

## Technical Regulations

### Russian Drift Series Grand Prix 2019

#### (Attachment for Regulations Russian Drift Series Grand Prix 2019)

The present Technical Regulations define requirements to cars and drivers equipment participating in the Russian drift series 2019 (further – RDS-2019).

#### **1. Definitions.**

##### **1.1. Vehicle / Basic vehicle.**

Completely original car considered “production vehicle”, without any modifications done compared to delivery model and the received certificate – "approval of vehicle type» for exploitation on public roads.

##### **1.2. Car.**

A sport car made by modifications of the Basic vehicle approved by the present Technical Regulations and completely ready to participation in Competitions. The car in this state is inspected by a Technical Commission and participates in Competitions.

##### **1.3. Sport prototype**

Open or covered 2place car made for participating to cercal racing only.

##### **1.4. Free (without restrictions).**

The detail can be processed, changed, replaced or removed in whole or partially. Material, form and quantity is not limited.

##### **1.5. Original / Original provenance.**

The terms meaning that this car, his knot or a detail, respectively, not being modified, are identified on manufacturer design documentation or by comparison with the corresponding reference product which is independently acquired through retail trade network (at the expense of the Participant whose car is controlled). At the same time as the original products (established by the producer of the car as a completing unit), installation of the spare parts is also allowed recommended by the car manufacturer and corresponding on quality and properties, to original. It concerns expendables and products (filters, candles, belts, etc.)

##### **1.6. Interchangeability.**

The term means that the stereotyped element installed on the car keeps original fastenings and the connecting sizes and original arrangement on the car. This term means as well that instead of changed an original element can be installed again, and at the same time the car and its corresponding system (the engine, pendant, etc.) will operate normally.

##### **1.7. Dangerous design.**

Even with formal compliance of the car to the present Requirements, there is still a possibility that technical solutions can be dangerous to the Driver and people around. In this case, the Competition Director (Chief Judge) on representation of the Technical commissioner has the right not to allow this or that car to participation in a competition if he considers design of this car, or his any element, dangerous.

### 1.8. Family of materials.

Steel, aluminum or plastic, etc. The alloying components do not matter.

### 1.9. Suspended parts of the car.

All parts of the car, amortized by a suspension, in others words, concerning wheels – all parts located outside points and axes of turning suspension details.

### 1.10. Chassis:

The bearing structure of the car, the center of mechanical components and car body, including any part of the specified structure.

### 1.11. Car Body:

Outside: all suspended parts of the car washed by an air stream.

Inside: all parts making integrity of a design of the car.

### 1.12. Seats:

Two surfaces making a pillow of the seat and a back.

Seat back: The surface stretching up from the backbone basis of a normally sitting person.

Seat pillow: The surface stretching forward from the backbone basis of a normally sitting person.

### 1.13. Passenger salon (cockpit):

The structural internal volume in which the driver and passengers accommodate.

### 1.14. Cowl:

External part of a design of a car body that opens to provide access to the engine.

### 1.15. Wing:

Wing - the area defined according to the figure 1.

Forward wing

The area washed by an air stream determined by: internal surface of a standard car wheel (C1/C1), forward edge of a forward door (B1/B1) and located below the plane parallel to door thresholds and touching bottom corners of a visible part of a windshield (A1/A1).

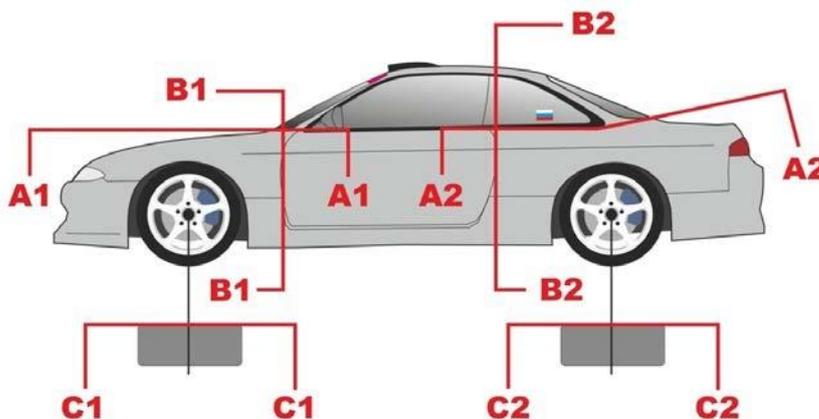


Figure 1

## Back wing

The area washed by an air stream limited by: internal surface of a standard car wheel (C2/C2), forward edge of a back side doors (B2/B2) and located below the plane parallel to door thresholds, touching lower edge of a visible part of back glass and the lower back corner of the lower part of side glass of a back door (A2/A2).

In case of three-door cars, (B1/B1) and (B2/B2), it will be determined by forward and back part of the same door.

### **1.16. Shock-absorber.**

The device for absorbing mechanical oscillations of elastic systems.

Types of shock absorbers:

- The hydraulic shock absorber - the shock-absorber extinguishing fluctuations by hydraulic (viscous) resistance of the liquid filled in it.
- The gas-filled shock absorber - the hydraulic shock absorber, in which volume not occupied with liquid is occupied with the compressed gas.
- Frictional
- Electric

### **1.17. Exhaust System.**

System of exhaust gases evacuation from the engine, including all elements from sockets with blockheads to holes that route exhausted gases to atmosphere, namely: final collectors, catalytic converters, resonators, mufflers and pipes.

### **1.18. Steering.**

All elements from a steering wheel to external tips of steering drafts inclusive used for turn of the operated wheels, including its fastenings and servo-drivers.

## **2. Vehicle Eligibility.**

**2.1.** Eligible models must be considered a "production vehicles" with engines of internal combustion, prepared according to the present "Technical Regulations" (further – a TT), body cars with the closed wheels, a cowl, a lattice (replacement of a regular lattice with a grid), and a windshield. Eligible body style include:

Coupe, sedan, hatchbacks, roadsters, pickups, wagons, cabriolets if those were basic vehicles by their production.

**2.2.** Technical data passport of the Sport Car of the established sample RAF mandatory for each car and be provided on technical inspection.

**2.3.** Eligible are only cars with the drive on a back axis, at the same time:

**2.4.** Eligible are modifications providing 100% drive for a back axis;

**2.5.** Are not eligible modifications changing drive on back, done with electronic devices (controllers of the four-wheel drive).

**2.6.** Sport prototypes and vehicles on a spatial frame are not eligible in competitions.

**2.7.** Surnames, initials and national flags of the Driver have to be put on back side glasses of the car, or forward wings (in the right top corner of a wing) on both parts. Color of letters – white on transparent background on glass, contrast on wings, easy to read on car. The surname and initials of the Driver have to be written on the car in compliance with the license of the driver. Text should be done in Russian or in English same at both parts.

**2.8.** All electronic and/or mechanical system of pilot aid are prohibited. Including but not limited: all electronic system of pull - rod control and torsional moment control, electronic control of car position (system of road holding ability, ABC etc.). Speed sensor on wheel and power shaft, sensor of steering wheel position and other steering controllers, speed sensor of driveshaft are to be removed.

### 3. Safety requirements.

#### 3.1. Safety framework.

All cars of participants have to be equipped with safety framework in compliance with requirements listed below:

Produced in compliance with:	Producer	Necessary documents
Actual attachment 14 to KTT RDS	Produced by Manufacturer certified by RDS (or other ASN – FIA member) in compliance with Article 253.8 Actual Attachment “J” to MSK FIA	Optional Manufacturer certificate
	Produced by Manufacturer certified by RAF (or other ASN – FIA member) in compliance with RDS homologation (other ASN) up to 01.01.2014	Manufacturer certificate established by RAF (ASN)
	Produced by Manufacturer certified by RAF (or other ASN – FIA member) in compliance with RAF homologation (other ASN) between 01.01.2014 and 01.07.2015	Manufacturer certificate established by FIA
	Produced by Manufacturer certified by RAF (or other ASN – FIA member) in compliance with RAF homologation (other ASN) after 01.07.2015	Manufacturer certificate established by FIA on special RAF (ASN) paper signed by RAF (ASN)
	Self-made in compliance with Article 253.8 Actual Attachment “J” to MSK FIA (maximum obligatory configuration)	Not necessary. Each time the decision on participation is made at competition

Safety framework produced with requirements of other companies are allowed. In this case, they have to meet following conditions:

1. Company which developed and edited requirements for safety frameworks has experience to organize drift competitions of international scale;
2. These requirements are published and are accessible;
3. RDS Technical Commissar approved the safety of this safety framework.

Vehicles with remarks in STP on participation in drift competitions no later than 31.12.2016 can have safety framework in compliance with Actual Attachment 14 to KTT without reinforcement of windshield pillar (p.8.3.2.1.4 Article 253 Attachment J to MSK FIA, picture 253-15). The present reinforcement is dark color at the picture 2:

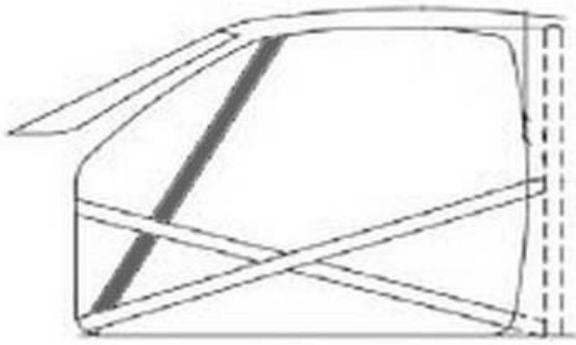


Figure 2.

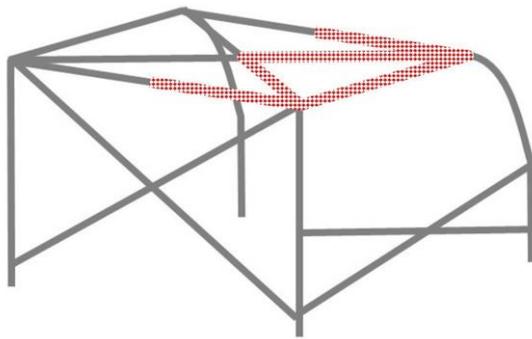


Figure 3.

Where the driver safety helmet can touch the safety framework (red color on figure 3) safety pads have to be installed meeting FIA Standard 8857-2001 type "A" (see Technical list N 23" Homologated FIA pads on safety framework) or SFI 45.1, 45.2. Such pads have to be securely fixed against moving (for ex. with double - sided adhesive tape).

### **3.2. Driver seats and mounting**

Driver seat has to be replaced with sport one homologizing to FIA requirements (FIA standard 8855/1999, or 8862 – 2009), or RAF requirements or any other ASN. Seat using shell meet requirements of Article 253-16 Attachment J to MSK FIA.

Fastenings of seats have to correspond to Art. 253.16.4 Application "J" MSK FIA. Seats meeting FIA standards 8862 – 2009: homologize to seat or to the car their fastenings shell.

3.2.1. Each car has to be equipped with safety belts.

### **3.3. Safety belts.**

The belts with two humeral and one waist strap are obligatory. Points fastenings on a car body: for a waist strap – two; for humeral straps – two. Belts have to be equipped with the lock with the lever of rotary type or the lock with the button of press action.

Seat belts have to meet requirements of Attachment 15 to KTT except p.2.1. . Freely dangling straps of belts are forbidden and have to be fixed.

### 3.4. Inside of a car

The inside of the car has to be separated from a motor compartment and the fuel tank, including his filling pipe and a neck, by bulkhead made of nonflammable material, impenetrable for liquids and a flame.

### 3.5. Main switch of electric equipment (mass)

Use of the main switch of electric equipment is obligatory, excluding formation of sparks. The switch has to disconnect simultaneously electric chains, accumulator, generator, headlights, sound signal, ignition, other electric devices, etc. The driver normally sitting in the workplace and fastened by seat belts must have an access to this switch. Use of the functioning external drive of electric equipment switch is obligatory. The external drive of the switch has to be installed under windshield fixed on a fixed element of a body, except for wings. A minimum necessary completion of a body is allowed for its installation. External drive of the switch has to be designated by a red lightning in a blue triangle with a white edging. Each edging of a triangle has to be not less than 12 centimeters long.

### 3.6. Fire extinguishing system

The car equipment with a fire extinguishing system is recommended conforms to requirements of Article 253.7.2 Applications "J" MSK FIA.

### 3.7. Other

Leak of any liquids or fuels and lubricants is not allowed.

## 4. The allowed changes of a car body.

4.1. Firewall and its placement must be original. Modifications to firewall and transmission tunnel must be done with 0,8 mm steel in conformity with following dimensions (figure 4):

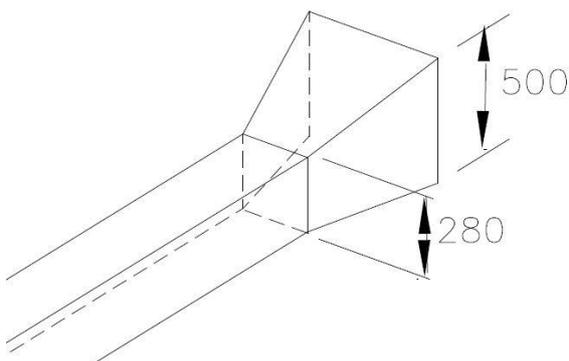


Figure 4.

Modifications to firewall and transmission tunnel are not limited to cars participating to RDS and RDS GP competitions up to 2018 (including 2018) with appropriate mark in technical passport.

4.2. Mechanisms of opening – closing the doors have to be serviceable and meet a serial factory design, at the same time the handle opening a door inside can be modified. (In that case, the handle of opening of a door outside has to be highlighted with contrast color). Removal of the serial lock of a cowl is possible. In this case, the external clamps of a cowl preventing spontaneous opening of a cowl have to be installed.

It is possible to change design and placement of cowl and luggage compartment's hinge strains. They must be no less than two and symmetrically installed to longitudinal axis of the car. Cowl and luggage compartment's hinge strains can be completely removed, in this case no less than four external fastenings.

**4.3.** The internal cavity of doors can be covered with sheets made of nonflammable material (aluminum/iron 0.5 mm thick and more, carbon/kevlar – 1mm, plastic – 2 mm) and to prevent contact with internal mechanisms and parts. Internal ceiling cover can be removed.

**4.4.** It is forbidden to remove and facilitate the supporting body elements (except modifications described in item 5.1 of the present Regulations). Strengthening of a body is authorized with the material adjacent to him and repeating a form without change of appearance, at the same time production of brackets for engine fastening, transmission and suspension fastening can vary from these requirements. Body modification is allowed for the organization of the drive on a back axis conform to recommendations Article 279 Application "J" MSK FIA division "2". While modification panels and elements of the bearing body new details have to be steel thickness not less than 0,8 mm. Addition to power elements of a body of suspension and stretchers fixing elements is allowed.

**4.5.** Modification (including change for free construction) of a part of power elements of a body is allowed (rear and forward spar) in accordance with Figure 5 (a part out of axe A1-A1 and A2-A2):

Figure 5.

**4.6.** Replacement of any regular hinged panels on facilitated (plastic, Carbon or other composite materials) is allowed. In case of availability in the replaced cowl of holes for intake of air, they have to be closed at the top view with air inlet, or grid. The inlet must be done with the material similar to cowl material, safely fixed.

**4.7.** Application of a windshield is obligatory, with the properties identical to those of a car manufacture. Use of glass made with polycarbonate is POSSIBLE that is specially produced with the factory method for the specific car. The way to fix a windshield has to correspond to a factory way for everyone specific car.

**4.8.** Installation of the side and rear glasses made with polycarbonate is allowed with a minimum thickness of 3 mm. A way of installation - gluing in and installation corresponding sealants. Mounting of moving window leaves in side glasses made from polycarbonate is allowed. They are used for air ventilation the size no more 25x35sm. Dismantling of regular devices for raising of glass is allowed. In this case, it is obligatory to replace the glass by another, made from polycarbonate.

**4.9.** The lack of glasses on the front doors is allowed. In this case, it's mandatory to Pilot to wear a helmet with visor fully covering his face. During the race, the visor must be fully closed.

**4.10.** It is mandatory to use a protective network of a doorway or a system of pilot hands fixing. With its side view, it has to stretch from the center of a steering wheel to the middle of a body rack. The network has to be made of wattle strips at least 19 wide mm (3/4 inches). The minimum size of holes of a grid has

to be 25 x 25 mm and maximum – 60 x 60 mm. Wattle strips have to be non-flammable. They are sewed with each other in everyone point of intersection. The network should not be temporary. The network has to be fixed to safety framework over a side (driver's) window and to be removed with a quick disconnection mechanism even in case of capsizing of the car. There must be the possibility of detachment of a grid by one hand. Fasteners have to have bright color (orange, yellow, red). Installation of a disconnection with a push button is allowed conform to requirements.

**4.11.** Original side window must be covered with a safety film. It can be tinted. Pilot and interior of the car must be seen on a distance of 5 m.

**4.12.** All lighting instruments located in front and also tail lamps have to be made in the factory way and be operational. Tail lamps and headlights must have the original form and the locations. Once the car is on a track – the dipped head light of the main headlights and red dimensional light of tail lamps has to be on constantly. Replacement of lamps of the main (near) light of headlights and back lamps on stroboscopes is prohibited. Headlights have to provide lighting of the road at dark time for the safe movement at any speed.

In case headlamps are made of glass, they must be pasted over with a transparent film, which does not allow splinters to scatter in case of their dissecting.

It is allowed to replace headlights with the false-panel identical in a form to a standard headlight, with the light source installed. In this case, for its installation it is allowed to do holes in this panel. The panel has to be painted or pasted over with the film imitating a headlight.

Use of imitation of original headlights made with plastics or fiberglass with the modules installed in them instead of a headlight (headlights) factory made is allowed. Such modified headlights have to be appropriately ready and provide lighting of the road to drive on public roads.

**4.13.** In qualifying race the lack of one or several external elements of a body, such as front and back wings, cowl, boot lid, doors, glasses, bumper is not allowed. In case they are fully or partially destroyed during pare race and it has impossible to replace them pilots can continue race without these elements. In any case, Race Director or Technical Commissar makes the decision. It's allowed to race without bumper or padded thresholds during the training runs.

**4.14.** At the top view on the car, wheels have to be effectively closed by wings not less than on all width of a working surface of the tire (protector).

**4.15.** Fixing of wheel arches (dilators of wings) shouldn't be at all temporary (for example, fastening on a bilateral adhesive tape, etc.); arches have to be installed reliably and strong; slots and gaps between wheel arch (wing dilator) and body aren't allowed.

**4.16.** It is allowed to replace exterior mirrors of a rear view with non-original.

**4.17.** Rear wings and spoilers are additional elements of a body, and its design is not limited. Rear wings must be safely fixed to car. Use of quick removing fixing is prohibited. Rear wing must be additionally fixed with a steel cable no less than 3 mm diameter.

**4.18. Towing eyes.**

- Towing eyes have to be provided In front and the back of the car.
- Eyes have to maintain the effort sufficient for towage of the car from any location on a circuit and in any critical condition, including wheels absence.
- Serial eyes can be replaced or strengthened. Flexible eyes (made of steel cables) are allowed.
- Application of fabric tissue loops is allowed.

- Anyway fixing of the towing device has to be carried out not less than with one bolt m12 with the durability not less than 10.9 to a front or rear spar or to a construction not smaller, than a spar, durability which is its continuation.

- In case the towing device is destroyed during towage the Applicant can be penalized.

- Towing eyes have to be marked with contrast color (red, orange or yellow) .In case eyes are below the car on bumpers or spoilers arrows in the direction of the eyes must have the same color.

- Towing eyes should not stand out vertical projection of bumpers more than on 20 mm, also to be in direct availability to judges on safety.

**4.19.** Mounting in a car roof of hatches and other elements for intake of air or an air tap from salon with a section no more than 0,125 m<sup>2</sup> is allowed.

**4.20.** None of the parts of the car, except of a rim and/or tires, should not touch the earth when the air from all tires of the same part of the car (left or right), is out. To check it there is a special valve that has to be removed.

**4.21.** The weight of the car ready to race including pilot fully equipped is no less than 955 kg and no more than 1500 kg. Technical Commissar can check the weight in any moment of the competition. It is allowed to fix a ballast to complete the car weight to minimum allowed. It must be fixed inside the car at the floor. Ballast must be made of metal blocks fixed to body with through bolts and studs diameter no less 12 mm with reinforced pads. Pads are no less than 4000 m<sup>2</sup> and no less than 3 mm thick. It must be fixed in no less than two places for each 20 kg of the ballast. There must be a possibility to seal the ballast.

## **5. Engine and its systems.**

Only one engine with internal combustion of fabric production (with catalog number of the producer) is allowed, both petrol, and diesel.

### **5.1. Exhaust system.**

Exhaust system modifications are free. All cars have to be equipped with the exhaust system of the exhaust gases directed aside from the driver and fuel tank. The exhaust system has to be metal. All components of system have to be reliably fixed to a body or to a frame of the car.

The end pipe of the exhaust system has to go out the car in the back or sideways of the car, at the same time it has to be directed to the earth at an angle not less than 45 degrees. The exhaust system has to be fixed safely and reliably. Termination of a pipe of the exhaust system should not surpass body perimeter (a vertical projection on bumpers, thresholds and wings). The terminations of the pipes directed sideways have to be located in base of the car.

It is not allowed to route the exhaust pipe through passenger compartment and body elements except this pipe route through specially made tunnel in threshold and spar. Such tunnel must be round and totally made from metal, with the same characteristics and thickness (at least) identical to thresholds and spar. It has to be welded on a threshold and / to a spar and cannot surpass them. Inside diameter of this tunnel must exceed outside diameter of exhaust system pipe to avoid any contact between. It is forbidden to put this tunnel under the front door of the car and above it lower cut. Eligible locations are specified in the picture 6.

Figure 6.

It is forbidden to place near an end part of the exhaust system combustible objects and materials (for example, fuel tank).

## **5.2. System of admission**

Modifications of admission components are allowed.

## **5.3. Fuel.**

Any liquid hydrocarbon fuel is authorized (gasoline, diesel fuel, butane). Use of pure nitro-methane, oxide-propylene and hydrazine like a fuel is prohibited.

## **5.4. Fuel system.**

Fabric fuel tank can be changed for not original one. In this case it must be done from steel or aluminum alloy. It must be installed in a secure zone of luggage compartment between arches of back wheels near or over to the back bridge beam.

Design of fuel tank must guarantee from fuel leaks including in case of turning of the car. It has to be equipped with a special installation preventing fuel leak. Ventilation tubes must be directed outside the car.

In case fuel tank and/or enter mouth are installed inside the car there must be a hole in the floor 15 – 50 mm diameter to poor out leaks of fuel.

In case fuel tank and its enter mouth are installed in a luggage compartment they must be separated from passenger compartment by a rigid housing (mandatory for two – volume cars) or a rigid partition impenetrable for liquids and fire.

Fuel tank must be fixed in a new place with no less than 2 steel tapes 20 x 8 mm minimum, with bolts no less than M8 strengths 10.9. Car body must be strengthened with steel pads no less than 1,5 mm thick in place of tapes fixing, surface no less than 10 cm<sup>2</sup>, welded at the other side of the floor. In this case original tank must be removed.

Installation of a safe fuel tank specification FIA FT3-1999, FT3.5-1999 and FT5 is recommended.

The quantity, brand and an arrangement of fuel pumps are not limited. In case fuel pumps are installed in salon they have to be put into container resistant to liquids and a flame.

Installation of fuel tubes in salon is allowed in this case they must be metal or aviation type without sockets inside except those while passing through the floor or body panels.

Anyway, all fuel cells must be separated from the exhaust system by nonflammable bulkhead.

## **5.5. Lubrication system and ventilation of the crankcase.**

The lubrication system modifications are free, including with the dry crankcase. For access of a cooling air necessary holes in a body are allowed covered with a metal grid. Oil tubes have to be metal or aviation type put in a metal braid and separated from salon. In case of installation of an oil tank not under the cowl, it has to be separated from salon by a metal impenetrable casing.

The use of an open ventilation system of the crankcase is authorized. At the same time all gases have to be routed in the tank excluding fluid leaks with a capacity not less than 0.5 liters made of translucent plastic or including a transparent panel, reliably fixed in a motor compartment. It is forbidden to install a ventilating tank of crankcase gases near elements of fulfilled exhaust gases system.

Oil dipstick has to be fixed reliably to avoid oil leaks through a stick tube.

### **5.7. Nitrous oxide. (N<sub>2</sub>O).**

Participants to competitions have to be aware of danger of unappropriated use of nitrous oxide. It is recommended to buy such systems fully completed manufactured by well-known producer. Actual safety regulations are given below.

Routed tubes of nitrous oxide must be installed out of the pilot compartment except if cylinders are installed in passenger compartment. In this case, tubes must be routed out of the passenger compartment near as possible to the exhaust hole of the cylinder. In case tubes are routed through convertor or flywheel, they must be placed in a cover of steel pipes no less 3 mm thick. The use of a high-pressure hose 10,5 MPa is mandatory.

Cylinder mounting: cylinders must be installed out of the motor compartment. Cylinders installed inside the passenger compartment are mounted with metal buckles fixed to the car equipped with a valve for passenger compartment ventilation routed outside the car. The cylinder must be reliably fixed.

Cylinder are equipped with open/close valves. Systems of closing cylinders with special keys are prohibited. Cylinders must be specially manufactured for containing nitrous oxide.

Electric instruments for increase of the temperature must be fabric manufactured. Modifications are prohibited. System is installed in a strictly compliance with manufacture instructions.

Switching: Both solenoids work with the same switcher. There are three possibility to switch off the system:

- 1) While closing butterfly valve
- 2) With special switcher giving power supply to solenoids
- 3) With ordinary ignition key or switcher of electrical instruments (mass)

Designations: all cars using nitrous oxide must have a sticker located in an external side near the cylinder and at the upper left side of windshield in compliance with the Figure 6.

Figure 6.

### **5.7. Pressurization.**

Use of superchargers of any type is authorized.

Intercooler, principle of its work (air-air, air-water, and air-ice) and its location is not limited within an external circuit of a body. Necessary holes in a body are allowed for access of a cooling air covered with a metal grid.

### **5.8. Cooling system.**

Cooling fans, their fastenings, drive, switch on system and work temperature are free. The thermostat is also free.

The screens and air ducts directing air to a radiator and located in front of it are free.

In case of installation of cooling radiator in a luggage compartment of the car, the air for its cooling should not be taken from inside (cockpit) of the car, and it has to be separated from salon.

Modifications of expansion tank of cooling liquid are free.

Modifications of pipelines of cooling liquid are free, also as well as their armature. They can be from other material and/or other diameter.

In case elements of the cooling system with the heat carrier are installed in the salon, it have to be protected with heat-resistant covers.

All connections (fitting, nipples) of tubes and sleeves of fuel, oil, brake systems and coupling have to be securely mounted at fixed parts of a body.

Only water is allowed as the heat carrier in the cooling system. Use of special anti – corrosion and anti – wear additives is allowed.

## **6. Rudder control.**

6.1 Modifications of rudder are free limited only by a closed rim.

6.2. Installation of a nave adapter of a steering wheel is allowed. At the same time, it is recommended to use an adapter homologized or certified together with the steering wheel including the possibility to install a quick-detachable fastening of a steering wheel. Such mechanism must include a ring put in the middle under the rudder. To detach one has to move this ring along an axis of steering columns towards a wheel. In other cases, the adapter has to be manufactured of uniform metal tool, to fasten to a steering shaft in the original way and not to be longer 200 mm.

6.3. The mechanical interlocking device of the ignition lock has to be removed.

6.4. The vertical angle of installation of a steering tube can be changed.

6.5. Adjustment mechanism must be done in a way to allow only instrumental adjustment.

6.5. Reliable connection of all threaded connections of rudder control is obligatory.

## **7. Brake system.**

7.1. All cars participating in competitions must have a brake system.

7.2. In case brake tubes route through the body necessary holes are allowed in order to pass through bulkhead – both between a motor compartment and salon, and between salon and a luggage compartment. At the same time possible gaps in these holes have to be tight and securely condensed. In case break tubes route through the salon they have to be made of metal tubes or hoses with external metal reinforcing.

7.3. Original rubber brake hoses can be also replaced by flexible hoses of aviation type using appropriate adapters.

7.4. Protection covers of brake disks can be removed.

7.5. Liquid brake cooling is forbidden.

7.6. Anyway braking mechanisms and also brake disks or drums of factory (factory) production are authorized.

7.7. It is authorized to install the parking brake with a hydraulic actuator operating on any axis.

7.8. Installation of reservoirs with braking fluid in salon is admissible. At the same time their volume must not exceed 0,5 liters. Their design must exclude any liquid leak.

## **8. Transmission.**

8.1. Flywheel is free.

8.2. Use of any gear ratios of the main gear and of a gearbox with obligatory availability of reverse gear is authorized.

8.3. Use of the blocked and self-locking differentials is authorized.

8.4. Mechanism of clutch must work only with a pilot's physic power.

## **9. Tires.**

9.1. In drift competitions eligible is the use only of the tires certified for general roads. Eligible is the use only of the formed tires with fabric drawing of protector produced with tires. Tires should not have any seen damages or deformations except studded. The maximum width of the tire is limited and depends on car weight.

Dependence of tire width on car weight

Weight (kg)	Width (fabric
955 – 1089	245
1090 – 1224	255
1225 - 1500	265

9.2. Any customization of tires with instruments or chemicals changing their properties is prohibited.

Heating of tires is prohibited.

9.3. Use of tires with cord seen is prohibited.

9.4. Car ready to competitions must be weighted with pilot fully equipped before the end of start checking. It is necessary to declare minimum allowed weight of the car depending of tire width during administrative checking. It is fixed for each car during technical inspection. It is prohibited to change this proportion after all checking and before the end of competitions. From the beginning of qualification and during all competitions car weight can be less than minimum allowed.

## **10. Wheels**

10.1 Design of disks is free, but they are metallic.

10.2 The disks made of magnesium or based on it are prohibited.

10.3 All wheels have to be reliably fixed by wheel bolts or nuts. Pins and nuts can replace both bolts and nuts. Connecting sizes of rims and naves should not change. In this case, the thread part of the pin can be no less than the diameter of the pin. Bolts have to be screwed in a nave no less than for all depth of the nave. Damages of wheel hairpins are not acceptable.

10.4. Decorative caps of wheels have to be removed.

**10.5.** To increase a track use of pro-rates is authorized in order to provide centering of a wheel to the nave.

**10.6.** Wheel disks, (in case they are black or very dark color) must have a radial strip bright color (white, yellow, orange, etc.) Width no less than 3 cm and length equal to disk radius due to a disk design. During all classified races, such strip has to be marked. The strip can be done with PVC material or paint and keep during all competition.

## **11. Electrical equipment.**

**11.1.** The battery must be securely mounted. For this purpose, it is recommended to strengthen original fastening of the accumulator. At the same time body, customization is allowed such as drilling of additional fixing holes in battery platform and also welding of additional eyes for fixing of the battery.

**11.2.** Batteries may be relocated. It can be put in the driver's compartment or in the car luggage compartment between spars in a considerable distance from a rear bumper.

**11.3** Relocated batteries must be fastened to the body with metal nest (platform) and two metal brackets 20x0, 8 mm with isolation covering fixed to the basis with no less 10 mm diameter bolts. Use of strengthening pads is necessary between each bolt and body material not less than 3 mm thick and not less than 20 cm<sup>2</sup>. To control its thickness they must have a hole. Battery with liquid electrolyte must be covered with di – electrical casing impenetrable to liquids, independently to rechargeable battery with ventilation outside the car. If battery is dry, it must be covered with a cover made of di – electrical material. Routing of power wires through the car is allowed. They have to be securely mounted and fixed to the body panels. Holes can be done to route wires through bulkhead between the luggage compartment, salon and motor compartment. Gaps in these holes have to be condensed. Contact of wires with sharp edges of holes is prohibited.

**11.4.** Customization of ropes is allowed to connect with a Muster electrical cutoff switch.

**11.5.** Bunches of wires located in salon have to be put into protective covers preserving from its damage.

**11.6.** Openings in a body routing bunches of wires must have rubber fringing embracing properly wires.

**11.7.** All electric switches installed inside the car (toggle switches, buttons and so forth) have to be clearly marked with the appropriate markings.

## **12. Suspension.**

**12.1.** All cars must be equipped with a suspension. At least one shock absorber on each wheel is obligatory.

**12.2.** Elastic elements (springs, torsions, laminated springs, etc.) are not limited.

**12.3.** Limiters of compression movement are not limited.

**12.4.** Replacement of all elastic hinges of suspension by more rigid is allowed.

**12.5.** Shock-absorbers (or damping cartridges, plug-in in a rack) are not limited on condition of their installation on regular places (in original or the cases of racks modified in the above-stated way).

**12.6.** Use of shock absorbers with portable cameras is allowed as well as of shock absorbers with external adjustment of characteristics of resistance.

**12.7.** Replacement of original support of racks and shock absorbers of a suspension on rigid ones is allowed. The center of the hinge of the top support can be moved.

**12.8.** Stabilizers of cross stability are free.

**12.9.** Angles of wheels installation are free.

**12.10.** Modification of suspension is allowed while fastenings are put in accordance with point 4.4. of present Regulations.

### **13. Equipment of Pilots.**

**13.1.** All occupants must wear safety helmets of closed or open type in accordance with Attachment 15 to KTT 2019 (homologized for automobile sport).

**13.2.** One piece-driving suite is required as well as gloves, sous-helmet, long linen, socks and shoes meeting the demands of Attachment N15 to KTT 2019 (homologation for automobile sport).

**13.3.** Use of head and neck protect system is mandatory in compliance with Attachment 15 to KTT 2019.

### **14. System of judge telemetry**

A device of judge telemetry will be mounted at each car during competitions. It is mounted to the car top or windshield at the upper hedge with a special vacuum cup. It can endure any weather with a nut well fixed at power connector. Each device has its individual number.

Each competitor must fix and connect a power cable (see scheme 1). Power connector has to be routed out and fixed at the upper edge of windshield. It is recommended to connect power cable directly to the battery through a fuse 10A. Power supply of the device must be switch on no less than 20 minutes before the car enter the circuit.

The place of the device mounting has to be clean and degreased to insure better and safe fixing.

