TECHNICAL REQUIREMENTS 2018

Modified production vehicles – EURO Group

A vehicle considered unsafe by Technical Commissioners cannot be admitted for the competition by the Sports Commission.

If unit/part is not mandatory but is used, it must conform to the requirements.

1. DEFINITION

1.1. Off-road 4x4 vehicles equipped with two seats minimum and built up for trophy-raid competitions.
1.2. Participants are responsible for proving that the car is stock as a whole and its separate parts and units. During the Technical Inspection parts and units of the car might be compared with stock parts physically or using the manufacturer's catalogue.

2. LIMITS OF THE RESOLVED CHANGES.

2.1. Any changes not specified in the current requirements are forbidden.
2.2. Any worn out or damaged part can be replaced with an identical (completely interchangeable with the original) part only.
2.3. Out-of-production vehicles: it is allowed to install parts and units from next-generation cars of the same brand after a required approval by the Technical Commissioner.

3. REINFORCEMENT

Reinforcement is allowed unless otherwise specified in the current technical requirements, by sheet material for any part if the used material repeats the form of a part, which is being reinforced, and it contacts with the whole surface of a part without forming any box-like cavities. It is allowed to reinforce suspension parts by steel rods with a diameter of not more than 12 mm.

4. WEIGHT

4.1. Vehicle weight must be not less than 2100 kg. This weight is measured without luggage, tools, spare parts, food and means of survival.

4.2. When weighing, all tanks containing liquids (lubrication, cooling, braking, heating, etc.) must be filled to its normal level specified by the manufacturer except wiper and headlight wiper tanks, brake-cooling tanks, fuel tanks, and water injection tanks, which must be empty at the time of weighing.

The following should be removed from the car:
- Crew, their equipment and luggage;
- Tools, jack, sand tracks, spare parts, spare tire;
- Survival equipment;
- Food.

5. ENGINE

5.1. It is allowed to use any gasoline or diesel engines.

5.2. Air filter

Air intake inside the crew compartment is forbidden.

5.3. **Cooling system, ventilation and interior heating**

5.3.1. It is forbidden to install cooling system radiator inside the cabin. When installing radiator (s) within the body of the car, they must be separated from the crew by a sealed bulkhead.

5.3.2. The air vents providing air supply to the engine as well as pipelines containing liquids must not have any connections and must have additional sealed protection made from metal or plastic if they pass through the crew compartment.

5.4. Exhaust system

5.4.1. The design of the exhaust system is not restricted; however under no circumstances can the systems elements pass through the crew compartment.

5.4.2. The noise level must not exceed 103 dB (A).
Measurement technique: Measurements are carried out by a sound meter, in modes of "A", "slow". The microphone must be installed at an angle of 450 according to the outlet exhaust, and at a distance of 500 mm from the centers height of an outlet. If the car is on firm ground (concrete or asphalt), it's necessary to enclose a soft lining under the microphone.

5.4.3. In order to prevent burns from hot components of the system by people outside the vehicle the protection must be installed.

6. TRANSMISSION

No restrictions.

7. SUSPENSION

No restrictions.

8. STEERING

No restrictions.

9. WHEELS AND TIRES

9.1. Tires diameter

It is allowed to use pneumatic road tires not exceeding 1043 mm on the outer diameter.
Measurement technique: Measurements are carried out on tires pumped to a pressure of 1,5 atm on a straight line passing through the center of the tire, but not vertical according to the ground (during the measurements you should not consider the natural indenting of the tire).

Agricultural tires from an approved list are allowed.

9.2. Tires width

Tire width does not depend on the vehicle weight and must not exceed 470 mm.

Measurement technique: Measurements are carried out in the horizontal line passing through the wheel hub on tires pumped to a pressure of 1,5 atm. The width of the wheel is the maximum width of the rubber part.

9.3. Wheel bolts can be replaced by fastening bolts and nuts provided that the quantity of anchorage points and the diameter of the thread remain.

9.4. Additional anti-skid devices (e.g. chains, special covers, changing grip tires, etc.) mounted on wheels and tires are prohibited.

10. BRAKING SYSTEM

10.1. It is allowed to use double-circuit braking systems functioning on the wheels of both axles by one pedal and an independent parking brake functioning independently on at least one axle's wheels.

10.2. The location of brake lines is not restricted. It is recommended to protect them additionally against external damage.

11. ELECTRICAL EQUIPMENT

All electric sockets must be isolated.

11.1. Battery

11.1.1. Type, capacity of any battery, and the cables for its connection are not restricted.

11.1.2. It is not allowed to install more than 2 batteries that are connected to the electric system of the vehicle. Batteries location is not restricted. Batteries must be fixed in accordance with article "Safety equipment" paragraph 4.2.

11.2. Alternator

11.2.1. The number, brand and capacity are not restricted, but its mechanical drive must be carried out by the vehicle's engine.

11.3. Lighting equipment

11.3.1. Basic lighting equipment (headlights, sidelights, direction indicators (but not repeaters), marker lights, brake lights, reversing lights, number plate lighting) must comply with GOST 8769-75 or any relevant standards for other countries and must be in working condition during pre-start Technical Inspection.

11.3.2. The additional lighting equipment is not restricted, but the number of additional headlights should be even and located symmetrically along the front-back body axis.

12. FUEL SYSTEM

12.1. Fuel tank

12.1.1. It is allowed to install dingle-piece production or factory-made fuel tanks in a safe zone. (It is recommended to install the tank above or in front of the vehicle's rear axle.)

12.1.2. Fuel tanks must be separated from the crew compartment by continuous fireproof (metal) and, whenever possible, sealed partition. Additionally, pipes should have a sealed protection that are suitable for fuel tank.

12.1.3. Liquid necks and caps should not extend beyond the perimeter of the vehicle when viewed from above. Any lock system can be used for the lid eliminating incomplete lock or accidental opening at impact.

12.1.4. Fuel tanks ventilation must be installed outside of the vehicle body. If tanks and fillers are located inside the body, they should be provided with holes in the floor to drain spilled fuel outside the vehicle.

12.2. Fuel lines

The location of the fuel lines is free. If the fuel lines pass through the cabin of the car they should be made out of a complete metal part. Any kinds fuel lines joints are not allowed in the cabin, where it passes through the floor or other body panels.

13. BODY AND FRAME

13.1. Frames of the jointed design are forbidden.

13.2. Exterior

13.2.1. External body panels should be made from a firm opaque material.

13.2.2. The body must completely cover all of the mechanical components visible from above.

13.3. Side panels and wheel arches

13.3.1. Complete wheels (tires with wheel rims, as seen from above, must be covered by wings or fender extensions along their entire width and length. Fender extensions must be collapsible and harm-free.

13.4. Hood catches

13.4.1. The hood must have at least two additional external catches preventing spontaneous opening of a hood during driving.

13.5. Bumper and additional external protection: no restrictions.

13.6. Interior

13.6.1. The crew compartment must be isolated by fire-resistant partitions from the engine and fuel tank compartments.

13.6.2. It is forbidden to have rotating elements of transmission, suspension and steering in the crew compartment.

13.6.3. Any potentially dangerous equipment, including all types of pipe lines, should be isolated from the crew and reliably fixed.

13.6.4. It is allowed to use any instrumentation and navigation devices if they are installed safely.

13.7. Doors

13.7.1. It is necessary to install doors of a rigid structure and they should have locks that prevent spontaneous opening. The distance from the level of a seat cushion to the level of the hard part of the door should not be less than 300 mm.

13.7.2. Each cabin door must have an opening window to fit in a parallelogram with minimum 400-mm horizontal sides. Window height should not be smaller than 250 mm when it is measured perpendicular to the horizontal sides. Corners of the parallelogram can be rounded with a maximum radius of 50 mm.

13.7.3. If door windows are equipped with a mechanical or electric window regulator, the mechanism should be separated from the crew by a protective panel (using aluminum or non-flammable plastic is recommended).

13.7.4. If folding side doors are used in the vehicle, it is allowed to remove the top half of them. The removed details do not need to be transported in the car during the competition; however the vehicle weight thus must correspond to p. 4.1., 9.3.

13.8. Windows

13.8.1. It is allowed to use multi-layered windshields of triplex type only.

13.8.2. If the aperture of a cabin door window is closed by a transparent material, the possibility of its full opening should be provided. The opening mechanism is not limited.

13.9. Seats

Installation of any automobile seats is allowed. Seats must be properly fixed.

13.10. Spare wheel

Spare wheels can be kept in the body provided that they are reliably fixed.

13.11. Hi Lift Jack

13.11.1. Jack and points of a jacking are not limited.

13.11.2. Installation and usage of any permanently mounted additional jacking devices in the vehicle is prohibited (mechanical, pneumatic, hydraulic, etc.).

13.12. A safety cage is not required.

14. WINCH AND ADDITIONAL EQUIPMENT

14.1. In the data text of the requirement the "winch" is meant as a device consisting of the following elements (no more than one of each category):
- power drive gear (including an electric motor)
- reducer
- drum
- case or a frame
- brake gear
- cable

14.2. It is allowed to install not more than two winches with the power drive gear which traction parameters should exceed a minimum of 1,4 times of the vehicle weight. Using winches with mechanical, hydraulic or electric drive gear is allowed.

14.3. The winch motor voltage input must not exceed 27 V under any circumstances.

14.4. Winch cable, extension cable, anti-rust sling fastening hook, shackles and blocks used in conjunction with a winch must withstand the tensile strength equal to doubling the maximum winch line pull.

14.5. The vehicle must be equipped with a tree protector with a minimum width of 90mm.

14.6. Wheel self-extracting devices are allowed.

14.7. Not more than 4 sand tracks are allowed in the car with a maximum size of 1500X500 mm.

14.8 When installing the winch inside the vehicle body, all rotating parts must be sealed in a casing. The cable can pass through the car interior only inside a one-piece metal tube.

Rope dampener must be used with a steel winch cable. A piece of the rubber hose not shorter than 500mm and not lighter that 1.5 kg can be used as a rope dampener.

15. SAFETY

15.1. Seat belts

The vehicle must be equipped with at least three-point factory-made seat belts. The seat belts must be mounted on the body or chassis of the vehicle. Using regular seat belt mounting points is recommended.

15.2. Helmets

Using helmets by all crewmembers is recommended. Helmets used at all official trophy-raid competitions must have a rigid external shell, shock-absorbing internal insert being an integral part of a helmets design, and ventilation holes. The use of helmets for rafting of EN 1078, EN 1077 (Europe) or ASTM of 2040 (USA) standards is recommended; for mountain bike - Snell B 90 (USA) standard (the standard mark is located on an inner helmet surface), mountain skiing or hockey. The use of automobile or motorcycle helmets, of E22 and above standards is allowed. The use of building helmets, helmets for road bicycles, tanker's or other soft-top helmets is not allowed.

15.3. Fire extinguisher

15.3.1. Vehicles must be equipped with factory-made fire extinguishers containing not less than 4 kg of fire extinguishing substance, concentrated in one or two cylinders.

15.3.2. Using foamy and aerosol fire extinguisher cylinders is not allowed.

15.3.3. Fire extinguisher cylinders must be located in easily reachable places for both driver and the co-driver. Fire extinguisher fastening must be reliable, but should be easy removable barehanded in case of fire. Fire extinguishers must have an easily readable label containing its weight, fully loaded weight in the equipped condition, weight of an empty cylinder and production date (the date of recharge).

15.4. First aid kit

Vehicles must be equipped with a first aid kit. All kit components must be have a valid expiration date and have no visible package damage. First aid kit must be waterproof-packed and located in an easily reachable place.

15.5. Means of communication:

To ensure safety and in-time medical assistance it is recommended to equip the vehicles with a Civil Band radio station (frequencies to be agreed with the organizers of the event). Crewmembers must be equipped with cellular or satellite phones.