



# **RULEBOOK 2017**

**Last updated 2017-04-02**

**This rulebook is an official document of the International Slot Racing Association (ISRA). It is updated yearly based on decisions by the ISRA national delegates. It is checked and published by the elected ISRA officials.**

## **Definitions**

The **ISRA World Championships** (ISRA WC) is defined as the whole event including practice sessions, meetings and four races.

A **race** is defined as a competition measured from the beginning of the technical inspection until the end of the final stage of that competition. The ISRA WC consists of four races.

A **class** is defined as a technically specified car to be used. A race always runs one class only. Qualifying, warm-up, heats, semi-finals and the final are seen as **stages** of a race.

**Group/groups** are used as the division of a stage following the results of qualifying or earlier stages of the race.

A **segment** is defined as one of eight time periods of driving in a group.

An **entrant** is a person who has enrolled, paid the entry fee and ISRA license, and is participating in any of the ISRA WC races and their practice sessions.

A **driver** is an entrant who has had her/his car passed in the technical inspection at the beginning of a race.

The **Race direction** is the responsible body for the ISRA WC from start to end. The race direction relies on the **Race Jury** for rule interpretation. Only the Race direction can enforce penalties. Penalties can only be given to entrants.

An ISRA **delegate** is the representative of a country that has entrants, or has had entrants in an ISRA WC during the last 3 years. The delegates are obliged to participate in the ISRA delegates meeting and if elected be part of the Race Jury.

Delegates represent their country's license holders for a year. Delegates who abuse their position may be suspended.

A driver's nationality is based on her/his valid passport. Only nations accepted within the United **Nations** are considered nations within ISRA.

## **1 General Principles**

ISRA World Championships events are presented in the spirit of promoting slot racing world wide. Thus an approved organiser of an event takes on this duty and is preparing and fulfilling an event as a promoter for their national association as well as ISRA as international organisation, and completely in line with the decisions made by the ISRA Delegates.

Every ISRA World Championships event must be organised and staged under the authority of the association of ISRA world delegates. Those countries wishing to stage the ISRA World Championship must submit a written proposal to the acting ISRA chairman. The sites for the Championships will be announced at least two years in advance. Only those persons who are licensed by ISRA may take part in these events. The licence fee is to be paid together with the entry fees, and a number be issued at registration. A license number is required for taking part in any practice session. The total number of licenses granted worldwide is unrestricted.

### **1.1 The ISRA delegates meeting**

At the ISRA World Championships three ISRA delegates meetings shall be held. The ISRA officials prepare these meetings on times set in the event time schedule

#### **First ISRA delegates meeting**

Held on the Saturday prior to the Production 24 race. This meeting shall decide the following issues:

- a) The election of a Race Jury for the event according to section 1.2 of the rulebook.

#### **Second ISRA delegates meeting**

Held on the Sunday evening. During the meeting the following issues shall be decided upon or presented:

- a) Proposals for changes to the ISRA rulebook for the following year's event.
- b) Proposals of coming events.
- c) Other questions to be considered by the delegates.

Proposal and suggestions can be submitted in advance to the ISRA Chairman or presented at the ISRA-meeting. Questions raised in a) and b) shall be decided during the third ISRA delegates meeting.

#### **Third ISRA delegates meeting**

Held on the final day of the event (Saturday) At the meeting the following issues will be decided upon:

- a) Election of ISRA officials: ISRA chairman, ISRA secretary or ISRA technical officer.
- b) Election of an election committee consisting of two delegates for the following year.
- c) Evaluation.
- d) Coming events.

- e) Changes to the ISRA rulebook for the following year's event.
- f) Voting on rule change proposals.

g) Other questions.

The election of officials is for three (3) years. The sequence is Chairman (2013), Secretary (2014), Technical officer (2015). Each of these officials has a deputy. The election committee must present a proposal for a new official the latest 30 days prior to the Delegates meeting. Proposals from individual licensed drivers can be submitted directly to ISRA within the same time frame. A proposed person must know they are submitted and be approached by ISRA to be able to acknowledge if they are willing to take on the duty.

The choice will be from these candidates. To be selected a majority (50%) of votes is necessary. If none of the candidates receives 50% of the votes, the two with most votes enter a second voting round. In case of equal number of votes in the second round the Chairman of the meeting has a decisive vote. A person cannot vote in an election in which he/she is a candidate.

Voting shall always be conducted by the showing of hands. All ISRA delegate votes shall be openly in the minutes published for transparency.

The right to vote in the delegates meeting is only for delegates representing nations that have had participants for 3 years in a row at the ISRA Worlds.

Where there are conflicting proposals, to be passed a majority (50%) of votes is necessary. If none of the rule proposals receives 50% of the votes, the two with most votes enter a second voting round. In case of equal number of votes in the second round the Chairman of the meeting has a decisive vote.

The organiser of an ISRA World Championship shall always conduct an evaluation among the drivers during the championships. The results of the evaluation will be discussed at the Delegates meeting the last day of the ISRA WC, and before the official closing of the championships.

The ISRA delegates can decide that a question brought up at the official meeting shall be decided through an e-mail vote between the delegates. The chairman always conducts such a procedure.

The minutes from these meetings will be published on the ISRA website: [www.isra-slot.com](http://www.isra-slot.com)

The ISRA Chairman or any of the ISRA Delegates may call for a e-meeting at any time between official Delegates meetings, however not more often than every three months. The Chairman will organise the meeting.

## 1.2 The Race Jury

At the ISRA World Championships, the Race Jury will consist of the **Race Director** plus **4 stewards** (2 voted by delegates + 2 chosen by the Race director.). The jury will handle and solve all issues with regard to rule interpretation, disqualification, lap counter or track failures, etc. A Deputy will step in if a Steward is personally involved in or affected by a dispute. A deputy may also step in if a Steward is unavailable due to illness or else.

## 1.3 Race direction

A race direction must consist of a **Race Director** controlling the event (as a whole), a **Race Controller** running the races, a **Technical Director** responsible for the inspections and the pit-area, and a **Result Manager** running the result services. These four officials cannot be drivers at any stage of the event. If any of them is enrolled as a participant in a class, then, in that class, a

Non-racing deputy official must be appointed. The persons filling these positions must be presented on the official website 60 days prior to the event.

## 1.4 ISRA Worlds Organiser

Organiser of ISRA World is chosen by ISRA delegates at least 2 years before. Ratio between Europe and "overseas" is defined at 4:1. ISRA Worlds will be organised in October.

## 1.5 Participation

An "Olympic rule" is used which means that all nations are welcome to participate with entrants.

## 1.6 Number of entries

- **Maximum number of drivers in ES32, F132 and ES24 is 120.**

Drivers will be accepted as follows if they are registered latest 30 June.

1. Drivers with ISRA ranking points scored outside of their home country in order of ranking number.
2. Drivers with ISRA ranking points in order of ranking number.
3. Drivers from outside host nation with no ranking point.
4. Drivers from the host nation with no ranking points.

Host nation racers in order of ranking can enroll the same number of drivers of the largest delegation once 104 drivers are registered

Maximum entrants: everybody is welcome to race, If the number of entries is lower then 104, host nation can

fill up the field till 104 racers.

If official entries in a class are below the maximum allowed for that class, the race organizer may, in conjunction with the ISRA Officials may allow further "wild card" entries into that class, up until practice starts for that class, providing that the entry or entries meet all the other relevant entrance criteria,

There is no restriction of the number of teams in the Production team race.

The organiser has to plan for a minimum number of 64 teams in the production team race, and 104 drivers in the sprint races. (See section 1.6 below for time schedule and steps to take if numbers exceeds 64/104).

Due to concerns of the race duration the race direction may, together with the Race Jury, decide to alter the driving times in section 3.2 and 3.3.

## 1.7 Time frame

Sample of time frame prepared for the 64 teams and 104 drivers in each class.

Race Day	Time	Activity	Duration(*)	Note
<b>Practice for non-host entrants</b>				
1 Friday	10.00 - 13.00	Free practice Production 1/24	3 hours	ticket system
	13.00 - 16.00	Free practice Eurosport 1/32	3 hours	ticket system
	16.00 - 19.00	Free practice Formula 1 1/32	3 hours	ticket system
	19.00 - 22.00	Free practice Eurosport 1/24	3 hours	ticket system
	22.00 - 23.00	Track preparation	1 hour	
<b>Production 1/24 team race (64 teams, 8 groups)</b>				
2 Saturday	08.00 - 19.00	Practice	11 hours	2 rounds of 8x4 min per team
	08.00 -	Body, tires and motor handout		
	before Tech	1 <sup>st</sup> ISRA meeting	15 min.	
	18.15 - 19.45	Technical inspection	1.5 hour	(**)
	20.00 - 22.30	Qualification	2.5 hours	
3 Sunday	08.00 - 18.00	Finals 8x7.5 min.	10 hours	(***)
	19.00 - 19.50	Track preparation	50 min.	
	19.00 - 20.30	2 <sup>nd</sup> ISRA meeting	1.5 hour	
<b>Eurosport 1/32 race (104 drivers, 13 groups)</b>				
	21.00 - 23.30	Practice (2x4 min.)	2.5 hours	
4 Monday	08.00 - 15.00	Practice (6x4 min.)	7 hours	
	14.00 - 15.30	Technical inspection	1.5 hour	(**)
	15.45 - 18.45	Qualification	3 hours	
	19.00 - 00.00	Heats 8x3 min.	5 hours	7 heats
5 Tuesday	08.00 - 12.15	Heats 8x3 min.	4.25 hours	6 heats (***)
	13.00 - 16.00	Semifinals 8x4 min.	3 hours	
	16.40 - 17.40	Final 8x5 min.	1 hour	
	17.40 - 18.30	Track preparation	50 min.	
	<b>Formula 1 1/32 race (104 drivers, 13 groups)</b>			
	18.30 - 00.00	Practice (5x4 min.)	5.5 hours	
6 Wednesday	08.00 - 11.30	Practice (3x4 min.)	3.5 hours	
	10.30 - 12.00	Technical inspection	1.5 hour	(**)
	12.15 - 15.15	Qualification	3 hours	
	15.30 - 00.30	Heats 8x3 min.	9 hours	13 heats
7 Thursday	08.00 - 08.30	Service break	30 min.	(***)
	08.45 - 11.45	Semifinals 8x4 min.	3 hours	
	12.30 - 13.30	Final 8x5 min.	1 hour	
	13.30 - 14.20	Track preparation	50 min.	
	<b>Eurosport 1/24 race (104 drivers, 13 groups)</b>			
	14.30 - 22.30	Practice (7x4 min.)	8 hours	
8 Friday	08.00 - 09.15	Practice (1x4 min.)	1.25 hour	
	08.15 - 09.45	Technical inspection	1.5 hour	(**)
	10.00 - 13.00	Qualification	3 hours	
	13.15 - 22.15	Heats 8x3 min	9 hours	13 heats
9 Saturday	08.00 - 08.30	Service break	30 min.	(***)
	08.45 - 11.45	Semifinals 8x4 min.	3 hours	
	12.30 - 13.30	Final 8x5 min.	1 hour	
	14.30 - 16.30	3 <sup>rd</sup> ISRA meeting	2 hours	

(\*) The addition of 8 teams (one full final) is 171 minutes (2h 51min) longer duration of the team race. The addition of 8 more drivers in a sprint race adds 96 minutes (1h 36min) to the duration of the race.

(\*\*) Tech is closed 20 minutes after final practice session seen group by group.

(\*\*\*) The organiser is responsible for that the track is properly warmed up before the start of a morning heat. This has to be done with cars in race condition and of the same class raced.

If the number of entries exceeds 104 the following take effect in steps until the schedule works out:

- a) Practice duration 3 minutes per lane (saves 2 hours per class)
- b) Allow scheduled practice until 2 am (allows 2 more groups)
- c) Heats allowed to run until the latest 2am (allows either 3-5 more heats or less heats the next day)
- d) Semi-finals 3 minutes long. (saves 24 min per class)
- e) Production finals 8x5 minutes (saves approx 3 hours)
- f) No qualifying in Production 1/24 team race (saves approx 2 h 30 min)
- g) Number of practicing rounds cut from 8 to 4 (saves 5 hours per class)

### **1.8 Registration**

Drivers without an ISRA ranking cannot register for the worlds by themselves. They need to be introduced by their national delegate (see list on the ISRA website).

If no national delegate exists, a racer should contact an ISRA official (see contacts ISRA website) before signing up to receive an approval.

The complete registration process is hosted by ISRA on the ISRA Website.

A Participant who was registered and did not show on the Worlds has to pay to organizer amount of the handout expenses. It must be paid before participating in another Worlds. There are only two exceptions: participants cancel at least one month before the Worlds, or participant cannot show due to illness (must be certified by medical doctor).

### **1.9 Entry fees**

The maximum entry fee is Euro 35 per class.

The cost of the handout parts in the team race may not be higher than the parts' normal retail prices.

The organiser must provide a detailed calculation of the handout parts to the ISRA officials. After approval of the ISRA officials the order can be placed.

### **1.10 ISRA driver's licenses**

The ISRA driver's license fee is Euro 10 per year.

### **1.11 ISRA points**

The ISRA points are awarded on a falling scale as: 250-210-180-155-135-120-110-100-82-78-74-70-66-62-58-54-50-47-44-41-38-35-32-29 (for the first 24 drivers). The 25th will receive 26 points, the 26th will receive 25 points, 27th will receive 24 points and so on down to 1 point for 50th. 51st will receive 0.97, 52nd 0.94 down to 0.55 for 65th place. 66th place will receive 0.53, 67th place will receive 0.51, and so on down to 0.25 for 80th. 0.24 for 81st, 0.23 for 82nd, and so on down to 0.01 for 104th place.

The top 8 qualifiers in the individual races receive bonus ISRA ranking points on a falling scale (15,12,10,8,6,4,2,1) to be added to their total from the race.

A driver's ISRA ranking is based on the total of points the driver has collected over the last three ISRA Worlds events. An entrant with no prior ISRA ranking will be given a ranking number based on enrolment and the first enrolled is given the lowest number beyond drivers with ranking points.

### **1.12 Trophies**

Prizes are given to all finalists in the sprint races, and to all drivers in the top 8 teams in the production team race.

### **1.13 Racing principles**

If a problem with the track occurs, which requires the heat/race to be restarted, any driver who has worked on their car before the problem occurred and is ready before the heat/race was stopped, shall be allowed to start the restarted heat/race.

The number of marshals must be the same during the whole race.

If all heats are on the same day, the first Heat (A) will marshal the last one (Z), and the last one (Z) will marshal after they have driven: If the Heats are split to two days, the marshalling shall also be split according to the split of the Heats.

Only during the actual race time or qualifying, when track power is on, are drivers and/or their pit crew permitted to work on their cars. Changing tyres in qualifying or in the warm up in the heats is prohibited. During lane changes, drivers and/or their pit crews may, change a lane sticker, straighten the braids on the car and push in body pins. A specific part of the track will be designated as the pit zone by race direction before the race starts. There shall be a minimum 3 meters of pit stop table, provided by the organiser, not close to the lap counter. The driver is allowed to replace her/his car in front of her/him, if the car was picked up from there or else it has to be placed in the pit zone. Any car damage that would make the car illegal, such as the loss of a major part of the body or a car dragging the track surface, must be immediately repaired during actual race time. The driver may continue a maximum of 3 laps before stopping to repair the car. An exception in Production 1/24, Eurosport 1/24

and Eurosport 1/32 is the loss of a front wheel(s) during the course of racing, and which must be repaired/replaced before the start of a new stage of the race. In Formula 1 1/32 the loss of a front wheel has to be repaired immediately.

Lane rotation is fixed as follows: 1 - 3 - 5 - 7 - 8 - 6 - 4 - 2 (Red - Green - Blue - Purple - Black - Yellow - Orange - White). Lane change is the driver's responsibility. No compensation can be given for incorrect changing of lanes.

Race direction can temporarily stop the race only if a marshal calls for a stop due to:

- a) a car in a non-marshalable position (i.e.: in the middle of the straight in front of the drivers)
- b) a car under a bridge or on the floor in an area indirectly accessible (e.g. under the track)
- c) a car becoming a rider on another lane.

The race direction must before the race begins point out which areas of the track that are considered under a) and b). Drivers can call for a stop by no other word than "Track!" and only in situations and areas pointed out by the race direction before the race.

Deadline for protesting is 5 minutes after each stage. Protest must be given with "protest fee" 100 EUR.

#### **1.14 Marshalling of cars and counting of laps.**

The number of laps made can only be the result of the lap counter.

No lap correction is made for missed counting due to the car's braids, nor lane jumping (rider) unless caused by a turn marshal placing the car on the wrong lane. Race direction must check the lap counting system if there is a sustained problem. If a problem with the lap counter occurs, then upon its correction, the race direction must re-run the current segment. Drivers will have their cars back only to change wheels and braids.

If a car falls off it must be placed back by a turn marshal where it initially left the slot. Race direction must check the lap counting system if there is a sustained problem.

The test is made through running across the counter a minimum of ten (10) laps with a test car always available to the race direction.

If a problem with the lap counter is detected, then upon its correction, the race direction must re-run the current segment.

Drivers will have their cars back only to change wheels and braids if the driver so wish.

Lap corrections are made for missed counting in the two following and explicit scenarios only:

- a) A car is a rider. The driver, a turn marshal or the race controller call "Track!". In the process of turning the power off the car passes the lap counter. Only if the turn marshals closest to the lap counter and/or the race direction see the incident and review it as a missed lap, the car shall be placed before the lap counter.
- b) A car flies across the lap counter during a crash in the lap counter area. The driver, a turn marshal or the race controller call "Track!". Only if the turn marshals closest to the lap counter and/or the race direction see the incident and review it as a missed lap, the car shall be placed before the lap counter.

#### **1.15 Penalties**

- a) Illegal track call: - **2 laps**.
- b) Missing marshalling duties in practice: **Loss of the next practice session**.
- c) Missing last marshalling duty in practice: **Loss of the best qualifying time in sprint race or loss of 1 lap from the teams qualifying total (subsequently added to overall total laps) in the production team race**.
- d) Missing marshalling duties in a race: - **10 laps**.
- e) Accidental crash on the straight in front of the drivers, caused by a driver's hand or a car in hand, or a touch of another driver's car by a pit crew member while removing or replacing a car in the pit zone: - **10 laps**. If it happens in another place of the track the penalty in k) below is added.
- f) A car returned to the enclosed park after the closing of technical inspection: - **10 laps**.
- g) Unsportsmanlike conduct (late coming for marshalling, the use of obscene and foul language on any occasion constitutes examples of unsportsmanlike conduct):

For the first infraction: **Warning**,  
for the second infraction: - **10 laps**,  
for the third infraction: **Disqualification**.

Practising on another entrant's turn or driving another driver's car during racing is considered unsportsmanlike conduct. In the case of practising it also renders in the loss of the entrant's next practice session. If it happens in the last practice round it will result in the entrant missing the best qualifying time in the sprint races and the loss of 1 lap in the qualifying in the production team race.

- h) Use of illegal parts, regardless of whether the car has passed a previous technical inspection: **Disqualification**.
- i) Driving with an illegal car: - **3 laps for every lap** made from when the race controller recorded the car as illegal. When the car is repaired it must be re-teched before being returned to the track.
- j) A repaired car that is put on the track elsewhere than in the designated pit area: - **3 laps**.
- k) Work on the car when track is off. Only cars involved in the accident may be worked on (only braids and body): - **3 laps**
- l) Use of illegal chemical substance at all times: - **10 laps**. The use of Metylsalicylat (Oil of Winter Green) or any comparable chemical to improve the tire compound renders the driver a penalty of 10 laps in the ongoing

stage, or, if found in a technical inspection, the following stage.

m) Use of tools in lane changes or doing anything except changing lane sticker, pushing in body pins and straighten braids: - **10 laps**.

n) There must be only one driver/team per car and one car per driver/team during the race:

**Disqualification.**

o) For illegal track call made by a driver: - **2 laps**.

## **2 Track and speed controllers.**

This section presents rules concerning the track and speed controllers for the Worlds organisers' to abide.

### **2.1 Track**

Each ISRA race must be run on a professionally built wooden track with 8 lanes, installed in a reasonable, comfortable and accessible place. Safety arrangements, in the form of track sidewalls, must be used to prevent crash damages. A track must be at least 35 metres long (115 feet) and the distance between lanes must be a minimum of 104 mm (4.1 inches). The distance between sidewalls and the outside lane must be a minimum of 150 mm (6 inches). Slot width must be 3÷4 mm and slot depth at least 9 mm. Lanes must be signed with colours and/or numbers. Tracks shall have lane colours marked on top of the track with pin stripe line. The track must have a flat surface. This should be measured by a 300 mm long level in two ways. First so that the banking angle is minimized (less than 5 degrees) by positioning the leveller in the direction of the radius, and second that joins and else is less than 1 mm from perfectly flat when measured with the 300 mm level held in the driving direction. Every worlds track shall be re-braided within 12 months prior to the event.

Racers are not allowed to use personal steps (beer boxes) because of bad visibility. The organiser however can provide purpose built steps if found necessary.

### **2.2 Lap counter**

An electronic lap counter system accurate to within 1/1000 of a second must be used. The track has to be divided into 100 equal sections that are easy readable. The lap counter must be in a position where the chance of cars passing outside of the slot is minimal. In case of need the Race Jury may decide to change the lap counter position. The lap counter position must be clearly visible to the Race Controller.

The lap counter area has to be marked on the track 1 meter before the lap counter till the end of lap counter.

### **2.3 Speed controllers**

Speed controllers are unrestricted, but they must not raise or store voltage. The controllers' connection to the track must be done with IEC plug and banana plugs as the standard plugs for ISRA tracks. IEC plug shall be mounted to the track either vertically or with a protection cover (plastic/rubber...) on top of it (if horizontal). Track has male type socket and controller female plug. This rule will be used in 2017 and forward. National sockets are optional.

### **2.4 Pre-ISRA WC practice**

The organiser must announce in the invitation when the uncontrolled practise starts. It shall not start earlier than 1 week before the Friday regulated practice for the team race starts. Practice payment for the uncontrolled practice days will vary according to how many drivers are present. For 1-60 drivers €15 each, 61-80 drivers €12.50 each, for 81-100 drivers €10 each and 101-120 €7.50 each. Up to a total maximum of €70. The organiser must schedule a minimum of 8 hours for each practise day.

For the practice days follow this order of classes: PR24, ES32, F132, ES24

### **2.5 Track wiring and power**

Track polarity on all ISRA tracks shall be standard, positive braid to the right in the direction of travel.

The track wiring and the power supply must be capable of feeding continuous power of 150W per lane. The cross section of track braid or rail must be 2,5 mm<sup>2</sup> (AWG13) or more. The distance between supply cable points must not exceed 12 m (40 ft) (i.e. on a 45 meter track there must be at least 4 supply points on each lane). The cross section of supply cables must be 6 mm<sup>2</sup> (AWG10) or more. All track braid joints must be secured with additional clamping braid-braid butt contact is not sufficient).

Track voltage shall always be from 12.0 - 13.0 V DC (unloaded).

Track voltage must be equal during all segments of a race (practice, qualifying, heats, semi-finals and final of a class). An indicator showing the voltage, must be accessible to all racers during the event.

When power supplies are used, the following limits shall be obliged. If the track has a power supply for each lane, the devices must be identical. The capacity of the power supplies must be at least 125 A.

When batteries are used, the following limits shall be obliged: At least two sets of batteries with a capacity of at least 500 Ah must be available. A charger of a minimum of 100 A must be available. The batteries must not be charged while in use for racing.

### **2.6 ISRA control principles**

3 months prior to a ISRA world championship one ISRA officer has to check with the organisers of the event that all technical specifications regarding track, wiring, power supplies and lap counter system is in line with what is specified in the ISRA rulebook.

At the start of the Worlds event, the ISRA technical officer together with the Race Jury and the Race Director will inspect all above mentioned aspects of the track. In case of that the inspection finds problems to be attended to, the organisers have to attend to them immediately.

This group will also check the fulfilments of seals and stamps to prevent tampering of the hand-out parts.

### **3 Event procedure**

This section rules the organisation and running of an ISRA Worlds event.

#### **3.1 Prior to race procedures**

An ISRA Worlds event consists of four classes run in the following sequence:

- Production 1/24 team race
- Eurosport 1/32 sprint race
- Formula 1 1/32 sprint race
- Eurosport 1/24 sprint race

The racing starts in the first Saturday of the race week and each class is run completely from start to end including practice before the next class starts.

In line with section 1.5 Number of entries, a schedule is prepared by the organiser. The basic schedule for the 104 entries' limit is presented in section 1.6. When registration is closed and when the actual number of registered drivers is known an updated schedule is presented. A schedule must maintain as much practice time as possible.

##### **3.1.1 Track conditioning**

The track must be cleaned and spray glued by the race direction before the start of practice. A mixture of two (1 oz) bottles of medium glue into two litres of solvent shall be used. The mixture is prepared by the organizer under the supervision of the ISRA Technical officer. Application must be done only by spray glue in the turns and a maximum of one metre onto a straight. Manufacture of glue will be defined by organizer and published in advance in

Rulebook "Local rules".

Only the race direction may modify the track condition, upon the authorisation of the Race Jury.

Drivers may clean only the braid/strip on their own lane before qualifying or at the beginning of a stage, during the period designated by the race direction.

Car braid cleaning/conditioning liquids may never be used on the track except by the Track maintenance manager on instructions from the Race direction.

##### **3.1.2 Practice**

A minimum of 30 minutes ticketed practise (if time allows 1 hour would be preferred) shall be run before each class between track preparation and start of the scheduled practice.

A "practice session" represents the minimum amount of practice that can be taken by one entrant at one time on a single lane. At the end of each practice session, that entrant must marshal the following practice session.

Before each class, the organiser must provide regulated practice. Practice is regulated, so that every entrant will have the same amount of practice time. Prior to the Production 1/24 team race a minimum of 2 rounds of 8 lanes of preferably 4 minutes each, and a minimum of 3 minutes each. Prior to each sprint race regulated practice has to be 1 round of 8 lanes of preferably 4 minutes each, and a minimum of 3 minutes. These practice sessions are scheduled, based on the ISRA Drivers' ranking. The length of each practice session will be the maximum duration possible as based on the number of entries (see section 1.7).

##### **3.1.3 Enclosed park and technical inspection**

The pit area (parc fermé) must be enclosed from everyone except the officials responsible for its function. It must provide for safe storage of the cars in order to avoid any possible damage to them. Drivers and the public must not at any time have access to the area. The organisers are responsible for the security of the area. Cars must remain in the Enclosed Park after the technical inspection, during the qualifying session and during every stage of the racing.

Technical inspection shall be carried out accurately. A specification sheet with check boxes must be used to make sure all items are checked

For qualifying, all cars must be brought to the technical inspection impound during the announced open period of time for each class. A technical inspection of the cars based on all eligible rules will begin at the start of that period. This period ends 20 minutes past each practice group's last practice session. All non-legal cars will be returned to the entrants to be fixed, and can be re-presented to the technical inspection anytime within the tech period for their group. All non-legal cars at the closing of a group's technical inspection period, will be released for 5 minutes to be adjusted once technical inspection is closed. All legal cars will be marked by the technical inspectors (engraving on chassis and stamp on body) and be ready to qualify. Cars deemed illegal by the end of that period will be technically inspected during race time and if passed the entrant becomes a driver. It is permitted to practice with a practice car after a drivers race car has been put into parc ferme for technical inspection for the heats only in ES 32, F1 32 & ES 24.

It is not permitted to use a practice car during the service breaks for the semi finals or final.



The service breaks between the heats and the semi-finals, and between the semi-finals and the final, have the duration of 30 minutes. The technical inspection is open during the service break. All cars have to be on the technical inspection table by the latest at the end of the 30 minute period. All legal cars will be deemed ready to continue racing. All non-legal cars will be returned to the drivers if time is still available. These drivers will be given to the end of that service break to make their cars legal. The track has its power turned on during the breaks.

A car that has been found faulty in the technical inspection may be repaired during the warm up. The car must be re-checked after the repair during the warm-up or after the start, but before making any race laps. A technical inspector must be available at the starting line for the car(s) to be checked as quickly as possible. While the repairing of a faulty car must not delay the start of the race, the inspection may be fulfilled during the start process.

Cars may be randomly checked at any time in a segment. Any part of the car that deviates from the dimensional rule limits must be repaired during actual race time. Those dimensions are: a) wheel width, b) overall car width, and c) rear car height. In the production team race all cars will be re-inspected after their heat. The following points are checked: a) blueprint on motor (the motor may be opened), b) the stamp on the body, c) the blueprint and rubber of the tires, d) the engraving of and intentional structural changes made to the chassis. Any tampering found results in the disqualification of the drivers of the team regardless of if the car has passed an earlier inspection during the race.

Cars that have had their body, tires or gear changed during racing shall always have its dimensions (widths and heights) checked in the next lane change following the repairs. The technical check shall not inflict on the drivers lane change time. If the width or height is illegal it has to be repaired immediately, but during racing time.

The tools that are used during the technical inspections shall be available to drivers during other times than inspection periods. All car dimensions are measured on a recessed tech block.

### **3.2 Production 1/24 Race Procedure**

#### **3.2.1 Team/Driver Seeding**

The production race is a 2-person team race, with each team member driving equal amounts. The race shall run as two stages: qualifying and groups.

- 1) The ranking of the teams is based on the ISRA drivers' ranking. The best ranking of the two drivers is used. The qualifying starts with the team with highest ranking number, then the next highest and so on.

#### **3.2.2 Qualifying**

Qualifying is run over 1 minute where the team with the longest distance covered wins. Each member of a team must drive 30 seconds. A 15 seconds stop for driver change is provided.

#### **3.2.3 Racing**

There is no warm up prior to race start in the Production 24 team race.

Each group consists of 8 segments. Each segment is 7.5 minutes. If possible, the number of teams in each group should be equal. If not, the number of teams can be one less in the first few groups. Drivers, at the end of their group, must be the corner marshals in the next group.

After each group, a team's finishing position will be a result of the sum of the laps completed, the last lap sections and the result from qualifying. In the event of a tie the number of race laps including track sections of the last lap shall decide.

### **3.3 Sprint race procedure**

Sprint races are conducted in the following classes: Eurosport 1/32; Formula 1 1/32 and Eurosport 1/24. All sprint races consist of four stages: qualifying, heats, semi-finals and a final.

#### **3.3.1 Qualifying (Stage 1)**

Qualifying is the first stage of a race. It will be for one minute per driver, on a qualifying lane as chosen by the race direction. The qualifying order is based on the ISRA Drivers ranking. In all sprint classes, the best ranked drivers will qualify last. The overall qualifying results are determined by the best single lap time as attained by each driver. For two drivers having matching lap times, their second best time will break the tie. Every driver, who misses his or her qualifying time, will be classed in the last position.

A driver may check and straighten her/his braids while on deck, however the car has to be placed on the track by an official.

All drivers will be placed into stage 2, i.e. the heats sorted by their qualifying result.

#### **3.3.2 Racing (Stage 2 ÷ 4)**

Stage 2, heats driven 8x3 minutes: The racers qualified at positions 1 to 8 will race in the last heat, drivers qualified at positions 9 to 16 in the second last heat, and so on. If possible, the number of drivers in each heat shall be equal. If not, the number of drivers can be one less in the first few groups.

Stage 3, semi finals driven 8x4 minutes: The best 24 drivers (by lap total) from stage 2 will be placed into 3 semi-finals (A, B and C). The top 8 will be placed in semi A. The next eight will be placed in semi B and the remaining 8 in semi C, which is run first, followed by B and A.

Stage 4, final driven 8x5 minutes: The best 8 drivers (by lap total) from stage 3 will move in to the final.

Starting lanes in stage 2 (heats) are set according to qualification results. In stage 3 (semi finals) and stage 4 (final) the starting lanes are selected by the racers in an order determined by the results from stages 2 & 3. Best result gets first choice.

Move up in case of a matching lap and segment total is always decided by the better result in the previous stage of the race, going back until the tie is resolved.

Depending on the number of drivers, the length of the stages may change to fit reasonable race duration, as determined by race direction. Leading up to the first segment of each stage a 1 minute warm-up shall be run on the starting lane. During warm-up it is not allowed to change tires.

#### **4 Technical Specifications**

New products for approval: New products for approval must be submitted by December 31st for consideration at the following years meeting.

This section regards all technical specifications to be scrutinised during technical inspection. They are presented class by class.

All dimensions are in millimetres (mm)

A recessed tech block (guide and rear wheels) is used when measuring the car dimensions except ground clearance.

Only one guide flag device per car is allowed.

The racer is responsible for his/her car, and it must be legal at all times, even if it was passed through technical inspection, penalties may be imposed for cars found to be illegal during or after the race in post technical inspection.

##### **4.1 Production 1/24**

All handout parts shall be marked by the organizer in a manner approved by the ISRA Technical Officer. This includes bodies, motor, tires, interior and any other handout parts

##### **4.1.1 Dimensions in mm.**

###### **Car**

Max height at rear wing	35.0
Max width excluding body pins and tape	83.0
Max height from track surface to bottom of bumper	12.7
Min vertical edge at front	1.0
Min ground clearance under rear axle and between rear tires	0.8
Max length measured between centres of rear axle and guide pivot	120.0

###### **Wheels and axles**

Max rear tire width	20.7
Min rear axle diameter	2.36
Min distance from top of rear axle to bottom of chassis	8.6
Min front wheel diameter	12.7
Min front wheel width	0.8
Min front axle diameter	1.0
Min front wheel track	72.0

##### **4.1.2 Chassis**

Production chassis shall only be completely stamped

The following chassis are permitted by ISRA in their approved shape and structure:

**Champion (USA) 420 Turbo Flex**

**Parma (USA) 595 Flexi 2**

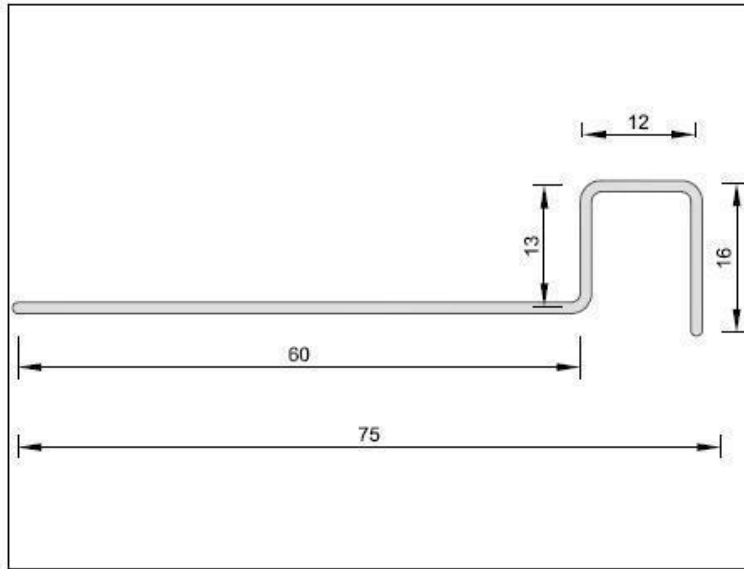
**JK (USA) JK X25**

**JK (USA) JK C43**

The following modifications are allowed:

- Lead may be taped or glued to the top of the chassis.

- b) Tape may be added to the top of the chassis.
- c) The front axle may be soldered to the chassis. The front axle shall be omitted if sticker fronts are used
- d) Front wheel retainers may be soldered to the front axle.
- e) Pintubes may be added in the original body mounting holes and be either floating or fixed to the chassis.
- f) Rear oilites may be soldered to the chassis.
- g) On all chassis except the JK X25 the motor may be soldered to the chassis using a tube/wire placed on the rear axle side of the motor, however it must be mounted below the rear axle.
- h) On the JK X25 only the supplied motor brace shall be used.
- i) Thickness of JK X 25 chassis bite-bar must be from 1.1 to 1.4 mm and may be shaped as per the diagram below.



- j) Only original JK manufactured "J" bite-bars of thickness 0.8mm to 1.2mm shall be used JK C 43 chassis.

#### 4.1.3 Body

Body type is chosen by organiser.

The body must be mounted as intended and cover the chassis, including the rear tires and the guide flag, in at least one unforced position. It can be fixed to the chassis with pins, clips and/or sellotape. Body decoration is unrestricted, but must be made in at least two different colours. The body must be completely opaque. Windows must be left clear and all four wheels must be completely visible when viewed from the side. The best ranked driver's licence number must be displayed in at least 3 different positions. Numbers must be performed as a sticker; minimum size shall be 7mm. Hand written numbers are not allowed. All cars must have the hand-out interior in the original cockpit position and block any view of the chassis seen from above.

Body cutting must be defined by organiser in Local rules.

The organiser hands out two bodies to each team. Only one body may be checked in for the race.

#### 4.1.4 Motor

The motor is a sealed handout Group 12 motor and is to be used as supplied. However, the motor shaft may be shortened and the can and magnet may be ground to provide axle clearance.

Specifications for the organiser and the ISRA Technical officer:

A production motor must be built for endurance racing.

The motors must be handed out with the can screws and the brush springs sealed to prevent tampering

The organiser must check all motors before the hand-out procedure starts to make sure they are built properly.

- a) Can & Endbell

Any commercially available "C" Can and Plastic Endbell

Inside can dimensions are defined as not less than:

Length - 23.50 mm / Width - 21.21 mm / Height - 14.22 mm

The can bearing must be a ball-bearing

Endbell bearing free choice

Endbell must be secured to the can by means of screws

#### b) Brushes, Springs

Brush hoods must be secured to brush plates by either adhesive or soldering Brush hoods must allow a minimum of 3mm wear

Brushes must be shunted

Brushes must be of premium quality (BF11 or Gold Dust) Springs must be of good quality from a recognized manufacturer Springs must be insulated

#### c) Magnets

Magnet dimensions plus or minus 10% are as follows: Length: 12.70 mm / Height: 13.97 mm

Magnets must be commercially available and of single ceramic type

Magnets must be securely glued into the can using Skinner or similar adhesive. d)

#### Armature

Minimum Ø 13.03mm / Maximum Ø 13.16mm / Minimum stack length 8.89mm Wire Size 29 AWG

Turns per pole 50

Must be Tagged "X" 12, ISRA 12, UA 12 or similar to be approved by the ISRA Technical Officer.

Must have drill blank or better hardened shaft

### 4.1.5 Front wheels and axle

The front axle must be straight and pass through the original hole as intended by the manufacturer. The front wheels must be mounted to the axel, turn on their centre at a 90 degree angle to the track surface, and have a black rubber/plastic perimeter. Stickers may be used instead as front wheels. Stickers must be placed in correct front wheel positions on the body.

### 4.1.6 Rear tires, rear axle and bushings and Gears

Handout tires are used. In case of damage to handout tires during practice or due to truing mistakes it is possible to buy max. 2 extra pairs of racing tires for the race. Damaged marked tires must be returned to organiser.

The rear axle must run in oilites.

Gears fixed to the axle by means of adhesive are not permitted.

Only plain steel non hollow axles are allowed.

## 4.2 Eurosport 1/32

### 4.2.1 Dimensions

#### Car

Max height at rear wing	32.5
Max width excluding body pins and tape	64.0
Min ground clearance under rear axle and between rear tires	0.8

#### Wheels and axles

Max rear tire width	16.0
Min rear tire diameter	15.0
Min front wheel diameter	12.7
Min front wheel width	0.8
Min front wheel track	56.0

#### Chassis

Max length measured between centres of rear axle and guide pivot	105.0
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### 4.2.2 Chassis

No restrictions.

### 4.2.3 Body

Eurosport 1/32 is a single body class. Legal body for 2015÷2017 is Kolhoza R15

The body must not deviate from its shape as produced by the manufacturer. The body must cover the entire chassis, including the rear axle and guide flag, in at least one unforced position. It can be fixed to the chassis with pins and/or sellotape.

Body decoration is unrestricted, but must be made in at least two different colours. The body must be completely opaque. Windows must be left clear. The driver's licence number must be displayed in at least 3 different positions. Numbers must be performed as a sticker or painted in decal quality; minimum size shall be 7mm. Hand written numbers not allowed.

All cars must contain a painted and 1/32 scaled three-dimensional interior with the driver's helmet, shoulders, arms and steering wheel mounted in the original cockpit position. No portion of the chassis must be seen through the cockpit area when viewed from above. Body cutting must maintain every detail of the real car (i.e. lights, wheel position, etc.).

Two bodies per car are permitted, provided that they are painted, trimmed and mounted identically. The extra body is kept in the park ferme and made available on the return of the other. During a service break both bodies are available to the driver.

#### 4.2.4 Motor

No restrictions.

#### 4.2.5 Front wheels

The front wheels must turn on their centre at 90 degrees angle to the track surface and have a black rubber/plastic perimeter. Front wheels must be completely visible when viewed from the side. Stickers may be used instead as front wheels. Stickers must be placed in correct body positions on the body.

#### 4.2.6 Rear tires

The rubber portion of the tire contacting the track surface must be black. Rear tires must be completely visible when viewed from the side.

### 4.3 Formula 1 1/32

#### 4.3.1 Dimensions

##### Car

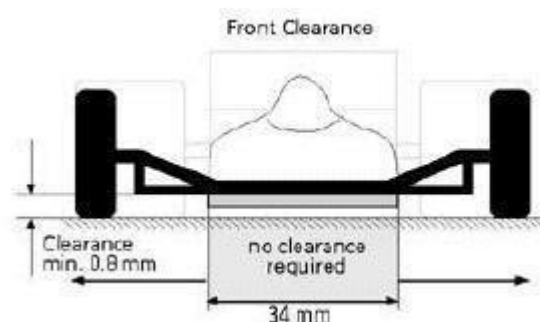
Max height at rear wing	30.0
Max width excluding body pins and tape	68.0
Min left of rear wing endplate/sidepod (see illustration below)	12.0
Min ground clearance under front wheel support/axle	0.8
Min ground clearance under rear axle and between rear tires	0.8

##### Wheels and axles

Max rear tire width	16.0
Min rear tire diameter	15.0
Min front wheel diameter	14.0
Min front wheel width	4.0
Max front wheel width	10.0
Min front wheel track	62.0

##### Chassis

Max length measured between centres of rear axle and guide pivot	110.0
Max width of chassis pan section between pans	52.0
Max length of pans	68.0
Max width in front pans, excl. front wheel supports	34.0
Max width behind pans, incl. rear axle supports	34.0



#### 4.3.2 Chassis

Chassis are unrestricted except for the following limitations: The motor must be mounted in the chassis in the "in-line" position (i.e. in a 90-degree angle to the rear axle).

#### 4.3.3 Body

Formula 1 1/32 is a single body class.

Legal body for 2017÷2019 is Kolhoza Mercedes

The body must not deviate from its shape as produced by the manufacturer. It can be fixed to the chassis with pins and/or sellotape.

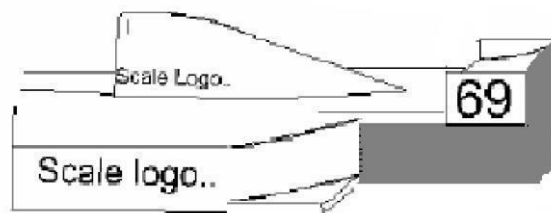
The paint scheme must represent an actual F1-team's car from 1990 to date. Pearl, fluorescent and metallic paints are only allowed if actually a part of an original paint scheme. The major engine cover and sidepod sponsors logo/name must be present. The body must be completely opaque and cover the entire chassis including the guide flag, in at least one unforced position. Excepted are axles, wheels, and the support(s) for the front axle. An additional exception is the rearward portion of the chassis' pans not covered by the body. The driver's license number must be displayed in 3 positions: on both sides of the rear wing and on the front of the car. Numbers must be performed as a sticker or painted in decal quality; minimum size shall be 7mm. Hand written numbers not allowed.

All cars must contain a painted and 1/32 scaled three-dimensional interior with the driver's helmet, shoulders, arms and steering wheel mounted in the original cockpit position. No portion of the chassis must be seen through the driver area when viewed from above.

Body cutting must maintain every detail of the real car (i.e. wheel position, etc.). Pin striping and bodyline detailing is mandatory.

Two bodies per car are permitted, provided that they are painted, trimmed and mounted identically. The extra body is kept in the park ferme and made available on the return of the other. During a service break both bodies are available to the driver.

Below is a drawing illustrating the accepted cutting line of the rear wing (greyed area), and where to position the scale logos and driver's ISRA license numbers at the rear.



#### 4.3.4 Motor

No restrictions.

#### 4.3.5 Front wheels

They must turn on their centre at 90 degrees to the track surface and have a black rubber/plastic perimeter. The front wheels and their supports must be in the intended position for the approved body used.

#### 4.3.6 Rear tires

The rubber portion of the tire in contact with the track surface must be black.

### 4.4 Eurosport 1/24

#### 4.4.1 Dimensions

##### Car

Max length measured between centres of rear axle and guide pivot	125.0 mm
Max height at rear wing	35.0 mm
Max width excluding body pins and tape	83.0 mm
Min ground clearance under rear axle and between rear tires	0.8 mm

##### Wheels and axles

Max rear tire width	20.7 mm
Min rear tire diameter	15.0 mm
Min front wheel diameter	12.7 mm
Min front wheel width	0.8 mm
Min front wheel track	72.0 mm

#### 4.4.2 Chassis

No restrictions.

#### 4.4.3 Body

Eurosport 1/24 is a single body class.

Legal body for 2016 to 2018 is RedFox (Brazil) **Audi Concept 2015**.

The body must not deviate from its shape as produced by the manufacturer. The body must cover the entire chassis, including the rear axle and guide flag, in at least one unforced position. It can be fixed to the chassis with pins and/or sellotape.

Body decoration is unrestricted, but must be made in at least two different colours. The body must be completely opaque. Windows must be left clear. The driver's licence number must be displayed in at least 3 different positions. Numbers must be performed as a sticker or painted in decal quality; minimum size shall be 7mm. Hand written numbers not allowed.

All cars must contain a painted and 1/24 scaled three-dimensional interior with the driver's helmet, shoulders, arms and steering wheel mounted in the original cockpit position. No portion of the chassis must be seen through the cockpit area when viewed from above. Body cutting must maintain every detail of the real car (i.e. lights, wheel position, etc.).

Two bodies per car are permitted, provided that they are painted, trimmed and mounted identically. The extra body is kept in the enclosed park and made available on the return of the other. During a service break both bodies are available to the driver.

#### 4.4.4 Motor

No restrictions.

#### 4.4.5 Front wheels

The front wheels must turn on their centre at 90 degrees angle to the track surface and have a black rubber/plastic perimeter. Front wheels must be completely visible when viewed from the side. Stickers may be used instead as front wheels. Stickers must be placed in correct front wheel positions on the body.

#### 4.4.6 Rear tires

The rubber portion of the tire contacting the track surface must be black. Rear tires must be completely visible when viewed from the side.

### 5 Local rules and Organiser Responsibility

The organiser must ensure the following;

Equal pit spaces, with power outlets for all drivers, with sufficient space between benches for access, Minimum 120cm space between tables in pits

There must be blinds in place to ensure that sunlight does not shine on the track. There must be good sound and visual communication between the track room and any remote pit areas.

It is the organisers responsibility to get money from registered racers. If you accept a subscription without being paid in advance, it's your own responsibility and ISRA cannot be held responsible.

- **Basic information**

- Date
- Race venue
- Address, GPS coordinates, map

Track

- Web sites, registration info

Accommodation

- Contacts

- **Production race handouts**

- Body model and cutting rules
- Motor producer
- Tyres
- The organiser shall order the tyres and motors and they shall be handed to

ISRA

officials to be marked, after marking they will be returned to the organiser for handing out to the competitors.

- **Race direction**

The race direction will consist of the following persons: ○ General manager:

- Race Director:
- Race Controller:
- Technical Inspection:
- Track Management:
- Web & Information:
- Results manager:
- Venue Management:

A race direction must consist of a **Race Director** controlling the event (as a whole), a **Race Controller** running the races, a **Technical Director** responsible for the inspections and the pit-area, and a **Result Manager** running the result services. These four officials cannot be drivers at any stage of the event. If any of them is enrolled as a participant in a class, then, in that class, a non-racing deputy official must be appointed. The persons filling these positions must be presented on the official website 60 days prior to the event.

- **Conduct**

Additional information (i.e. smoking and alcohol rules).