the meeting and subject to appearing before the Committee, may be disqualified from participating in any other BRCA sanctioned event/s.
- 10.16 A non-performance related failure in scrutineering (e.g no grill or lights) will result in a warning for the first infringement.

## 11. PROTEST PROCEDURES

- 11.1 A referee's decision (or non-decision) is final and may not be protested.
- 11.2 Protests must be received by the Race Steward within 20 minutes of the end of the affected race; they must be on the official protest form (available from race control) with a fee of £25

which will be refunded if the protest is upheld. The Stewards decision is final.

- 11.3 National events will have a Drivers Association Representative appointed, who will advise and (if required) represent any driver who has cause to query any official decisions or procedures.
- 11.4 Any queries concerning official lap times and scores will be addressed to the BRCA Steward. A protest fee is not required. Any adjustments will be ratified with the Race Director and their decision in these matters is final.

## 12. CURTAILMENT OF EVENTS

- 12.1 In the event of any of the rules in this section being invoked these rules shall take precedent over any other rules which they may contradict.
- 12.2 Non-national Sanctioned events may be abandoned by the Race Director in consultation with the Organisers. Results from any round can only be used if all races for that class in the respective round have been completed.
- 12.3 National championship events can only be abandoned by a majority vote of the Committee members present after consultation with the Race Director. In the event of a National meeting being abandoned the following will be applied to determine the meeting results:
- After 1 round of qualification the meeting results would be declared on qualification positions after this round.
  - After 2 rounds of qualification the meeting results would be declared using round by round points with 1 round counting.
  - After 3 or 4 rounds of qualification the meeting results would be declared using round by round points with 2 rounds counting.
  - After 1 round of finals, then the points will be awarded as normal for this round of finals, and a second set of scores for finals will be awarded based on the qualification positions. The final positions will be determined using both of these scores with tie breaks resolved in the normal method for finals.

In the event of the meeting being abandoned mid way through a round of qualification, the points for that entire round will be scrapped and results declared from the previous completed round as described above. If the meeting is abandoned part way through a round of finals, points will be awarded to finals that have been completed with any subsequent finals not run in that round will have points awarded as per qualification results.

- 12.4 Events abandoned when at least one qualifying round has not yet been completed will not be rescheduled and the total number of counting championship rounds will be reduced by one.

## 13. GENERAL RULES

It is each competitor's responsibility to ensure that their car meets all technical and eligibility requirements.

- 13.1 The Section Committee are empowered to legislate at any time against any new equipment that in the opinion of the committee detracts from the essential skill of the driver controlling the car during racing.
- 13.2 No car shall be constructed or presented for racing so as to be dangerous to persons or cause damage to competitor's cars or the track surface.
- 13.3 The body and chassis must be securely joined at all times when the car is on the track.
- 13.4 All cars must have a minimum of one identifying numbers to the front windscreen.
- 13.5 Only one drive motor is allowed per car.
- 13.6 Tyre treatments that can coat or damage the racing surface are specifically banned. A single nominated tyre treatment will be used at each event. The nominated treatment will be published at least 4 weeks prior to each event. All classes at an event will use the same nominated treatment. Tyre treatment will be supplied and purchased by the section, and made available in designated treatment area(s). Tyre treatment may only be applied in the designated area(s). Outside of the designated area(s), only CA (super) glue, glue activators and/or brake cleaner equivalents may be applied to the tyres.
- 13.7 The use of tyre treatments is at the race organiser's discretion. Notification of non-allowable tyre treatments must appear on the entry forms.
- 13.8 The use of any oil of wintergreen-based product (i.e. smells of 'Deep Heat') is not allowed.
- 13.9 No tyre treatments are allowed in wet conditions.
- 13.10 The use of tyre warmers is allowed but they may not be brought into the defined track area on the car.
- 13.11 The use of multiple-speed transmissions (gearboxes) is not allowed.
- 13.12 Traction control is not allowed.
- 13.13 Active suspension is not allowed.
- 13.14 Gyroscopes are not allowed.
- 13.15 Slipper clutches are not allowed.
- 13.16 Suspension movement sensors are not allowed.
- 13.17 Wheel speed sensors are not allowed.
- 13.18 Tyre slip sensors are not allowed.

13.19 Blinky ESCs must not be fitted with any device (active or inactive) that allows settings to be changed without physical contact being made with the ESC.

#### 14. TECHNICAL RULES - 4WD TOURING CARS

- 14.1 No holes or slots are allowed on the body or wing, except for body post, aerial and transponder holes.
- 14.2 Windows are to be clear or tinted and must be clearly defined as windows.
- 14.3 The main chassis cannot be changed during a race.
- 14.4 Under body/chassis aerodynamic aids of any nature are not allowed. Smooth Lexan under trays may be fitted to waterproof the cars. Items to aid strength (including repairs), stiffness of the shell, or preventing the shell from becoming "tucked" are allowed.
- 14.5 Details of all front and rear lights plus the main front grill must be clearly contrasted from the surrounding paintwork.
- 14.6 All bodyshell features (front splitter / bumpers) from the original moulding must remain on the shell.
- 14.7 Dimensions: Wheelbase: 250 to 270mm, Width (without body): 170 to 190mm
- 14.7.1 Maximum wing size including endplates: 190w x 40d x 20h (mm) boxed dimension. Wings (excluding endplates) are to be of single moulded polycarbonate construction (no flat-packs/bend your own) and to be mounted directly to the body (no spacer between shell and wing), on the mounts provided at the back of the shell.
- 14.8 The minimum car weight, including personal transponders is 1320g.
- 14.9 Control Tyres:
- 14.9.1 Tyres will be easily identifiable with a permanent external marking that can be used as a reference. This marking will include the manufacturer's name on the sidewall, plus the tyre compound and/or identification name.
- 14.10 Any Competitor being suspected of not running the correct tyre assembly will have their tyres destructively checked at the end of the event. If the tyres are found legal, the competitor will have the full set replaced by the section.
- 14.11 Any competitor found using a tyre assembly other than that approved will be disqualified from that event.
- 14.12 All wheels/tyres must be marked, the process will be advised at each meeting by the appropriate officials. Markings must be clearly visible.
- 14.13 Bodyshells: bodyshells must be approved by the BRCA 1:10 Electric Circuit Chief Scrutineer. Homologation list to be published on the BRCA website.  
To be homologated a bodyshell must:
- Meet the current Global Body Spec dimensional requirements (Appendix 1).
  - Have the part number moulded into the front windscreen.
- 14.13.1 A new list will be published on the first of each month. Shells must arrive on or before the 14th of the previous month to be added to the new list. In order to be used at a BRCA sanctioned event, the bodyshell must be present on the homologation list on the Monday before the event.
- 14.13.2 Homologation fee is £15 per shell.
- 14.13.3 Bodyshells have a 5 year homologation period, after which if still in production will have to be resubmitted with a £5 fee.
- 14.13.4 At all times bodyshells must be commercially available.
- 14.13.5 Bodyshells submitted for approval will be kept by the Section for future reference.

#### 15. TECHNICAL RULES - 2WD FORMULA 1

- 15.1 Cars must run a body shell from the BRCA Formula 1 Approved Body List published on the BRCA website. Body shells are voted on by the F1 Sub Committee under the following criteria:
- Must faithfully represent an original FIA Formula 1 car raced between the year 2000 – present day.
  - Deviation from scale form will be considered in areas to clear components and due to manufacturing limitations.
- 15.2 Cars will be painted and detailed to resemble a Formula 1 car. The top air box and side air vents will be detailed in an appropriate colour to a scale size, shape and position. A coloured driver helmet must be present with visor detail.
- 15.3 Wheelbase max 285mm, width max 190mm.
- 15.4 Only 21.5t brushless motors and 2S LiPo batteries are allowed.
- 15.5 Only Blinky Mode ESCs (electronic speed controllers) are allowed.
- 15.6 Minimum car weight 1050g including personal transponder.
- 15.7 Cars must run a commercially available front and rear wing. Wings must not be modified other than the area to which the wing is fixed to the chassis for fitment purposes only.
- 15.8 Turning vanes, barge boards, winglets and diffusers are free but must be to scale.
- 15.9 Grill and air vents may be cut to scale size and position only.
- 15.10 Rear wheel drive only is allowed. The rear axle must be of hex wheel fitment, not have any articulated element and may be fitted with a differential.



- 15.11 Only king pin, coil spring front suspension is allowed. Suspension pick up points must be mounted inside the body.
- 15.12 All radio, electronics & lap counting equipment (excluding aerial) must be housed inside the bodyshell.
- 15.13 The main chassis plate may not protrude from the sides of the bodyshell when viewed from above, except the area forward of the side pods where a protrusion of up to 6mm is permitted.
- 15.14 Control Tyres:
- 15.14.1 Tyres will be easily identifiable with a suitable external marking, as determined by the Formula 1 Sub-Committee, that can be used as a reference.
- 15.14.2 Any competitor being suspected of not running the correct tyre assembly will have their tyres destructively checked at the end of the event. If the tyres are found legal, the competitor will have the full set replaced by the section.
- 15.14.3 Any competitor found using a tyre assembly other than that approved will be disqualified from that event.
- 15.14.4 All wheels/tyres must be marked, the process will be advised at each meeting by the appropriate officials. Markings must be clearly visible.
- 15.15 Rear wings must be fitted to a maximum height of 100mm measured from the bottom of the chassis to the highest point of the rear wing and a maximum rearward extension of 45mm measured from the rear tyre to the rearmost edge of the wing.
- 15.16 Body must be used as designed. No additional material may be added to alter the body unless it is included in the original design. Body must be cut out and used as designed and no additional folding or bending of the body is allowed.

## 16. TECHNICAL RULES – 2WD FWD

The committee are allowed to edit this section of rules under the 2021 AGM mandate provided by the racers present.

- 16.1 Front wheel drive only is allowed.
- 16.2 Bodyshells: bodyshells must be approved by the BRCA 1:10 Electric Circuit Chief Scrutineer. Homologation list to be published on the BRCA website. The section will draw up and work to a set of dimensions to assist with homologation of bodies.  
To be homologated a bodyshell must:
- Must be a realistic representation of an original hatchback car as judged by the Committee
  - Have a front splitter may not protrude more than 10mm from the front most point of the body.
- 16.2.1 A new list will be published on the first of April and will be frozen for the whole season. Shells must arrive on or before the 14th of the previous month to be added to the new list. In order to be used at a BRCA sanctioned event, the bodyshell must be present on the homologation list at the event.
- 16.2.2 Homologation fee is £15 per shell.
- 16.2.3 Bodyshells have a 5 year homologation period, after which if still in production will have to be resubmitted with a £5 fee.
- 16.2.4 At all times bodyshells must be commercially available.
- 16.2.5 Bodyshells submitted for approval will be kept by the Section for future reference.
- 16.3 The main chassis cannot be changed during a race.
- 16.4 The minimum car weight, including personal transponder is 1250g.
- 16.5 Dimensions: Wheelbase: 250-270mm, Width (without body): 170-190mm
- 16.6 Control Tyres:
- 16.6.1 Tyres will be easily identifiable with a permanent external marking that can be used as a reference. This marking will include the manufacturer's name on the sidewall, plus the tyre compound and/or identification name.
- 16.6.2 Any Competitor being suspected of not running the correct tyre assembly will have their tyres destructively checked at the end of the event. If the tyres are found legal, the competitor will have the full set replaced by the section.
- 16.6.3 Any competitor found using a tyre assembly other than that approved will be disqualified from that event.
- 16.6.4 All wheels/tyres must be marked, the process will be advised at each meeting by the appropriate officials. Markings must be clearly visible.
- 16.7 Bodyshells are encouraged to be painted to resemble a FIA WTCR/BTTC/TCR Touring car, or creative use of scale schemes from other car, rally and motorbike racing series.
- 16.8 Windows are to be clear or tinted and must be clearly defined as windows.
- 16.9 Details of all front and rear lights plus the main front grill must be clearly contrasted from the surrounding paintwork.
- 16.10 All bodyshell features (front splitter / bumpers) from the original moulding must remain on the shell and only trimmed to the cut lines on the bodyshell.
- 16.11 Wing must be the one supplied with the shell only. Maximum size 175w x 35d x 15h (mm), excluding end plates. No mixing of parts from different shells. Wings (excluding endplates if supplied) are to be of single moulded polycarbonate construction and to be mounted directly

to the body as supplied, on the mounts provided at the back of the shell. Wings are not required to be measured in scrutineering as wings, that are cut to the cut lines as per the body list as homologated, fit within the dimensions.

- 16.12 No holes or slots are allowed on the body or wing, except for body post, aerial and transponder holes.
- 16.13 Under body/chassis aerodynamic aids of any nature are not allowed. Smooth Lexan under trays may be fitted to waterproof the cars. Items to aid strength (including repairs), stiffness of the shell, or preventing the shell from becoming "tucked" are allowed.
- 16.14 Electronic Speed Control will be controlled and does not need to be on the BRCA approved list. The ESC allowed is the Hobbywing Justock G3 HW30112003.
- 16.14.1 The RPM limit is controlled by the ESC and must be set to 15,000 rpm. This will be randomly checked at any time during the event. Failure of using the correct RPM limit on the ESC when checked will result in all times on the day upto the check removed. A second infringement will result in disqualification from the event.
- 16.14.2 The motor will be controlled and does not need to be on the BRCA approved list. The motor allowed is the Hobbywing XERUN Justock 3650SD G2.1 17.5T Fixed Timing HW30408011. It is allowed to open the motor for cleaning purposes.
- 16.14.3 Gear ratio is open.
- 16.15 Front differential must remain as a differential where one wheel must be able to turn opposite to the other wheel. No solid axles/1-ways are allowed. The use of diff putty/ear plugs/blue tac type substance is not allowed in the differential, only differential oil is allowed. Random checks may be done throughout each event.
- 16.16 Layshaft must remain as fixed in relation to the spur gear. No slipper clutch or 1-way option can be used. No adjustable 1 ways/braking to be used.
- 16.17 Rear wheels must remain independent and not connect to each other via a driveshaft or a differential. They must be able to spin in both directions without affecting any other wheel.

## 17. MOTORS

- 17.0 At Sanctioned events, only motors that are currently homologated and listed by the BRCA Electric Board are allowed. Full technical data of homologated motors is available via the BRCA Electric Board Website.
- 17.1 Open Modified Brushless Motors – any 540 brushless motors approved by the Electric Board are allowed.
- 17.2 13.5t Brushless Motors – only 13.5 turn (or greater) stock spec brushless motors approved by the Electric Board are allowed.
- 17.3 17.5t Brushless Motors – only 17.5 turn (or greater) stock spec brushless motors approved by the Electric Board are allowed. FWD see section 17 for rules.
- 17.4 21.5t Brushless Motors – only 21.5 turn (or greater) stock spec brushless motors approved by the Electric Board are allowed.
- 17.5 Any driver found using an illegal motor will lose all lap scores up to that point. If found using an illegal motor for the second time the driver may be excluded from all sanctioned events for the rest of the season.

## 18. BATTERIES

All cars will be powered only by batteries approved and homologated by the BRCA Electric Board. Full technical data of homologated batteries is available via the BRCA Electric Board Website.

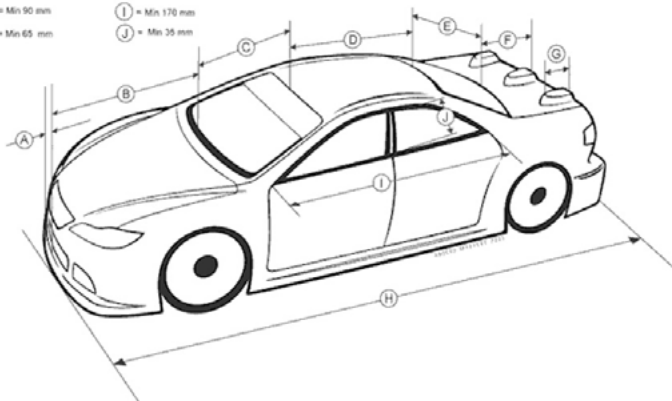
- 18.1 All power packs shall be balance charged on a suitable charger and in a sealed LIPO safe/sack/bag specifically designed for this purpose.
- 18.2 Charge rates shall be within manufacturer's maximum limits as listed on the Electric Board (EB) homologation list. From 2017 new power packs will be submitted by suppliers with a maximum charge limit provided. If the power pack being charged does not have a limit shown on the EB list then the assumption will be the maximum that power pack can be charged at is 1C.
- 18.3 Failure to adhere to charging rules will result in the member being removed from the meeting and the circumstances of their non-compliance being sent to the BRCA executive committee for consideration of the member's BRCA license being revoked. The misuse or abuse of power packs has potentially dangerous consequences and will not be tolerated.
- 18.4 The maximum voltage for a 2S LiPo is to not exceed 8.40 volts at any time.
- 18.5 The heating of LiPo/LiFe cells is not allowed.

## 19. RADIO EQUIPMENT

- 19.1 Only 2.4GHz, 40MHz or 27MHz frequencies are allowed.
- 19.2 Competitors using 27MHz or 40MHz must have a minimum of three frequencies available for competition use.

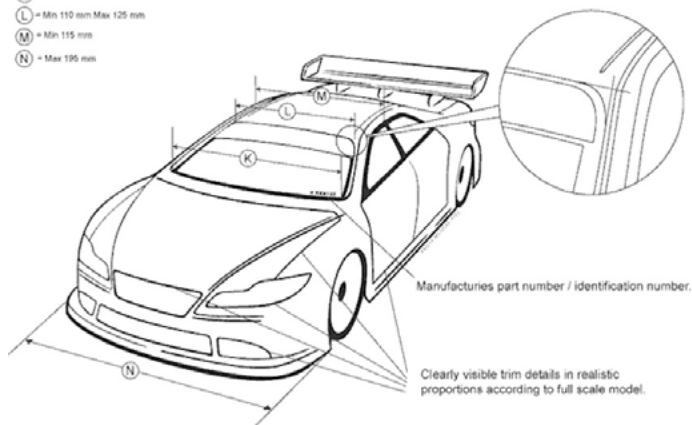
## GLOBAL BODY SPEC ( GBS for Electric Sedans )

- (A) = Max 10 mm
- (B) = Min 105 mm
- (C) = Max 85 mm
- (D) = Min 90 mm
- (E) = Min 65 mm
- (F) = Max 65 mm
- (G) = Max 25 mm ( Max 3 posts )
- (H) = Min 410 mm
- (I) = Min 170 mm
- (J) = Min 35 mm



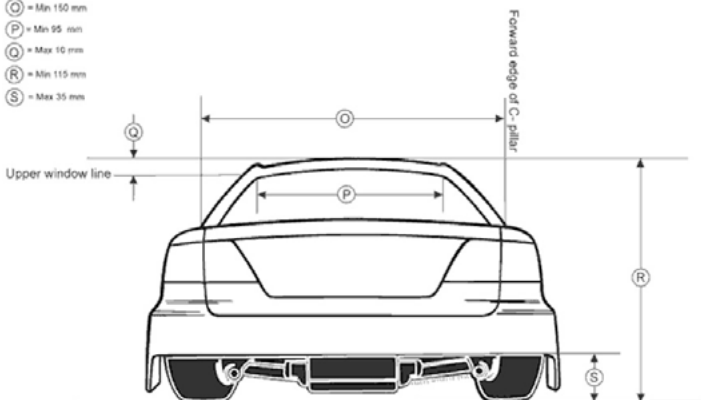
## GLOBAL BODY SPEC ( GBS for Electric Sedans )

- (K) = Min 140 mm Max 155 mm
- (L) = Min 110 mm Max 125 mm
- (M) = Min 115 mm
- (N) = Max 195 mm



## GLOBAL BODY SPEC ( GBS for Electric Sedans )

- (O) = Min 150 mm
- (P) = Min 95 mm
- (Q) = Max 10 mm
- (R) = Min 115 mm
- (S) = Max 35 mm



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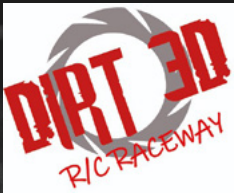
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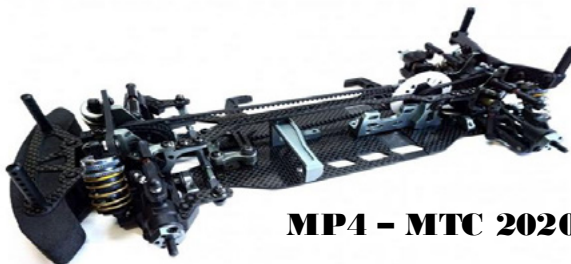
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