

**Technical regulations for  
vehicles prepared for Trophy-raid championships  
(group "OPEN") 2015-2016 year**

In case of cars inadequacy for technical regulations of group OPEN by one or more parameters which do not influence cars passability, security of crew and persons around, concerned person should submit an application in written form to Trophy raid commission in order to be authorized to compete in group OPEN.

**1. Definition**

Specially prepared, all wheel drive series production cars registered at Road Traffic Safety Department. All the vehicles of OPEN group must possess third party insurance and a certificate that the vehicle has passed the roadworthiness test.

**2. Enhancement.**

Enhancement of any car part is allowed if the material used copies the shape of the enhanced part as well as if enhancement is not specified in certain paragraph of these regulations.

**3. Seats**

It is allowed to install any car seats. Seats must be safely fixed. Third row of seats can be removed. Cars must have at least two seats. All the seats must have 3 point safety belts. If vehicles back seat is installed differently than it is planned by its manufacturer than at least 4 point seat belts are required.

**4. Cars construction**

If some modifications are expressly authorized in a specific paragraph of these regulations all other modifications are forbidden. If some modifications are expressly forbidden in a specific paragraph of these regulations all other modifications are allowed.

**5. Car weight**

Car weight must not be less than 1150 kg and not more than 3000 kg. Only technical commissar may do the vehicle weight check test. During vehicle weight test vehicle weight is checked with all its tanks (fuel, oil, cooling, brake fluid) being full. During this test windshield and headlamp washer fluid reservoirs must be empty.

**6. Wheel formula**

It is allowed to use units with wheel formula 4x4, it is:

- Total wheel number must be four;
- Total number of driving wheels must be four. Usage of any other wheel formula is strongly forbidden.

**7. Engine**

Only internal combustion engines are allowed.

Cooling radiators location may be changed. If so it has to be placed outside cars cockpit and separated from cockpit by waterproof partition walls.

Exhaust systems noise level must not exceed 90dB limit.

Exhaust systems modifications must not cause any changes in vehicles frame or self-supporting construction. Air intake from cockpit is strictly forbidden.

### **8. Transmission**

Cars original transmission may be replaced by any series production cars transmission or its parts. (Donor cars gross vehicle weight (GVW) must not exceed 3000 kg).

Cars original gearbox and transfer case may be replaced.

### **9. Suspension**

Any type of suspension is allowed. It is prohibited to place any moving parts of the suspension inside cockpit.

Use and number of coil, leaf, torsion springs and shock absorbers is not restricted.

It is allowed to lift suspension system and vehicles body. Lift insert fixation points must be welded or bolted to vehicles frame.

### **10. Axles**

Cars original axles may be replaced by any series production cars axles. (Donor cars GVW must not exceed 3000kg).

Cars original gearbox and transfer case may be replaced. The use of any type of portalaxle, as well as the side gears, increasing the central wheel axle height is forbidden.

Vehicles clearance (measured from lower point of speed reducer to horizontal plane on which the vehicle is placed during measurement) must be max 330 mm. During clearance check vehicle must be equipped with tires specified in 11<sup>th</sup> paragraph of these regulations (tyre pressure must be 1,0 atm). If during the race tyres are changed clearance must be checked repeatedly. Clearance is measured for both axles and the major dimension is taken into account. For cars with independent front suspension only rear axle clearance is taken into account. It is allowed to install blocking differentials. Type and number of the differentials is not restricted.

### **11. Wheels and tyres**

It is allowed to use only series production wheels produced for cars with GVW not exceeding 3500kg. Only pneumatic tyres produced for cars with GVW not exceeding 3500 kg are allowed. Maximum tyre diameter, measured at 1,0 atm pressure, must not exceed 840 mm. Tyre diameter must be in compliance with clearance restrictions specified in 10<sup>th</sup> paragraph of these regulations. It is allowed to cut in tyre protector. Use of anti slip chains forbidden, tyre side fixings with bedlocks allowed. Mud terrain tyres and tyres with increased passability protector (protector must be at least 5mm) are allowed. Tyre width is not restricted, but tyres must be covered by mudguards or arch extensions. Tyre diameter is measured at 1,0 atm pressure, tyres static deformation is not taken into account. All the tyres are measured including spare tyres.

Screw-bolt wheel fixation may be changed to screw-nut wheel fixation with condition that the number of fastenings and the diameters of thread are not changed.

Spare wheels if located inside cockpit must be tightly fixed.

## **12. Brake system**

Two circuit brake system is allowed. The layout of brake lines may be changed. Additional protection of brake lines is allowed. All driven wheels must be equipped with brakes. Brake system must be in a sound condition.

## **13. Bodywork**

It is allowed to shorten the vehicles body overhang up to suspensions fixation points. Vehicle body parts located behind cockpit may be removed. Body parts may be replaced by visually resembling parts made out of lighter materials. Replaced parts must guarantee the same level of safety that was ensured by original parts. Vehicle frame or self supporting body must be from a series produced car with GVW not exceeding 3000kg. It is allowed to shorten the vehicles frame overhang up to suspensions fixation points. Reinforcement of frame is allowed.

Cars with soft tops must have additional metal roof installed over the seats with following dimensions:

Width: as wide as the upper side of the windscreen

Length: must cover the space between the windscreen and either the back of the car's backseat (passenger seat – in case if there are only two seats in the car) or the main arc of the safety cage.

Minimum Thickness: 1mm for sheet metal; 2mm for aluminum.

Factory manufactured plastic hard tops are allowed.

It is allowed to use additional protecting elements under body. Bumper and other additional protecting elements are not restricted.

### **Exterior:**

Car must have wings and mudguards on all wheels.

Wheel arch extenders must cover the wheels. Plastic wheel arch extenders are allowed. Car's registration plates must be placed on the front and rear sides of the car. Equipment located on vehicles outside must be tightly fixed and must not jut outside vehicles dimensions. Equipment must not cause any difficulties to the team while getting in and out of vehicle. Windscreen is mandatory. Doors must not be modified. If the vehicle does not have doors or doors do not have hard construction, doors must be installed. Installed doors must have metal construction at least 30 cm above the horizontal part of drivers seat. Door locking mechanisms must prevent the possibility of unwarranted door opening. Additional hood fixation mechanisms must be installed to prevent unnecessary opening of the hood. Location of moving parts of transmission, suspension or steering system is not allowed inside cockpit.

### **Towing-eye:**

Car must have at least one towing-eye in front and one in back of car and towing-eyes must be marked with bright yellow or orange color paint that differs from vehicles paintwork. Towing-eyes must be attached to frame or self supporting body. Their minimum diameter is 30 mm. It is allowed to use factory manufactured towing- eyes.

## **14. Electrical system**

All the contacts must be insulated. Vehicles battery type, volume, placement and connecting cables are not restricted. It is allowed to install not more than two batteries. If battery is placed inside cockpit it must be placed inside insulated box providing needed ventilation for the battery conducting the vapor outside the cockpit.

**Lighting system:**

Lighting elements are not limited. Original lighting elements may be replaced with one condition that the installed elements ensure the same functions as the original ones. During technical commission all the lights must function.

**Main electrical equipment switch:**

Main electricity switch must be installed that functions for all electric circuits. It must function without producing sparks and must be positioned so that both pilot and co-pilot can reach it from their seats with fastened safety belts. Turning off the main electrical switch must turn off the engine.

**15. Fueling system**

It is allowed to use standard fuel tanks and it is also allowed to change them.

Fuel tank must be separated from cockpit by a fireproof partition wall. Fuel tanks ventilation must not be connected with cockpit. Fuel tank and its caps must not be located outside vehicles body dimensions. Fuel tank caps must have mechanisms that prevent their opening by chance. Fuel lines may be modified with condition that inside vehicles cockpit they consist of a single piece metal tube. Any fuel line connections are forbidden inside cockpit with the exception of connections between two metal tubes or between a metal tube and a homologated fuel line.

**16. Jacks**

It is forbidden to use stationary installed jacks of any kind (mechanical, pneumatic, hydraulic etc.) Number of non stationary jacks is not restricted.

**17. Winch and other special equipment**

It is allowed to install not more than one electrical, mechanical or hydraulic winch, provided in series by registered trade mark. Its power must be 1,4 times greater than vehicles GVW. It is allowed to use "spools" – self pulling up devices installed on wheels. Winch cable, its extension, strops, hooks, carabines and blocks must withstand twice as big tension force as the winch is able to produce. To prevent tree damaging, during winch use it is mandatory to use at least 50 mm wide strop around the trees to protect bark. While using winch a winch cable damper must be used.

**18. Safety cage**

It is recommended to use safety cage. Both interior and exterior safety cage can be installed. Construction of main safety rollbar can be seen in attachment No. 1, or it must be factory produced. All parameters and ways of making main safety rollbar must be in compliance with attachment No. 1 or must be homologated. Cars with original metal roofs must have a main safety rollbar with at least four fixation points to the frame. Cars without original metal roofs must have a main safety rollbar with at least six fixation points to the frame. Safety carcass can be a part of vehicle body. It is recommended to use FIA certified carcasses.

**19. Obligatory equipment**

Each car must have a fire extinguisher, factory made, it must contain not less than 4(2+2) kg fire extinguish structure (Freon-12, bromethylen, carbonic acid, extinguishing powder), concentrated in one or two bottles. Every fire extinguisher bottle must have pressure indicator, expiry date and must be in sound condition. Usage of foam extinguishers is forbidden.

Fire extinguisher must be easily reachable for pilot and co-pilot. It must be safely fixed, and must ensure quick and easy removal without using any tool. On bottle must be shown: net weight, extinguisher weight, and bottle weight.

Car has to be fitted with special first aid kit. All kit components must be with legal period of use and with no visible damage of wrapping. First aid kit must be in easy reachable place, and have waterproof package.

Car must have one reflective emergency stop triangle sign.

One winch cable damper must be used while using winch. The damper must not be fixed on winch cable, but has to slide along it. It must be colored in bright color, easy distinguishable from distance, 45 cm high (folded), 50cm wide and weight at least 0,5 kg. It is allowed to use plastic, textile, and all other materials except paper, cardboard and other wood pulp products. While using the winch damper must be placed approximately in the middle of winch cord.

## **20. Communications**

To ensure safety, and temporary medical assistance, it is recommended to equip car with radio station MW-diapason (27 MHz). As means of communication can be used radio station using other diapason, radio, cellular and satellite phones.