



Organisation of Radio Race Car Associations of Queensland Inc.

Technical Rules

EP Tourer

| Details | |
|---------------------|------------------------------------|
| Section | EP Tourer |
| Type | Technical Specification |
| Classes | 1/10 190mm Electric Tourer 10.5 |
| Release Date | February 2014 |

| Version | | |
|----------------|-----------------|--------------------------------------------------|
| 1.0 | | Initial setup from IFMAR Technical Rules |
| | | ORRCA QLD Electric Rules |
| | FEB 2014 | Rules Taken From the Orrca 2014 Update |
| | | Update Tire Rules to include Host Choice of tire |
| | | |
| | | All Changes are Marked in Red |

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TECHNICAL SPECIFICATIONS 190mm Electric Tourer

1.0 General

- 1.1 1/10th Tourers
- 1.2 Three classes are presented for competition, defined by level of motor performance.
 - 1.2.1 10.5 Electric Tourer
- 1.3 The essence of the 1/10 Tourer class is competition between realistic models of full scale saloon/sedan cars raced in Touring Car classes worldwide

2.0 TECHNICAL INSPECTION

- 2.1 All cars must be presented to Technical Inspection for an Initial Inspection before the start of controlled practice.
- 2.2 The purpose of this Initial Inspection is to determine that the car meets these Technical rules for this event.
- 2.3 All bodysHELLS and wings intended to be used by the competitor during the event should be presented at the same time.
- 2.4 After a car passes the initial Technical Inspection, a member of the Technical Inspection team will mark the bodysHELL(s) and wing(s) to assist in future inspection during the meeting.
- 2.5 Any driver failing a pre-race inspection will be given the opportunity to rectify the issues.
- 2.6 During the event cars must be presented to technical inspection prior to entering the race area before each race. Battery voltage and tyre markings will be checked at this point.
- 2.7 Drivers must race the car initially presented to technical inspection during qualifying and finals in accordance with the rules above.
- 2.8 All cars must be presented for technical inspection after each race.
- 2.9 No car will be allowed to enter the track surface without being presented for technical inspection.
- 2.10 All cars must be presented for technical inspection before and at the end of each final.
- 2.11 All motors and batteries to be inspected as necessary during qualifying and mandatory during finals.
- 2.12 All cars in the finals will be impounded at the end of the finals for further technical inspection, such as motors, etc.
- 2.13 Only one car per driver per class is allowed.

3.0 BATTERIES

- 3.1 **Must be on the ROAR, BRCA or IFMAR approved lists and comply with the rules in this section.**
- 3.2 **A maximum of one (1) drive battery may be used per car (ie 2 cell lipo)**
- 3.3 For the purpose of motive power, cooling fans, radio equipment and transponders only in all car classes, and must conform to the battery section rules.
- 3.4 A receiver battery pack must only supply power to radio receivers for its operation and the control only of addition equipment listed: speed controls, servos and transponders for their operation. No other devices will be powered from a receiver pack.
- 3.5 Lithium Polymer Battery: 7.4v (2 (3.7 volt) cells only)
- 3.6 No modifications allowed to the case and/or the battery
- 3.7 Any physical distortion, denting, puncturing or damage to the hard case of the Li-Po battery will deem the Li-Po battery to be ineligible for use at ORRCA QLD events.
- 3.8 Must charge in Li-Po sack or other device (fire mitigation device able to withstand and contain a destructive failure without showing a flame).
- 3.9 Must be used with electronic speed control that has either a inbuilt cut-off or used with an external cut-off device installed (6 volts minimum).
- 3.10 Must be charged using a Li-Po capable charger only at a maximum rate of 2C Full Balance charging with proper leads, this is strongly recommended all times for maximum safety
- 3.11 2C charging is dependent on supporting manufacturer recommendations and documents, where no such records exist; charging will remain limited to a maximum of 1C.
- 3.12 Overcharging of packs is not allowed, chargers must be set no higher than 4.20V per cell, and packs shall not measure above 4.20V per cell **(8.40V maximum)** once fully charged.
- 3.13 Battery cells may not be charged or changed during the race.
- 3.14 **ORRCA QLD takes LiPo safety extremely seriously. Any disregard for the above rules will result in instant disqualification from the event, and a one year suspension from future ORRCA sanctioned events.**

4.0 MOTOR'S and ESC

- 4.1 **All motors must be based on industry standard "05" dimensions.**
- 4.2 **Motors for each class must comply with the following rules**
 - 4.2.1 **10.5 Electric** – Any commercially available 10.5t motor on ROAR, BRCA
- 4.3 **No modifications are allowed to motors**
- 4.4 **Speed controllers for each class must comply with the following rules**
 - 4.4.1 **10.5 Electric** – Any esc running in Zero timing (Blinky) mode, using software versions on ROAR, BRCA, AARCMCC or ORRCA approval list

- 4.5 For 10.5, any driver using an adjustable timing capable esc must prove to technical inspection when requested that the ESC is running in approved Zero timing (Blinky) mode.
- 4.6 10.5 drivers with adjustable timing speed controls will need to have their adjustment tools (lap top/box) with them to prove they are running to zero timing,
- 4.7 Penalty for running advance timing in 10.5 will be disqualification from the event with no warnings given.
- 4.8 **Motor Cooling – Only forced air cooling devices (i.e. Fans) are allowed.**
All Motor's and esc must enter the racing area at ambient temperature. No refrigerant devices, Specialized cooling devices or chemical cooling devices is allowed.

5.0 DRIVERS' AIDS

- 5.1 It is the objective of this rule to ensure that sanctioned Electric Circuit Events be a test of driver skill.
- 5.2 ORRCA QLD seeks to limit the type of driver aids to a minimum to achieve this objective.
- 5.3 Traction control, active suspension and steering control by gyroscopes are not allowed.
- 5.4 Sensors fitted to the car for the purpose of data management, recording or logging etc (eg. measuring suspension movement, wheel speed, motor speed, temperature, lateral forces or tyre slip) whilst the car is in motion are not allowed.
- 5.5 Unless an electronic or mechanical driver aid is listed below, it is not allowed for use in ORRCA QLD sanctioned Event.
- 5.6 The fixed single ratio transmission may not include a mechanical device/s between the drive motor output and the gearbox input for the purpose of controlling torque. (eg 'slipper' clutch/fluid clutch)
- 5.7 A differential may include a mechanism for apportioning torque over the axle/s (eg limited slip differential). This mechanism must only be capable of setting or adjustment manually whilst the car is stationary.
- 5.8 A mechanical or electronic speed controller may include a mechanical or electronic device to limit the current/voltage passed from the batteries to the drive motor (eg timed delay, current limiter, keyboard programs).
- 5.9 Setting or programming of such a device must only be possible whilst the car is stationary. Changes to the setting or program during a race are not allowed.
- 5.10 Radio control receivers carried in the car may only have a maximum of Three (3) devices (normally the steering servo, speed controller and transponder) connected when powered by an optional separate battery supply for powering of the radio control equipment/devices. The use of any further channels to receive electrical signals from sensors carried in the car is prohibited.

- 5.11 Cooling fans must be powered from the main battery pack that supplies the motive power for the car. Fans can be wired into the receiver when not powered by a separate receiver battery and cannot be powered from a separate power supply.
- 5.12 Any competitor found in contravention of the spirit or fact of rule 5.1 to 5.11 will be disqualified from event.

6.0 Chassis and Drive Train

- 6.1 Two-wheel drive to front or rear wheels or four-wheel drive is allowed.
- 6.2 Chassis must have independent suspension on all four wheels. Each driven wheel must have a flexible joint, eg: dog bone/s or universal joint/s in its driveshaft. Drive train and suspension design is free from restriction. Flat Pan (1/12th and 1/10th Track Style) chassis are not allowed.
- 6.3 The Chassis must not be shaped to gain an aerodynamic advantage. In principle the underside of the chassis must be flat and parallel to the ground along the entire length of the body-shell.
- 6.4 Aerodynamic shaped parts (splitters/diffusers/tunnels/etc) may not be fitted to the chassis.
- 6.5 Wheels nuts/axles must not extend more than 2mm beyond the wheels when viewed from above.
- 6.6 Reverse is not allowed - forward control only

7.0 General Dimensions

- 7.1 dimensions are defined in the following table

| Description | Min | Max |
|--------------------------------|------|-----|
| Wheelbase (mm) | 250 | 270 |
| Width - without body (mm) | 170 | 190 |
| Width - with body (mm) | 175 | 200 |
| Length inc Body and wing (mm) | 360 | 460 |
| Tyre Width (mm) | | 27 |
| Tyre diameter (mm) | 52 | 67 |
| Foam Tires | | 31 |
| Roof height on 10mm block (mm) | 110 | |
| Weight (g) | 1380 | |

Weight: ready to race including transponder, at all times during the race:

Wing Dimensions

| Description | Min | Max |
|--------------|-----|-----|
| Width (mm) | - | 190 |
| Depth* (mm) | - | 40 |
| Height* (mm) | - | 20 |

*The wing must fit these dimensions at all times along its width.

8.0 Tyres

- 8.1 The Host Club has a Choice of what type of tyres are to be run at this event
 - 8.1.1 Open tires
 - 8.1.1.1 Open Foam Shore
 - 8.1.1.2 Open Rubber tires
 - 8.1.2 Control Tires
 - 8.1.2.1 Rubber Tires as per tire specs in found in State Titles rules for 21.5, 13.5 Modified V3 Rule (8)

9.0 Body-shells

- 9.1 2 & 4 door sedan style bodies are allowed that are currently on the IFMAR, EFRA or ROAR body listings and fit within the GLOBAL BODY SPECIFICATIONS for electric touring cars.
- 9.2 Sports coupe, GT style or hybrid bodies will not be allowed unless approved by IFMAR, EFRA or ROAR
- 9.3 All details of main grill, front and rear lights must be clearly contrasted from the surrounding paintwork
- 9.4 All windows must be clear and unpainted.
- 9.5 Body-shells must be securely fixed to the chassis at all times during a race.
- 9.6 Only one cut out, maximum 10mm diameter for the radio antenna, may be made in the body except for clearance for the wheels (wheel arches), body mounting holes and lap timing equipment.
- 9.7 All wheel arches must be cut out as on the original car. No more than 10mm clearance between the wheels and the wheel arches is allowed.
- 9.8 The only cutouts permitted are for wheels, body posts, and one each for a radio antenna and lap timing equipment (if required)
- 9.9 All features (splitter / bumpers) from the original moulding must remain on the shell.
- 9.10 Only one wing is allowed to the dimensions specified in section 7
- 9.11 Wings must be directly mounted to the bodyshell (no spacers) on the mounts provided at the back of the shell, and be of a single moulded construction (not flat pack, bend-your-own)
- 9.12 Wings/splitters/spoilers/tabs/gurney flaps must be fixed rigidly to the body and or wing, and may not be moved whilst the car is in motion.
- 9.13 Foam bumpers may be fitted. No part of the bumper may extend outside the body-shell when viewed from any direction, nor be lower than the chassis.
- 9.14 Any car found to have no or incorrect numbers will be disqualified from that round.

References

“05” Motor dimensions

Can: Overall maximum diameter is 36.02mm measured at whatever point yields the maximum dimension, excluding solder tabs, screw heads or lead wires. Maximum length is 53.00mm measured from the mounting face of the motor to the furthest most point of the end bell, not including solder tabs, lead wires or original manufacturer's logo or name. Motor mounting holes must be on 1.00- inch (25.40mm) centers.

ROAR Approval Lists

Motor approvals (13.5, 21.5)

Web list (Pre March 2013) - http://www.roarracing.com/?page_id=251

Forum (post March 2013) - <http://roarracing.org/4rmb/forumdisplay.php?23-Motor-Approvals>

Blinky ESC approvals

Web List (Pre March 2013) - http://www.roarracing.com/?page_id=737

Forum (post March 2013) - <http://roarracing.org/4rmb/forumdisplay.php?39-ESC-Approvals>