

## 3.8 TRIAL GROUP P “PROTOTYPE”

### 3.8.1 General information

Only vehicles with four-wheel drive, two axles and four air pressured tires are entitled to take part. A vehicle, whose construction seems to have certain dangers, can be excluded from the participation. Only diesel, ordinary petrol or leak proof batteries is allowed as fuel. Beyond this the following regulations apply:

### 3.8.2 Frame/body

#### 3.8.2.1 Frame/chassie/wheelbase

Optional.

#### 3.8.2.2 Body

The body must be of impeccable construction and must not present provisory elements. It may not have sharp edges and must offer a sufficient protection to the passengers. All rotary parts of the motor and propulsion shaft must be sufficiently protected. A protective wall must be present to protect driver and co-driver from engine, oil cooler, radiator and to prevent fire or fluid from spreading into the passenger area.

#### 3.8.2.3 Dimension / Vehicle outline

Optional.

#### 3.8.2.4 Window/window frame/mirror

The windscreen and the windscreen frame including its fastening parts may be removed. In case a windscreen is used it must consist of laminated glass, Lexan/Polycarbonat or Makralon. Plexiglas is forbidden. Windscreens should not have damages, for safety reasons. Should damage occur the windscreen must be approved by technical control. Mirrors of all kinds are allowed.

#### 3.8.2.5 Body lift

Body lift is permitted. This must be rigid.

#### 3.8.2.6 Bumper

Optional.

#### 3.8.2.7 Floor / firewall / transmission tunnel

A floor plate made out of minimum 2mm thick aluminum or 1 mm thick steel has to be installed in case the original floor plate is not existing. Changes of the firewall and the transmission tunnel are allowed.

#### 3.8.2.8 Passenger area

A protective wall must be present to protect driver and co-driver from engine, oil cooler, radiator and to prevent fire or fluid from spreading into the passenger area.

#### 3.8.2.9 Seats

The number of seats is optional. Seat of racing type with the possibility for 4-point harness must be present. The seats for the driver/co-driver must be well secured, and if the seat is adjustable it should have a locking device at both sides. Seats must have head restraints that covers at least 2/3 height of the helmet.

**3.8.2.10 Harness**

Harness must at least be of type 4-point belts or so-called suspender belts (y-belts) or more, and they must be well attached to the body and/or rollcage according to harness manufacturer's specifications. The harness must be in good condition and may not be modified. If new mounting points are created in the body, a steel reinforcement plate with a surface area of at least 40 cm<sup>2</sup> and a thickness of at least 3 mm must be used. The passengers must be buckled at all time in the section during driving or rescue. The belt system used is to be put on according to its regulation and may not be manipulated. Vehicles with active airbag or belt restrain systems must be marked at both doors with the "Airbag"-symbol. It's allowed to remove the airbags.

**3.8.2.11 Rollcage**

A six-point rollcage is mandatory. The rollcage must consist of a Basic structure according to 3.2.6.4, doorbar 3.2.6.5, backstays, diagonal member 3.2.6.6 and roof reinforcement 3.2.6.7. There must be a space of at least five cm from inside the tubes in the rollcage to the drivers/co-drivers shoulder arm in a normal position. If not, the car must be fitted with side nets to prevent injury to the driver/co-driver. External rollcage is allowed. See 3.2.6 for more info.

**3.8.2.12 Protective netting / Arm straps**

Protection nets or armstraps must be used. Net must cover the door/window area so the arm/hand cannot come outside the car. This also applies to armstraps. If arm straps are used, they must open together with the harness.

**3.8.2.13 Body attachment**

Hardtop, tarpaulin with linkages inclusive all locked mounting plates, tailgate, rear seats, spare wheel, spare wheel handle, mirror and mirror handle, side and back windows, side turn signals, door handles and doors may be removed. If doors are present, interior door panel must be present. Material free, however not paper, cardboard, fabric or similar. Doors/net-doors must be able to open from the outside, or have a marking on the outside that shows where the opening is on the inside of the door.

**3.8.2.14 Fluid tubes**

A protection of the fluid tubes for the fuel -, oil-, and brake hoses outside of the body must be provided against damages. (stones, corrosion, mechanical breaks etc..). Inside the body the tubes must be protected from any fire risk. If the series arrangement is maintained, no additional protection is necessary. If no serial tank is used there must be an anti-return valve inside the breather.

**3.8.2.15 Towing eye/hook**

There must be either one towing eye or hook in the front and in the back with an inside diameter of at least 50 mm. They must be firmly embodied, easily accessible and have to be painted red, yellow or orange, so that the body of the vehicle contrast with the towing eye/hook.

**3.8.2.16 Undershield**

Undershield is optional.

**3.8.3 Suspension****3.8.3.1 Spring**

Optional. The vehicles must be fitted with spring axles. A rigid connection with the chassis is forbidden.

### **3.8.3.2 Spring pendants**

Longer spring pendants are permitted.

### **3.8.3.3 Shock absorber**

Optional.

Shock absorbers with external reservoir and/or filling valves for gas or oil, must have supplementary protection to prevent oil or gas spurting on to driver, co-driver or officials in case of damage in case of a rollover.

### **3.8.3.4 Bump stop**

Optional.

### **3.8.3.5 Level control**

Optional.

### **3.8.3.6 Torsion stick / Stabilizer bar**

Optional.

## **3.8.4 Steering**

### **3.8.4.1 Steering**

Frame-steering is not allowed, otherwise **free optional**. Only the driver is allowed to steer the vehicle in a section.

## **3.8.5 Brake**

### **3.8.5.1 Brake**

The brake assembly is optional, but there must be at least one brake at each wheel.

The braking force distribution for parking brakes or operating brakes at axles must be equal. Brake hoses and brake tubes have to be protected thoroughly, and brake hoses must be secured with metal fasteners. Plastic stripes are not allowed.

Single wheel brakes are allowed.

### **3.8.5.2 Parking brake/emergency brake**

A well functional parking brake must be present, operating on the brakes of one and the same axle, or the driveshaft to one axle. The control system of the parking brake can be operated hydraulically or mechanically, and it must be mechanically independent of the main system.

The control system of the parking brake must be possible to engage with one hand or one foot, and it must automatically remain locked when engaged.

The vehicle must also be fitted with an emergency brake system. The emergency brake system can be shared with the parking brake, or be a total separate system, and it must be able to slow down the vehicle in case of failure of regular brakes. If the vehicle is equipped with a inline cutting-brake system of the "American" type, where each wheel is able to brake individually without using the foot brake pedal and its associated brake master cylinder, the brake system is approved as emergency brake system despite that brake lines, hoses and calipers are shared with the main brake system. See 3.2.5 for test procedure.

**3.8.5.3 Steering brake**

Optional. Only the driver is allowed to operate the steering brakes.

**3.8.6 Wheels****3.8.6.1 Tire**

Rubber tires filled with air, otherwise optional. The maximum height of tires is 1250mm. Spikes, chains and dual tires are not permitted.

**3.8.6.2 Rim**

Optional. Track widening/wheel spacers are allowed.

**3.8.6.3 Wings**

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**3.8.7 Engine****3.8.7.1 Engine**

Optional. Only one engine is allowed.

NOX-injection is not allowed.

**3.8.7.2 Mixture preparation**

If there is a defect with the gas control it must be ensured that the engine goes on idling (e.g.: by a spring at throttle valve shaft).

**3.8.7.3 Cooling**

Optional.

Radiator must not be placed in the passenger area. If the radiator is placed behind the passenger area, it must be covered with protective walls to prevent hot water from reaching driver/co-driver at any angle. Even if the car has rolled over. The radiator, water hoses and water pipes should be securely fastened, and if water pipes and hoses go through the passenger area, they must be well protected to prevent the driver and co-driver from scalding or burning.

**3.8.7.4 Fuel tank / fuel pipe**

The fuel tank is optional. Fuel tank of racing type is recommended. It must be firmly joined in a sufficiently protected position and installed to the vehicle. It must not be in the passenger compartment. The fuel tank must be separated from the passenger compartment by a fireproof guard. The fuel tank has to be leak proof in any position of the car or the fuel tank.

**3.8.7.5 Exhaust**

Optional. Exhaust pipes that may be touched from outside the vehicle must be covered with thermal protection. Exhaust pipes may not exceed laterally over the body. The rear of the exhaust system must be designed so that it's possible to make a control of vehicle noise without problem. Noise limitation: The volume of the exhaust system may reach max. 98+2 decibel (DMSB near field measuring method)

**3.8.8 Drivetrain****3.8.8.1 Gearbox**

Optional, but no "Hydrostat engines".

Vehicles with automatic gearboxes must be secured so that the engine only can be started in "Neutral" and/or "Park".

#### **3.8.8.2 Axle/axle ratio**

Optional.

#### **3.8.8.3 Diff-lock**

Optional.

#### **3.8.8.4 Disconnect of axle / drive system**

Optional.

### **3.8.9 Electric**

#### **3.8.9.1 Battery**

Optional. Electrical cables should be well protected.

The positive battery terminal has to be covered to prevent contact to other metal parts.

#### **3.8.9.2 Main circuit breaker**

A main circuit breaker is valid. The main circuit breaker must cut all electrical circuits, battery, alternator or dynamo, lights, ignition, electrical controls, etc. and must also stop the engine. The main circuit breaker must be installed on the driver's side in front of the windshield. It must be reachable from the inside and from the outside. It must have a noticeably marked on/off position. Diesel engines which do not have an electrical "turn of"-solenoid must have a "stop the engine"-wire installed along with the main circuit breaker.

#### **3.8.9.3 Lights**

The choice of tail lights and head lights is optional.

#### **3.8.9.4 Electronic support**

It is not allowed to use electronic support like radios, cameras and sensors.