

LASF LITHUANIAN AUTOMOBILE SPORTS FEDERATION
2024 TECHNICAL REQUIREMENTS (REGULATION)
FOR
"TR1" CLASS CARS

CONFIRMED:
LASF 4x4 Committee,
14.02.2024

Protocol No.: 2024-01

1. GENERAL PROVISIONS

- 1.1. This regulation enters into force from 2024, March 1 and is valid until the official announcement of its replacement.
- 1.2. The requirements set out in Appendix J of the FIA International Sporting Code (hereinafter referred to as FIA TSK J) are only applicable if there is a clear reference to a specific article/clause.
- 1.3. Link: [FIA Regulations](#)
- 1.4. The details of the car and their fixing must be such that they do not pose a threat to the crew, the staff servicing the car, third parties, or the property of third parties.
- 1.5. Anything not expressly permitted by this regulation is prohibited. Permitted changes/reconstructions must not cause or contain unauthorized changes.
- 1.6. In the event of disputes regarding the understanding or application of certain clauses, the LASF 4x4 Committee has the right to comment and clarify these regulations.

2. CONCEPTS

- 2.1. Base model: car model, including all its modifications, produced in a certain period and having its own factory code (marking).
- 2.2. Homologated car: a car modification or variant of its execution, which is recorded in the list of homologated cars of the FIA or the National Motor Sports Federation, according to the officially approved set of parameters.
- 2.3. Body: a set of metal parts of the body, which may be marked with a VIN identification number, connected at the factory by welding or other fastening elements.
- 2.4. Frame: a supporting structure made of two longitudinal and at least two transverse metal profiles, which can be marked with a VIN identification number.
- 2.5. Interior: the space provided by the serial car manufacturer for the driver and passenger, separated from the engine compartment and the luggage compartment by partitions.
- 2.6. Original part: a part that was used in the serial production of a car of the current model or a part (analogue) of other manufacturers with an identical shape and principle of operation.
- 2.7. Serial part: a part that was used in the serial production of a car of an existing brand or a part (analogue) of other manufacturers with an identical shape and principle of operation.
- 2.8. Free part (without restrictions): the part can be processed, reformed, or replaced by another part in any way.
- 2.9. Aerodynamic detail (spoiler): a detail attached to the car body with an aesthetic and/or aerodynamic function.
- 2.10. 4x4: four-wheel drive.
- 2.11. Geometric engine displacement: calculated according to the formula $V = \pi R^2 H N$ (V - engine displacement, π - 3.1416, R - 1/2 cylinder diameter, H - piston stroke, N - number of cylinders).
- 2.12. Road traffic rules (KET).

3. CARS ALLOWED

- 3.1. Production four-wheel drive off-road vehicles prepared in accordance with this regulation.

3.2. Cars must be registered in State enterprise "REGITRA" (Register of Vehicles of the Republic of Lithuania) or another country's vehicle register, and must have valid civil liability insurance and a document confirming the completion of a state technical inspection.

4. CARS ARE PROHIBITED

- 4.1. Cars that do not comply with this regulation.
- 4.2. Cars are driven by two wheels.
- 4.3. Cars with more than 4 (four) wheels (spare wheels are not counted).
- 4.4. Cars, in the design or equipment of which the technical commission of the competition found essential defects, which may pose a threat to the crew, service personnel, third parties or the property of third parties.

5. DIVISION INTO CLASSES - NOT APPLICABLE

6. MINIMUM CAR WEIGHT

- 6.1. The minimum weight of cars at any time of the competition cannot be less than 850 kg and not more than 3500 kg.
- 6.2. The concept of the minimum mass of the car is the mass of the car without crew, without crew equipment, and without spare wheels and spare parts and tools.
- 6.3. Before weighing, it is forbidden to put any objects, pour any liquids, including fuel, into the car.

7. BODY - FRAME

7.1. Body:

- a) The exterior shape of the base model body must be maintained and recognizable.
- b) The body is original, but can be modified according to the requirements of this article.
- c) It is allowed to remove (unscrew, drill, cut) brackets and details from the frame (wing fender holders, rear seat holders, spare wheel holders, cable braid holders, etc.) that do not connect parts (segments) of the body (frame) and whose function is not the body increasing stiffness to deformations.
- d) The floor is original, but can be modified, but only in cases where it is necessary for the installation of seats and safety hoops. The area to be modified cannot be larger than necessary for the installation of the above-mentioned parts. A sheet of steel or aluminum (if the floor is aluminum) with a minimum thickness of the original floor sheet can be used for modification, fixed by welding.
- e) Roof plate (including crossbars and skylight) - original. If the crossbar interferes with the installation of the safety hoops, it can be removed.
- f) It is allowed to install ventilation openings and diffusers on the roof, provided that their design protects against any objects or water entering the car interior directly.
- g) Reinforcement of the frame is allowed, including rewelding of seams.
- h) It is allowed to install additional brackets, threads, and attachment points for parts and equipment.
- i) It is allowed to raise the body in relation to the frame ("body lift"), but not more than 50 mm.

7.2. Frame:

a) Frame - original (can be reinforced). Reinforcement of shock absorber attachment points is allowed, but the position of the points cannot be changed. Local modification of the frame for winch installation is allowed. Due to this modification, the structure cannot be weakened, and the length and width of the frame cannot change.

7.3. Safety hoops are mandatory. Elements marked in black must be made of a minimum 45x2.5 or 50x2.0 mm diameter steel, cold-drawn, seamless pipe. All other elements of safety hoops can be made of 38x2.5 or 40x2.0 mm diameter steel, cold-drawn, seamless tube. Minimum construction (Fig. 1):



Fig. 1

7.4. Doors, engine, and trunk covers, bumpers, fenders, grills.

- a) Front doors - original.
- b) Front door window lifting mechanisms - no restrictions.
- c) Internal decoration of the front door - without restrictions, but mandatory.
- d) Rear door - original (can be modified).
- e) Rear door window lifting mechanisms - no restrictions.
- f) Interior decoration of rear doors - without restrictions.
- g) The front door must open both from the outside and from the inside.
- h) Engine hood - without restrictions, but externally original shape.
- i) Tailgate (board) - no restrictions. Interior decoration - without restrictions.
- j) Original hood lock - can be removed.
- k) Safety pins - recommended for engine cover.
- l) Front and rear bumpers - original or self-made, covering the entire width of the car. - their modification is allowed by fitting
- m) Front and rear fenders - original, but fenders.
- n) Front grill - no restrictions.
- o) Other external details - without limitations.

7.5. Windows, wipers, window washing

- a) Front window - original (can be heated). It is allowed to install additional brackets. It is allowed to use a darkening strip at the top of the glass if it does not obstruct the driver's view of road signs and traffic lights.
- b) Front window wipers - original.
- c) Front window washing system - without restrictions, but mandatory.

- d) Front door windows - original (transparent protective film is recommended) or windows made of polycarbonate plastic (minimum thickness - 3.0 mm) can be installed, except in cases where they are not provided by the serial model manufacturer.
- e) Rear door windows - original (transparent protective film is recommended) or windows made of polycarbonate plastic (minimum thickness - 3.0 mm) can be installed, except in cases where they are not provided by the serial model manufacturer.
- f) Other windows - without restrictions.
- g) Rear window wiper - no restrictions.
- h) Rear window washing system - without restrictions.
- i) Tinting (including silver film) of the front door windows is permitted only when provided for in the supplementary regulations of the competition.

7.6. Rear view mirrors

- a) Outside rear-view mirrors without restrictions, but must be installed on both sides of the vehicle.
- b) Interior rear view mirror - without restrictions.

7.7. Spoilers and bottom guards

Spoilers - without restrictions, but cannot protrude from the perimeter of the car A when viewed from above (Figure 2):

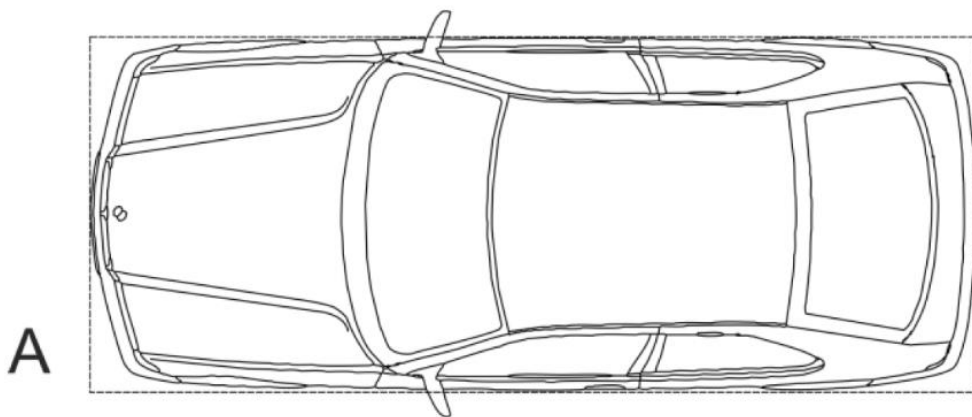


Fig. 2

- a) Protection of the bottom of the car - without restrictions, but must not protrude from the body.

7.8. Interior

- a) The main condition - there can be no sharp, protruding edges, open cavities in the car cabin that could injure drivers during driving or an accident.
- b) Instrument panel - original or made from other materials according to the shape of the original panel.
- c) Additional measuring instruments, counters, sensors without restrictions, but it is prohibited to install mechanical counters, sensors of engine lubrication and cooling systems, following the requirements of point 16.3 of this regulation.
- d) Sound signal - without restrictions, but mandatory.

- e) Communication equipment and video cameras are allowed, but only on the condition that they are well fixed and do not interfere with driving.
- f) Means of communication - mandatory for maintaining contact with the organizers regarding the provision of medical assistance (GSM or satellite phones, radio stations). CB band (27 MHz) radio stations are recommended.
- g) Carpets, pillars and ceiling finishes - without restrictions.
- h) Seat belts are original or sport type seat belts can be fitted. A minimum of four anchorage points, mechanically and/or chemically undamaged safety belts with valid or expired FIA homologation are recommended (FIA standards: 8853/98, 8854/98, 8853-2016). Installation according to the requirements of article 6 of FIA TSK J 283. Original unused seat belts can be removed.
- i) Belt cutter - mandatory. The cutter must be within easy reach of the driver and co-pilot, who are wearing seat belts.
- j) Seats serial (of any brand of car) or sports type seats. Mechanically intact FIA seats with valid or expired homologation are recommended (FIA standards: 8855-1999, 8862-2009, 8855-2021). Installation according to the requirements of article 20 of FIA TSK J 283. Seats not in use during the competition may be dismantled.
- k) Fire extinguishing system is recommended. Installation according to the requirements of FIA TSK J 283 - point 7.1.
- l) Two manual minimum 2.0 kg fire extinguishers or one 4.0 kg fire extinguisher - mandatory. - additional manual minimum is required If a fire extinguishing system is installed, one 2.0 kg fire extinguisher. Installation according to the requirements of FIA TSK J 253 - point 7.2.
- m) First aid kit - mandatory. Must be fully assembled and easily accessible to crew members. The first aid kit must be packed in a waterproof package.
- n) Other interior details - without limitations.

7.9. Towing eyelets

- a) Towing eyes (minimum internal diameter 60 mm) - original or other, but reliably installed in the front and rear of the car. Tow loops can too be formed by drilling a hole in the bottom (engine, transmission) protection. Towing eyes made of webbing are prohibited.
- b) Loops must be easily accessible and clearly visible (painted yellow, red or orange) or/and clearly marked.

7.10. Cranes

- a) No more than one electric winch is permitted to be installed.
- b) The construction of the winch cannot contain more than one: engine, reducer, drum, casing, rope.
- c) The winch must be installed at the front of the vehicle.
- d) A winch extinguishing cloth (only using a metal rope) and a flat tape (no narrower than 50 mm) to protect the bark of trees - mandatory.

7.11. Jacks. Stationary car jacks (car lifting systems) are prohibited.

7.12. Mud guards - recommended.

8. ENGINE

8.1. The engine is original (indicated in the car's original documents by VIN number) or of the same model car, but the engine capacity cannot be greater than that indicated in the table:

Car	Gasoline engine	Diesel engine
ISUZU	3,5 L	3,2 TD
JEEP CHEROKEE (GRAND CHEROKEE)	4,7 L	2,7 TD
JEEP WRANGLER	4,0 L	2,8 TD
NISSAN	3,5 L	3,0 TD
MITSUBISHI	3,5 L	3,2 TD
SUZUKI	1,8 L	2,0 TD
TOYOTA	3,0 L	3,0 TD

8.2. The cylinder block is original.

8.3. The diameter of the cylinders and the stroke of the pistons are original.

8.4. In exceptional cases, due to engine repair (original repair size pistons) it is allowed to exceed the upper limit of the original geometric displacement up to 2 percent, but only for those engines that do not have replaceable cylinder liners.

8.5. Crankshaft - original.

8.6. Connecting rods and pistons (with rings and fingers) - original.

8.7. Crankshaft main and connecting rod liners - no restrictions.

8.8. Flywheel and pulleys - no restrictions.

8.9. The cylinder head is original.

8.10. Valves - original.

8.11. Valve drive (springs, levers, hydraulic compensators) - without restrictions.

8.12. Timing rollers - without restrictions.

8.13. Camshaft sprockets, gears - no restrictions.

8.14. Camshaft drive (chains, belts, tensioners, crawlers) without restrictions.

8.15. The mechanism (system) that changes the angle of the camshafts is original, but may not work.

8.16. The mechanism (system) that changes the opening length of the valves is original, but may not work.

8.17. The cylinder head gasket and bolts are original.

8.18. Engine mounting - no restrictions.

8.19. The lubrication system is original, but it is allowed to install additional coolers.

8.20. The cooling system is original, but the radiator is freely chosen (original location). Installing additional radiators and increasing the volume of the interior heating radiator is prohibited.

8.21. Power system

a) Only air can be mixed with fuel as an oxidizer.

b) The engine intake air vent cannot be installed in the car interior.

c) Air filter box (with diffusers) - no restrictions.

d) Air filter - without restrictions.

- e) Air intake lines before the turbocharger or throttle valve (pipes, hoses) - no restrictions. Additionally, it is allowed to install a snorkel.
 - f) Air flow meter - without restrictions.
 - g) Carburetor - without restrictions.
 - h) Throttle - no restrictions.
 - i) Intake manifold - no restrictions.
 - j) Turbocharger (Supercharger) - No restrictions, but only allowed on original factory installed engines.
 - k) Air intake lines after the turbocharger (pipes, hoses) - without restrictions.
 - l) Intercoolers for intake air - without limitation, including location.
 - m) Nozzles - without restrictions.
 - n) Fuel filters and lines - without restrictions. Installation in accordance with the requirements of point 16 of this regulation.
 - o) Fuel pump(s) - must be installed outside the cabin (clause 2.5). The pump can only be turned on when the engine is running or when it is started.
 - p) The fuel tank is original. Can be moved or replaced if it increases its security. In this case, it is also allowed to use a self-made fuel tank. The fuel tank is fixed in a metal socket with at least two steel hoops, at least 40 mm wide and 1.5 mm thick. FIA homologated fuel tanks are recommended. The fuel tank must be installed outside the cabin (clause 2.5).
 - q) Fuel tank ventilation system and rollover valve - original. If the original system and valve are dismantled, the new system and valve must comply with the requirements of FIA TSK J 283 - point 14.
 - r) Fuel filling hole - must not protrude from the outer contour of the body and cannot be installed in the car interior (point 2.5).
 - s) Tanks (cylinders) of liquefied and/or natural gas - allowed.
 - t) Fuel. Fuels sold at commercial gas stations are allowed, including E85 (bioethanol), LPG and CNG. Accessories of any kind are prohibited.
- 8.22. Exhaust system:
- a) All engine exhaust must enter the main exhaust pipe.
 - b) The outlet of the exhaust gas pipe must be located at the rear or side of the car and must extend around the perimeter of the car (tolerance +30 mm) when viewed from above, and must be under the body no deeper than 10 cm from the edge of the gauge to which the opening is located. Car frame, body or suspension parts cannot be used for exhaust.
 - c) Exhaust manifold - no restrictions.
 - d) Other parts of the exhaust system - without restrictions.
 - e) Maximum exhaust noise level of 103 dB(A) at 3500 rpm for petrol and 103 dB(A) at 2500 rpm for diesel cars, measured according to FIA approved methodology.
- 8.23. Ignition system - without restrictions.
- 8.24. Engine ventilation system - without restrictions.
- 8.25. Engine management
- a) Engine control module (computer) - without restrictions.
 - b) Engine management program - without restrictions.
 - c) Engine control wiring harness - no restrictions.
- 8.26. Other engine parts, mechanisms, and systems - without restrictions.

9. TRANSMISSION

- 9.1. Only four-wheel drive (4x4) transmissions are allowed.
- 9.2. Conversion from two-wheel drive to four-wheel drive is permitted if it does not require a body and frame rebuild and uses stock transmission parts.
- 9.3. Clutch - without restrictions, but can only be single-disc.
- 9.4. Clutch gear (pedal) - without restrictions.
- 9.5. Clutch master and slave cylinders - without restrictions.
- 9.6. The mains can be replaced with aviation type tubes or hoses. It is allowed to pass the trunks inside the body according to the requirements of point 16 of this regulation.
- 9.7. Transmission mounting - no restrictions.
- 9.8. Gearbox - serial. The clutch cover can be modified to fit the engine, but cannot be welded. An adapter can also be used.
- 9.9. The position and orientation of the gearbox is original (except for the change in position due to the adapter used for fixing the gearbox or the changed position of the engine).
- 9.10. The numbers of rail transmissions are unlimited.
- 9.11. Reverse gear - mandatory.
- 9.12. Rail switching mechanism - without restrictions.
- 9.13. Central differential and its control - serial.
- 9.14. Cardan shafts and their joints - without restrictions.
- 9.15. Halfaxle shafts and their joints - without restrictions.
- 9.16. Gearbox (primary gear(s)) - no restrictions.
- 9.17. Differential locks - without restrictions.
- 9.18. Other transmission parts - without restrictions.

10. BRAKE SYSTEM

- 10.1. A dual-circuit braking system is mandatory, controlled by a single pedal and simultaneously acting on the front and rear wheels. In the event of any type of brake failure, the system must brake at least two wheels.
- 10.2. Brake pedal and gear - no restrictions, but the parts must be made of metal.
- 10.3. Brake light switch - mandatory with maintained function.
- 10.4. Brake master cylinder (including fluid reservoir) without restrictions. Can be double (pedalbox type), with an interaxial brake balance regulator. It is recommended to install the brake fluid tanks in the engine compartment. Tanks made of flammable materials installed in the cabin must be covered with a liquid-proof and fire-resistant container.
- 10.5. Brake booster - without restrictions.
- 10.6. Anti-lock brake system - without restrictions.
- 10.7. Brake calipers (calipers) - serial.
- 10.8. Brake discs (drums) - without restrictions.
- 10.9. Brake pads - no restrictions.
- 10.10. Handbrake - without restrictions, but mandatory.
- 10.11. Intermediate brake balance regulator - without restrictions.
- 10.12. The mains can be replaced with aviation type tubes or hoses. It is allowed to pass the trunks inside the body according to the requirements of point 16 of this regulation.
- 10.13. Other parts of the brake system - without restrictions.

11. STEERING MECHANISM

- 11.1. Steering wheels - front.
- 11.2. Steering wheel - without restrictions.
- 11.3. Detachable steering wheel connector - recommended.
- 11.4. Steering gear (shafts and their joints and suspensions) - serial.
- 11.5. Steering lock - may be removed or inoperable.
- 11.6. Steering wheel position regulator - can be dismantled.
- 11.7. Steering column - serial. The position of the column can be changed. Column pendulum - without restrictions.
- 11.8. Steering rods and rod ends - without restrictions.
- 11.9. Power steering (pump, motor, gear and busses) - serial.
- 11.10. Other parts of the steering mechanism are unlimited, but no parts can be made of composite materials.

12. SUSPENSION

- 12.1. The working principle of wheel suspensions is original.
- 12.2. Suspension travel - limited by the length of the shock absorber.
- 12.3. Intermediate axle - original. A tolerance of +50 mm is allowed.
- 12.4. Springs (springs, torsions) - without restrictions, but the details and the original position of the details must be maintained. Brackets ("earrings") for fixing the slats cannot be longer than the original bracket ("earring") by more than 50 mm.
- 12.5. Shock absorbers without restrictions, but cannot be more than 50 mm longer than the original shock absorber. More than one shock absorber may not be installed per wheel.
- 12.6. Hydraulic dampers ("boom stop") - prohibited.
- 12.7. Upper supports of suspension shock absorbers (MacPherson type suspension) - without restrictions.
- 12.8. Wheel bearing elements (including bearings, hubs) - serial (can be reinforced).
- 12.9. Levers without restrictions, but must fully match the shape of the original lever and all mounting points.
- 12.10. Bridges are serial (can be reinforced). The attachment points of the shock absorbers can be reinforced and/or moved only in the vertical direction up to 50 mm. Overturning bridges is prohibited.
- 12.11. Stabilizers and their connections to the suspension - without restrictions.
- 12.12. The material of the suspension fixing elastic parts - without restrictions.
- 12.13. Suspension beams (travers) - serial (can be reinforced).
- 12.14. The suspension attachment points are original (can be reinforced). The attachment point of the wishbone can be moved.
- 12.15. Active suspension - prohibited.
- 12.16. Other suspension parts - without restrictions, but they cannot be made of composite materials.

13. WHEELS

- 13.1. The wheels cannot protrude from the fenders, except in cases where the wheels are turned with the help of the steering mechanism, or the suspension of the wheels is damaged.

- 13.2. Wheel fastening - serial fastening with bolts can be replaced by fastening with studs and nuts. Wheels fixed with a central screw (nut) are prohibited.
- 13.3. Wheel height (wheel measured horizontally at 0.5 Bar tire pressure) not more than 840 mm (33¹).
- 13.4. Rims - serial.
- 13.5. Tires - cannot be wider than 355 mm. Agricultural and special vehicle tires are prohibited. Modification of the tire tread is prohibited.
- 13.6. Fixing the tire to the rim is allowed (except for the external "beadlock").
- 13.7. Automatic tire inflation - prohibited.
- 13.8. Spare wheel - optional.

14. LIGHTING AND ELECTRICAL EQUIPMENT

- 14.1. External car lighting devices - original or analogue, corresponding to the size and shape of the original lights (may not be certified).
- 14.2. In night sections, at least one rear fog lamp (minimum 21W or LED of similar light intensity) is required, which is installed no lower than 1500 mm from the ground.
- 14.3. Additional lights - unlimited.
- 14.4. Generator - no restrictions, but only one generator connected to the engine can be installed.
- 14.5. Starter - without restrictions.
- 14.6. Battery - without any restrictions. When moving the battery from its original location, following the requirements of FIA TSK J 285 - point 10.3. A maximum of two batteries can be installed in a car.
- 14.7. Cable braids - without restrictions, but they are installed in accordance with Article 16 of this regulation point requirements.
- 14.8. ABS, ESP and similar auxiliary electronic systems - without restrictions.
- 14.9. 12V socket - mandatory.
- 14.10. Other details of lighting and electrical equipment - without restrictions.

15. MAIN ELECTRICAL CIRCUIT (GROUND) SWITCH

- 15.1. The main electrical circuit (ground) switch is mandatory. Installation and use according to the requirements of Article 13 of FIA TSK J 283.
- 15.2. Winch emergency switch - recommended.

16. ELECTRICAL WIRES AND PIPES - original or made according to this article:

- 16.1. Fluid (oil, fuel and hydraulic) lines outside the vehicle must be protected from mechanical damage and corrosion. Fuel and hydraulic lines in the car cabin must be protected from mechanical damage and fire.
- 16.2. For connecting fuel, lubricating oil and hydraulic fluid flexible pressure lines, threaded, press-on or self-locking - sealing connections must be used.
- 16.3. Cooling and lubrication oil lines are prohibited in the car interior. If fuel and/or hydraulic fluid lines are routed in the car cabin, they may not have any connections, except for:

connections for passage through firewalls to engine or trunk compartments, connections in brake and clutch lines.

16.4. In places where pipes or cables cross firewalls, the edges of the openings must be covered with protective materials.

16.5. In the spaces between the car's safety hoops and the body, cables and pipelines are prohibited.

17. EQUIPMENT

17.1. Racers' equipment. Full-body clothing and footwear made of cotton or nonflammable fabrics are mandatory. FIA homologated equipment is recommended. Crew members are also required to wear brightly colored vests with reflective patches (vests are optional if reflective elements are integrated into the outfit).

17.2. Helmets - must be helmets certified for motorcyclists or motor sports (FIA, SFI, SNELL, ECE or others). Helmets for rafting (EN1078, EN1077) and mountain biking (SNELL B90) are also allowed. Only elements of communication equipment are allowed to be attached to helmets.

17.3. Head restraint systems (HANS, HYBRID). FIA homologated head restraint systems are recommended (FIA standards: 8858-2002, 8858-2010).

*** This document has been translated from Lithuanian. If there are any sections that are difficult to understand, please refer to the original Lithuanian version.**