

Slot.it European Endurance Championship 2011
Technical Rules Rev 2011.2

Preamble

This document is the exhaustive coverage of the requirements for conformity of all cars racing the Slot it European Endurance Championship.

Changes that are not defined in this document are forbidden.

1- Car

1.1 Car models selected for the Slot it European Endurance Championship 2011 are: Porsche 956LH, Porsche 956KH, Porsche 962C, Porsche 962KH, Mercedes Sauber C9, Jaguar XJR6/9, Jaguar XJR12, Lancia LC2, Mazda 787B , Toyota 88C.

Model Car Table

 Porsche 956LH	 Porsche 956KH	 Porsche 962C	 Porsche 962KH
 Mercedes Sauber C9	 Jaguar XJR9	 Jaguar XJR12	 Lancia LC2
 Mazda 787B	 Toyota 88C		

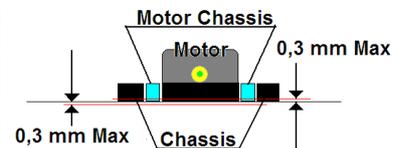
1.2 Any replacement, modification or omission must comply with the relevant rules of this document.

1.3 Maximum external tyre-to-tyre width, measured at the front and rear wheels is respectively 62.5 mm. and 63.5 mm.

1.4 The minimum clearance of the chassis from ground, measured at the front axle zone is 0,1 mm. The minimum clearance in the rear axle zone is 2,2 mm. Dimensions are with rear unused race tires on wheels.

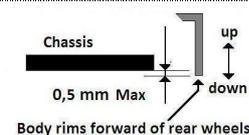
1.5 The lower side of the chassis, motor chassis and motor must lay in the same plane.

1.5.1 The max position tolerance between the lower plane of the motor and the lower plane of the motor chassis and/or the chassis is plus/minus 0,3 mm.



1.6 Screws fastening the body to the chassis and the motor chassis to the chassis may not be fully tightened.

1.8 The body lower rims forward of the rear wheels must not be lower than 0,5 mm in respect of the chassis lower plane



2 – Body

2.1 The Body must be unmodified and complete of all original parts as in the original box except as specified in this document.

2.2 The complete body minimum weight, including all allowed modifications, omissions and excluding the mounting screws is tabulated in the Body Weight Table. The table also lists the overall body weight including the Lighting kit installed on the body.

2.2.1 For the SP 16 the weight is also listed for

- Case A: SP16 kit LEDs and wiring on the body. The chip including the capacitor is on the chassis or motor chassis;
- Case B: SP16 kit LEDs, wiring and chip on the body. The capacitor is on the chassis or motor chassis;
- Case C: SP16 kit LEDs, wiring and capacitor installed on the body. The chip is on the chassis or motor chassis.

Body Weight Table

Model	Body Weight (g)	SP 16				SP 06
		Body+SP16 full kit + 3.0 g	Body & LED +1.5 g (Case A)	Body, LED & chip +2.0 (Case B)	Body, LED & capacitor + 2.5 g (Case C)	Weight + SP 06 +1.7 g
Porsche 956 LH	20.0	23.0	21.5	22.0	22.5	21.7
Porsche 956 KH	20.5	23.3	22.0	22.5	23.0	22.2
Porsche 962 C	21.0	24.0	22.5	23.0	23.5	22.7
Porsche 962 KH	18.5	21.5	20.0	20.5	21.0	20.2
Jaguar XJR6/9	19.5	22.5	21.0	21.5	22.0	21.2
Jaguar XJR12	20.0	23.0	21.5	22.0	22.5	21.7
Mercedes Sauber C9	21.0	24.0	22.5	23.0	23.5	22.7
Lancia LC 2	20.0	23.0	21.5	22.0	22.5	21.7
Mazda 787 B	19.0	22.0	20.5	21.0	21.5	20.7
Toyota 88 C	18.0	21.0	19.5	20.0	20.5	19.7

3 - Body Modifications

3.1 The minimum weight must be respected in any case.

3.2 The body external surface only must be completely painted in case of a white body or re-painted if the original boxed car was painted.

3.2.1 No clear coat on any unpainted area is allowed.

3.2.2 The interior side must remain fully unpainted.

3.3 The driver must be painted.

3.4 The rear wing may be either unpainted, painted or decorated.

3.4.1 All Glasses must remain transparent and unpainted.

3.5 Each front light cover may be protected with max three stripes of tape. The strip size must not exceed 20 mm. long and 2 mm. wide approximately.



Alternate positions are allowed

3.6 The body must bear clearly visible the team's name.

3.6.1 The two identification plates bearing the Team assigned number can be located uniquely on the two sides of the body.

3.7 The Body must be fastened to the chassis with all the screws like in the box car.

3.8 The body of the car can be drilled to install the LEDs of the lighting kit at the same location of the original lights. See also the specific car's appendix for exceptions.

3.9 Small detail parts like mirrors, wipers, blinkers, side lights, additional rear lights, hauling hooks and battery switches can be omitted as long as the specific model minimum weight is maintained.

3.9.1 Refer also to the relevant Appendix for specific allowances

3.10 All the Slot.it aftermarket parts ("tear proof" kits) for each model can be used.

			
Model	Tear proof	Model	Tear proof
Porsche 956 C	CS02P	Porsche 956 KH	CS02P
Porsche 962 C	CS02P	Jaguar XJR12	CS07P
Sauber C9 Mercedes	CS05P	Mazda 787	CS15P
Jaguar XJR9	CS07P	Porsche 962 KH	CS02P
Lancia LC2	CS08P	Toyota 88C	CS19P

3.11 Mounting posts can be reinforced using a glued plastic or metal tube, or a wire.

3.12 Rear wing attachments can be reinforced with glue, tape or resin provided the body shape is not substantially altered. No reinforcements must affect the upper part of the wing.

3.13 If the Light kit main unit is housed inside the cockpit, this part may be modified just to allow a way through to the wires connecting to power and to LEDs.

3.14 Specific Body and Chassis modifications are identified in the relevant Appendixes.

3.14.1 Porsche 956 LH & KH see appendix "Porsche 956&962"	3.14.2 Jaguar XJR9 & XJR12 see appendix "Jaguar XJR"	3.14.3 Mercedes Sauber C9 see appendix "Mercedes Sauber C9"
3.14.4 Lancia LC 2 see appendix "Lancia LC 2"	3.14.5 Mazda 787 B see appendix "Mazda 787 B"	3.14.6 Toyota 88 C see appendix "Toyota 88 C"

3.15 Spare transparent Slot it parts can be used on appropriate bodies

4 – Chassis

4.1 Only the new revisions EVO including EVO6 chassis by Slot.it are allowed. These chassis are characterized by the presence of a circular revision indicator in the inside surface of the chassis and by the embossed Slot.it logo inside a recessed square.



Chassis Revision Table

Brand	Model	Chassis	Type
Porsche	Porsche 956 LH	CS02T-AW	EVO/EVO6
	Porsche 956 KH	CS09T-AW	EVO/EVO6
	Porsche 962 C	CS03T-AW	EVO/EVO6
	Porsche 962 KH	CS03T-AW	EVO/EVO6
Sauber	Sauber C9 Mercedes	CS05T-AW	EVO/EVO6
Lancia	Lancia LC2	CS08T-AW	EVO/EVO6
Jaguar	Jaguar XJR9	CS13T	EVO/EVO6
	Jaguar XJR12	CS13T	EVO/EVO6
Mazda	Mazda 787B	CS15T	EVO/EVO6
Toyota	Toyota 88 C	CS19T	EVO/EVO6

4.2 Chassis means the entire set of original component parts to be assembled and/or glued.

4.3 The chassis, including any spare, must be marked with the name of the racing team

4.4 The front axle supports SP07 are optional and may be glued. M2 screws, free or PA05 can be used under the axle in their receptacles.



SP07



PA05

4.5 The max width of the elongated holes of the chassis for its assembly of the body must not exceed 2.6 mm. The measured dimension includes the washer under the mounting screw head, if present and glued to the chassis.

5 - Motor Chassis

5.1 Only the CH29 no-offset motor chassis in its new form with 4 screw holes and in the old type, or the CH61 EVO6 AW offset 0 motor chassis must be used.



CH29 offset 0



CH61 EVO6 AW offset 0

5.1.1 The motor positioning retainer must not be glued to the motor chassis.



motor positioning retainer

5.2 One stopper (PA25) at the least must be used either between the right hand side wheel and the motor chassis or on the side of the motor chassis central support closer to the right wheel



PA25

Stopper

5.2.1 A second stopper (PA25) may be used on the side of the motor chassis central support closer to the crown.

5.3 The two original spherical bushings CH14 or CH 56 are mandatory and must be housed in their original position.



CH14/ CH56 bushings

5.4 Bushings cannot be glued into their housing and must be free to rotate inside their housings.

6 - Chassis Modifications

6.1 The two triangular shaped fillers may be removed together with their locating pins.

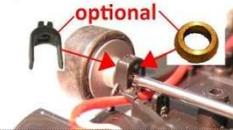


6.2 Holes may be drilled (2mm. diameter) to have access to the grub screws of the spring suspension kit .

6.3 The Pick Up housing may be reinforced using a plastic or metallic ring or a glued wire.

6.4 EVO and EVO6 chassis

6.4.1 The installation of the C-Bushings and/or spherical bushings CH14 or CH 56 into the chassis front axle receptacles is optional.



6.5 Grub screws can be used to set the riding height of the front axle

7 – Gears

7.1 The 12 teeth pinion is given by the Race Organization

7.2 Only crowns AW short hub GA Ergal, GA 26/27/28/29/30, crowns GA1626/27/28/29/30-PL and the GAe Light Ergal GA 1626/27/28/29/30e are permitted.



7.3 Crowns must not be glued to the axle

8 – Axles

8.1 Axles are PA01, PA01-50, PA01-50H PA01-55H, PA01-48, PA01-45



8.2 The independent front axle PA39 and the SP17 brass eyelets may be used. In this occurrence one wheel must be secured by an M2 grub screw and the other must be retained through the brass eyelets (SP17)



9 – Wheels

9.1 Front wheels must be any pair of PA17/PA24 (PI, Al, Mg) .



PA17-PI / PA24-PI



PA17-Als / PA24-Als



PA17-Mg / PA24-Mg

9.2 Rear wheel must be any pair of either PA17/PA24-Al or PA17/24-Mg



PA17-Als / PA24-Als



PA17-Mg / PA24-Mg

9.3 Wheels cannot be glued to their axle. The surface of contact between wheels and tires must be clean of any coating.

9.4 Wheel covers are mandatory, and must be any of the Gr. C specific inserts.



PA21

Note: The white Venturi lid can be omitted from BBS wheel insert PA21.

PA 30



PA 31



PA 34



PA 44



PA48



10 - Tires

10.1 Slot it will hand out 1 set of rear tires directly to each Team.

18.1.1 Slot it will mark the tires allowing their identification from the hand out until the end of the Race.

18.1.2 Slot it will hand out the appropriate number of tire sets as a replacement to cover the entire race.

10.2 Rear tyres will be assembled under a scrutiner's surveillance during the pre-race verifications and lubrication can be done uniquely with alcohol or other liquid provided by the organizers.

18.2.1 The rear tires can be mounted on wheels with the Slot it identification either on the inside or the outside of the car.

18.2.2 Rear Tyres cannot be glued to the rim. No other substance can be used on tyres except for those provided by the organizers

10.3 Front tyres, visibly marked Slot.it, must cover the wheel entirely, must not have a diameter smaller than 16.7 mm and such diameter must be constant across the wheel's section.

10.4 Front tires surface cannot be coated and must remain bare.

10.5 The PT19 type is allowed as a front tire with a minimum diameter of 16,7 mm, constant across the wheel's section.



PT19

10.6 Rear tires selected for the specific Race as listed in the Tire Table

Tire Table		
Race: Italy, Germignaga Verbano Tire Type PT27  F22	Race: Spain, Igualada Tire Type: F22 	Race: Belgium, Bruxelles Tire Type:TBD 

11 - Motor

11.1 The Motor will be the Slot.it Boxer closed can type MN08C and handed out by the organization.



MN08C Boxer/2

11.2 Slot it will hand motors directly to the Teams at the time of the Race.

11.3 Two motors will be assigned by draw. The first motor is for installation during the "Parc Fermé". The second is the spare and will be handed out only upon request and just before the motor replacement

11.4 Any manoeuvre to increase the performance of the motor is forbidden, including but not limited to running-in and using performance enhancement liquids.

11.5 The motor cannot be glued nor secured with tape to the motor chassis.

11.6 The motor must be assembled so that the central hole on the screw's side is lying above the line joining the other two threaded holes for the screws.

12 - Lighting Kit

12.1 The Lighting kit must be either the SP16 or SP06 type.

12.1.1 LEDs must be installed on the body

12.1.2 The SP 16 chip can be installed on the chassis or the motor chassis or the body or the Cockpit

12.1.2.1 the SP 16 capacitor can be unsoldered from the chip and installed separately on the chassis or the motor chassis or the body or the Cockpit.

12.1.3 The SP 06 base plate must be installed on the chassis



SP16



SP06

12.2 Forward and rear LEDs can be changed with different ones.

12.2.1 Front replacement LEDs must be of the same colour either white or yellow, provided that they have a diameter of 3mm.

12.2.2 Rear replacement LEDs must be red and of the same shape, either circular with a diameter of 3.0 mm. or rectangular 5.0 mm by 2.5 mm.

12.3 It is allowed to use four front LEDs, as long as they are placed consistently with the position of the front lights in the model car.

12.4 Lighting kit wires can be replaced with a different type of wires.

12.5 A switch may be added inside the car and firmly installed on the chassis, the motor chassis, the cockpit or the body and can be operated from the outside of the car.

12.6 Connectors are allowed on all wirings of the Kit.

12.7 intentionally blank

12.8 intentionally blank

12.9 Wires must fully lay inside the car.

12.10 The Lighting Kit must be switched on at all times during the night stint.

12.10.1 A lighting kit having all installed LEDs working and remaining lit for 5 seconds after power removal is defined "Operational"

12.10.2 A lighting kit is "Operational-derated" if at the least one front LED and one rear LED are working at the same time and remain lit during 5 seconds after the main power removal.

12.10.3 The lighting Kit must be "Operational" during scrutinizing to be accepted for racing.

12.10.4 A car is allowed to race during the night stints without needing a repair as long as the Lighting kit is at least Operational-derated. If this minimum condition is not satisfied the Kit must be replaced or repaired.

12.10.5 At the end of the night stints, the lighting kit can be switched off or left on, however it must be in the car at all times and Operationally connected. No wiring cut is permitted.

13 – Washers, Spacers and Screws

13.1 Metallic spacers and metallic washers may be used uniquely at the following selected locations

13.1.1 on the forward axle between the axle support and the front wheel hub. No gluing is permitted.

13.1.2 on the rear axle between the stopper(s) and the motor chassis central support. No gluing is permitted.

13.1.3 under the screw's head connecting the motor chassis to the chassis. Gluing is allowed.

13.1.4 on the rear axle between the crown and the motor chassis and/or between the right hand side wheel hub and the bushing. No gluing is permitted.

13.1.5 under the heads of the screws for the assembly of the motor to the motor chassis. Gluing is allowed.

13.1.6 under the head of the screws fastening the chassis to the body. Gluing is allowed.

13.2 Screws can be Slot it or free type, metallic only.

12.2.1 Suspensions screws must be from the suspension kit and cannot be replaced

13.3 As many screws as in the off the shelf car must be used and in the their original position.

14 – Suspension Kit

14.1 The installation of the spring suspension codes CH47 or the magnetic CH09 is allowed at the rear of the Motor chassis



CH47



CH09

14.2 The parts of CH47 and CH09 cannot be interchanged..

14.3 the threaded part of the spring suspension screws, and the grub screws if present, can be shortened

14.4 Springs CH55A e CH55B can be used on the C47 suspension kit

14.4.1 Springs cannot be modified.

14.4.2 Two springs may be installed on each side screw

14.4.3 The installation of the plastic retainers on grub screws is optional

15 - Pick-up

15.1 Slot it CH26 or CH10 or CH66 type only are permitted



CH26



CH10



CH66

15.2 It is allowed to reduce the blade thickness and/or depth.

15.3 It is allowed to bevel the CH26 and CH66 forward end of the blade to make it similar to CH10.

15.4 It is allowed to use a grub screw in the dedicated receptacle located in the shaft of the CH66.

15.5 Grub screws may be inserted in the braid receptacles of the pick up.

16 - Power Cables, Braids and Eyelets

16.1 Power cables, braids and eyelets are free type

16.2 Power cables cannot be used to change the free riding height of the front axle or of the body.

16.3 Braids may be attached to the pickup through an eyelet, a screw or soldered to the power wires..

16.3.1 The eyelet can be inserted either in front or at the rear of the braids.

17 - Spares

17.1 Each team will hand to the Race Organization the spare parts within the limits stated by the Spare Parts Matrix. They will be kept by the organization, separately from any repair tools and/or material, in a box dedicated to the specific Team and made available upon request during the Race.

Spare Parts Matrix

Pickup	3	Chassis (All parts must be present and can be already assembled and glued if multi pieces chassis)	1
Braids, Eyelets	No limit	Motor chassis with bearings	2
Power cables	No limit	Lighting kit	1
Crowns	4	Magnetic suspension set	2
Rear wheels (couples)	6	Spring suspension set	2
Pinion Z12 6.5mm PS12	3	Grub screws and Screws	No limit
Wheel covers (couples)	4	Spacers and washers	No limit
Front wheels(couples)	4	LEDS	No limit
Windshield	4	Rear wings	4
Axles	4	Front tires (couples)	2
Stoppers	2		

17.2 Slot it may add to each Team's box the spare Motor and tires.

17.3 Any chassis must pass the verification of the Race Director to be accepted as a replacement.

17.4 Spares can be sub assembled but without exceeding the limits of the single part allowance

18 - Repair and Replacement

18.1 The body cannot be replaced but only repaired.

18.2 Should the body break in pieces during the race, all of the broken and loose parts for which the max dimension exceeds 10mm. length size, must be put back in place as close as possible to their original position by glue or tape.

18.2.1 The repair is not due if, after checking by the Race Director, the body minimum weight is maintained. If the broken part is lost. In any case the Race Director has the right to enforce the repair if he so deems necessary

18.3 The rear wing must be either repaired or replaced when broken or lost. Once all spares have been used, it must be repaired.

18.4 The windshield must be either repaired or replaced when broken or lost. Once all spares have been used, it must be repaired.

18.5 Front light glasses, side windows may not be repaired or replaced.

18.6 The chassis that fails to pass the scrutinizing cannot be repaired. It must be replaced with a new chassis consistent with the car model and that will be handed out by Slot it.

18.7 Should a chassis break in pieces, it must be repaired or replaced if the broken part gives shape to its external perimeter and is adjacent to the body contour.

18.7.1 If the broken part is lost, the Race Director has the right to enforce the repair or let the chassis as is. He can also enforce the chassis replacement if he so deems necessary

18.8 In case of any break-up of the motor chassis, this part must be replaced

18.9 Wheel covers must be on during the whole race. If lost they must be replaced

19 - Magnets

19.1 No magnets are allowed except for the original ones of the motor and magnetic suspension

20 - Ballast

20.1 The only ballast allowed is the SP23 (2.5 grams) not modified and installed in its dedicated housing on the motor chassis.



21 - Power supply and Hand Throttle

21.1 Track voltage will be approx in the range 11.5V-13.0V stabilized DC

21.2 The Throttle must not feature an output voltage higher than the max supply voltage or lower than the ground of the supply

21.3 The Hand Throttle can be replaced during the race.

22 - Penalties

22.1 The Race Director is the unique entity fully empowered to impose the due penalties for the infringement of this Regulation during all phase of the race since the opening of the Event.

22.2 Slot It reserve the right of imposing penalties to drivers and or Teams in case of infringement of the Technical Rules and/or the Race regulations. Penalties will be imposed at European Championship Level only.

Slot.it European Endurance Championship 2011 Entitled Cars

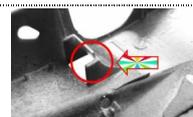
Code and Model	Race
Porsche 962 C	Italy Germignaga Verbano
Porsche 962 KH	Italy Germignaga Verbano
Jaguar XJR12	Italy Germignaga Verbano
Mazda 787 B	Italy Germignaga Verbano
Porsche 956 LH	Spain Igualada
Jaguar XJR6/9	Spain Igualada
Toyota 88 C	Spain Igualada
Porsche 956 KH	Belgium Bruxelles
Mercedes Sauber C9	Belgium Bruxelles
Lancia LC 2	Belgium Bruxelles

Appendix - Porsche 956 & 962



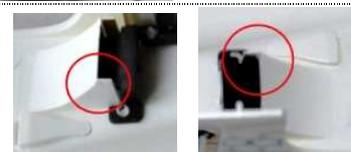
PO.1 - All types must be fitted with the cockpit code CH43

PO.2 - Type 956C only. It is allowed to modify the body to avoid collision with the pinion.



PO.3 - Type Porsche 962 KH

It is allowed to trim the rear right and left hand side air intakes to avoid collision with the motor casing and the pinion.



Appendix - Jaguar XJR6/9 LM & XJR12



JA.1 - All types. It is allowed to modify the rear of the body to remove the interference with the suspension.

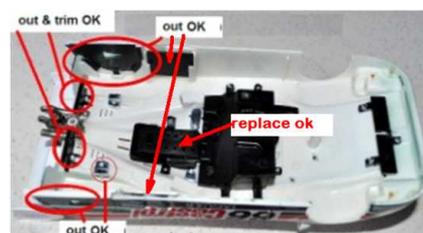
JA.2 - All types. Removal of the rear wheel covers and (XJR9 only) removal of the corresponding interlock plastic receptacles on the body.

JA.3 - All types. Removal of the rear protrusions for Light kit wire holding and the rear truss installation

JA.4 - XJR6/9 only. Removal of the part attached to the main body at the rear left location to avoid collision with the crown.

JA.4.1 XJR6/9 only. Replacement of the central plate with the flat type

JA.4.2 XJR6/9 only. Removal of the two side plates



JA.5 - the front photo etched lip in the XJR12 can be removed



JA.6 - The allowed zone for the installation of the rear LEDs is shown in the picture.



Appendix - Lancia LC 2



LA.1 - The Le Mans number lights can be omitted.

LA.2 - The allowed zone for the installation of the rear LEDs is shown in the picture.



Appendix - Mazda 787 B



MA.1 - It is allowed to remove the rear frame.



MA.2 - It is allowed to remove the forward hook from the chassis



MA.3 – The allowed zone for the installation of the rear LEDs is shown in the picture.



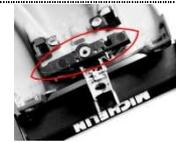
MA.4 – It is allowed to trim the air intake inside where shown



Appendix - Mercedes C9

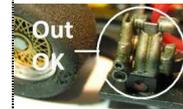


ME.1 - if the suspension is used, the plastic parts which interfere with the suspension can be removed. The rear wing and its support cannot be altered.



ME.2 -The old fixing tabs used to attach the exhaust to the body can be removed.

ME.3 – Exhausts may be removed when the model is used with the EVO6 chassis and the CH66 motor mount.



ME.4 - the vertical fins of the parts reproducing the rear brake air intakes can be trimmed to avoid any interference with the rear tyres.

Appendix - Toyota 88 C



TO.1 – It is not allowed to remove the original chassis painting at the side air intakes, if present

TO.2 - It is allowed to trim the rear right and left hand side air intakes to avoid collision with the motor casing and the pinion as shown



TO.3 It is allowed to remove the rear central light.



Revision and Applicability Table

Revision	Status	Release Date	Applicability	Release
2011.draft 1	Obsolete	xx/xx/xxxx	January 18th 2011	First Release 2011
2011.1	Obsolete	March 31st 2011	March 31st 2011	Second Release
2011.2	Active	25/7/2011	25/7/2011	<p style="text-align: center;">Official</p> <p>Revised paragraphs</p> <ul style="list-style-type: none"> 1.1 modified (1.9) deleted (front wheels riding height) 2.2.1 added Body Weight Table modified 3.5 modified 3.6.1 modified 3.15 added 4.5 added 5.1.1 added 7.2 modified and picture replaced 9.4 picture added 10.6 added tire type Igualada 12.1 modified 12.1.1 added 12.1.2 added 12.1.2.1 added 12.1.3 modified 12.2 modified 12.2.1 modified 12.2.2 modified 12.6 modified 12.7 modified (now blank) 12.8 modified (now blank) 13.1 modified 13.1.4 modified 14.3 modified 14.4.2 modified 14.4.3 modified 15.1 picture added 17 Spare Parts Matrix modified 20.1 modified MA.4 added TO.1 added TO.2 added TO.3 added

