

“LADA CLASSIC CUP” TECHNICAL REGULATIONS

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Disclaimer

This is a *bona fide* translation of the original document approved by the Latvian Automobile Federation. However, in case of discrepancies the original text in Latvian shall prevail. In case of any questions, please contact the organizer of the competition.

1. General provisions

- 1.1. These regulations (hereinafter referred to as “the Regulations”) are binding and applicable from January 1, 2017 until amendments are officially announced.
- 1.2. FIA International Sporting Code (Appendix J) is applicable only if the Regulations contain a direct reference to specific paragraph.
- 1.3. Every competitor must be able to prove to technical commission (scrutineers) and competition stewards that their car fully complies with the Regulations at any time during the competition.
- 1.4. All technical changes that are not expressly allowed by the Regulations, are prohibited. Allowed changes cannot contain or cause prohibited modifications. The Regulations contain provisions regarding all allowed changes.
- 1.5. Use of titanium, magnesium, ceramic, composite or any fiber material is prohibited in the suspension and in the supporting structure of the car's body. The use of building foam (makroflex etc.) is prohibited.

2. Cars that are included in the LADA CLASSIC CUP group and their classes

- 2.1 LADA CLASSIC CUP group cars are divided in two classes:
 - 2.1.1 **LADA 1600** class includes rear wheel drive LADA (VAZ) 2101-2107 cars and their modifications with engine displacement up to 1600 cm³ that comply with the Regulations;
 - 2.1.2 **LADA OPEN** class includes rear wheel drive LADA (VAZ) cars and other rear wheel drive cars that have been produced in the Soviet Union (Moskvitch, ZAZ, IZH etc.), and cars that are regarded as technically analog to LADA (VAZ) models – FIAT 124, SEAT 124, Murat 124, Polski Fiat 125 etc. that comply with the Regulations. The organizer can allow a car that has not been expressly mentioned in this paragraph to participate in LADA OPEN class if the car complies with the idea and the spirit of LADA CLASSIC CUP. The maximum engine displacement allowed is 2000 cm³, other car manufacturer engines can be used even if they have never been used by the vehicles manufacturer. It is allowed to use turbocharged and supercharged engines. In such case engine displacement is calculated by multiplying the engine geometrical displacement with a coefficient of 1.7 (for gasoline engines) or 1.5 (for diesel engines).
- 2.2 It is allowed to exceed the maximum engine displacement set in paragraph above by no more than two percent.
- 2.3 Vehicles must comply with rules and regulations for their use on public roads in the Republic of Latvia.
- 2.4 Vehicles must have FIA, LAF or other ASN issued sporting vehicles certificate of registration or FIA issued certificate of historic sporting vehicle (homologation). The documents mentioned in this paragraph shall be presented in the pre-start scrutineering.

3. Definitions

- 3.1 Vehicle – a car or its modification that is listed by FIA or ASN in homologated car register according to officially approved parameters or industrially manufactured vehicle with at least four wheels, passenger compartment and engine that provides propulsion.
- 3.2 Base model – car model, including all its modifications, that has been manufactured at a defined period of time and has its own manufacturer code (marking).

- 3.3 Passenger compartment – manufacturers designated place for driver and passengers, that has a firewall with engine compartment and firewall (including shelf below rear window) with boot space. For cars with a hatchback type body, the passenger compartment also includes the boot space.
- 3.4 Not limited – a car component can be machined, transformed or changed with other component. There is also no limitation for material, shape and number of the components. The component can be dismantled completely.
- 3.5 Series production part – car component without changes as installed by car manufacturer or as supplied to manufacturer by the producer of the part.
- 3.6 Mechanical components – parts and components that are necessary for cars motion and suspension work, as well as for normal car operation, with the exception of steering and brake system parts and components.

4. Cars that are not allowed to participate in LADA CLASSIC CUP classification

- 4.1 Cars that do not comply with the Regulations.
- 4.2 Cars in which construction or equipment the technical commission or the scrutineers have found technical defects that can cause danger to the crew, third persons or third person property.

5. Engine

- 5.1. Engine cylinder block:
 - 5.1.1 In LADA 1600 class only the following cylinder blocks with the following part numbers are allowed:
 - 2101, part number 2101-1002011 (initial cylinder diameter 76 mm);
 - 21011, part number 21011-1002011 (initial cylinder diameter 79 mm);
 - 2103, part number 2103-1002011 (initial cylinder diameter 76 mm);
 - 2105, part number 2105-1002011 (initial cylinder diameter 79 mm);
 - 2106, part number 2106-1002011 (initial cylinder diameter 79 mm).
 - 5.1.2 In LADA OPEN class the cylinder block is not limited.
- 5.2 The engine capacity can be altered by changing the cylinder diameter and the stroke of the crankshaft. It is allowed to install cylinder liners even if they have not been used by the manufacturer. The machining of the cylinder block is not limited. In LADA 1600 class the maximum diameter of the cylinder is 80.00mm, disregarding the natural wear of the surface.
- 5.3 Crankshaft – not limited as long as the main bearing type and number is maintained.
- 5.4 Other parts of the crank – rod mechanism, including pistons, piston rings and pins are not limited.
- 5.5 Lubrication system – not limited.
- 5.6 Cylinder head:
 - 5.6.1 In LADA 1600 class it is allowed to use only series production cylinder heads, including 21213 and 21214 type cylinder heads. Machining, including welding is allowed.
 - 5.6.2 In LADA OPEN class the cylinder head is not limited.
- 5.7 Gas distribution mechanism is not limited:
 - 5.7.1 drive of the camshafts – not limited;
 - 5.7.2 number of valves and their location (except the distance between the axes) must be maintained. Valves and valve springs – not limited.
- 5.8 Intake system – not limited as long as restrictions set in other articles of the Regulations are followed.
- 5.9 Only atmospheric air can be mixed up with fuel as its oxidizer.

- 5.10 In LADA 1600 class it is allowed only to use fuel that can be freely obtained in public gas stations, maximum octane allowed is 98 (RON). It is forbidden to use E85 type fuel. In LADA OPEN class it is allowed to use racing fuel that complies with the FIA regulations.
- 5.11 Ignition system – not limited.
- 5.12 Cooling system – not limited, but it is not allowed to install its components in the passenger compartment, except the heater.
- 5.13 Other engine components – not limited.
- 5.14 The starter motor – not limited.

6. Exhaust system and the exhaust noise

- 6.1 Exhaust manifold – not limited, but all exhaust gases must reach the main exhaust pipe.
- 6.2 The exit of the exhaust pipe must be situated at rear of vehicle.
- 6.3 The end of exhaust pipe must be located between 45 cm and 10 cm from the ground. The exhaust systems end opening must be located inside of perimeter of the vehicle, but not more than 10 cm from it, and backwards from vertical axial plane that goes through center of the wheelbase. Proper protection must be installed to prevent heated pipe influenced inflammation. Exhaust system cannot be provisional. Exhaust gases may come out from exhaust system only from system's end opening (-s). Chassis parts cannot be used for exhaust gas flow.
- 6.4 The maximal noise level of exhaust is 103 dB, measured by FIA approved methodology at 3500 rpm/min.

7. Transmission

- 7.1 Clutch and its drive – not limited.
- 7.2 Gearbox must be located in the front of the car together with the engine.
- 7.3 In LADA 1600 class a series production gearbox housing must be used, and the gearbox must be equipped with H-pattern gear shifting mechanism. It is allowed to use dog-box type gearboxes.
- 7.4 In LADA OPEN class the type of gearbox, its manufacturer and shifting mechanism are not limited.
- 7.5 Reverse gear is mandatory.
- 7.6 Gears, shafts, bearings, differential – not limited.
- 7.7 In LADA OPEN class it is allowed to transform the car's body to install the gearbox, but the transformations cannot exceed the actual needs of gearbox installation.
- 7.8 The driveshaft and it's joints, axle-shafts – not limited.

8. Braking system

- 8.1 Double circuit braking system that simultaneously operates both front and rear wheels with the same pedal is mandatory.
- 8.2 The handbrake is mandatory, it must operate two wheels either in front or rear axle. Hydraulic handbrake is allowed. It is allowed to remove handbrake lever fixation mechanism.
- 8.3 Other braking system components – not limited. It is allowed to install the brake force regulator to adjust brake bias between front and rear axles. The brake pedal, its axle and master cylinder pushrod must be made from steel. Lightweight metal components must be proofed by a certificate of origin.
- 8.4 All braking system components must be industrially manufactured.
- 8.5 It is allowed to detach and to dismount as well as to install the vacuum power booster of the braking system.
- 8.6 Carbon fiber composite material brake discs and brake pads are forbidden.

9. Steering system

- 9.1 Locking device of the steering wheel must be removed.
- 9.2 The power steering can be installed, unlocked or dismantled, including all parts that are related to the power steering.
- 9.3 The steering mechanism, steering shaft and joints are not limited, but they must be industrially manufactured.

10. Suspension

- 10.1 Springs, anti-roll bars – not limited.
- 10.2 Shock absorbers:
 - 10.2.1 In LADA 1600 class it is forbidden to use shock absorbers with external reservoirs, it is forbidden to combine springs with the shock absorbers;
 - 10.2.2 In LADA OPEN class shock absorbers – not limited.
- 10.3 Front suspension arms (“wishbones”) – not limited.
- 10.4 Suspension joints and suspension attachment points – not limited. It is allowed to add additional suspension parts and joints, changing the car’s body as necessary for installation. These changes must not reduce the rigidity of the structural elements of the car’s body.
- 10.5 Rear axle:
 - 10.5.1 In LADA 1600 class – not limited, as long as the live rear axle construction and principle of operation is maintained.
 - 10.5.2 In LADA OPEN class – not limited.

11. Wheels and tires

- 11.1 Wheels and tires must comply with requirements set in paragraph 255, article 5.4 of the Appendix “J” of the FIA International Sporting Code.
- 11.2 Spare wheel is not mandatory, but in case it is installed in the car, it must be fastened securely.
- 11.3 Tires allowed in specific competition are laid down in the supplementary regulations of the competition.
- 11.4 Wheels entirely or partially made from composite or magnesium are forbidden.
- 11.5 Decorative hubcaps must be removed.

12. The bodywork and chassis

- 12.1 Series production bodywork and chassis can be strengthened or lightened according to the following rules.
- 12.2 Components that are used for engine, transmission, steering system, braking system or suspension anchorage can be strengthened, but not lightened.
- 12.3 If aluminum or plastic (fiber material) bodywork panels are used, their homologation documents must be presented to the technical commission. The exceptions are wings, engine bonnet, boot lid, and aerodynamic elements. The overall shape of the series production bodywork must be retained and must be recognizable.
- 12.4 It is forbidden to cut out big parts from body work. The firewall between the passenger compartment and the engine bay must be retained, except modifications made according to paragraph 9 of these Regulations.
- 12.5 It is allowed to dismantle noise insulation and the decorative trim inside the passenger compartment. The front door series production trim may be changed with at least 1.0 mm thick aluminum or steel sheet, or at least 2.0 mm thick carbon or composite (fiber material) sheet. It is allowed to remove all decorative elements.
- 12.6 The front grill can be modified or substituted, but it is mandatory.
- 12.7 It is allowed to remove the bumpers. In such case the bumper mounting brackets must be removed as well.

- 12.8 The floor can be modified for exhaust system, transmission or suspension element installation, but the floor level cannot be raised higher than the upper side skirt edge of the base model.
- 12.9 It is allowed to use metal or composite material skid plates. Elastic materials (rubber etc.) cannot be used for exhaust system protection.
- 12.10 It is allowed to change the dashboard by installing additional switches and dials. It is allowed to dismount the central console.
- 12.11 It is allowed to install passenger compartment ventilation devices (hatches) on the car's roof, provided that construction excludes possibility that any subject or water can reach competitors (driver and co-driver) when they are normally sitting in the seats and are properly buckled up.
- 12.12 Only the following equipment can be placed in the passenger compartment: spare wheels, tools, spare parts, safety equipment, communication devices and water container for windshield washer. The containers for helmets and instruments that are mounted in the passenger compartment must be made from non-flammable material and may not create poisonous gases when affected by flame. All equipment in the passenger compartment must be installed backwards from the vertical plane that goes through the most backward points of competitor seats.
- 12.13 No part of the car shall touch the ground, if both tires on one side of car are flat. Inspection of the abovementioned is carried out on flat surface for competition prepared car (driver and co-driver are at their seats).

13. Doors, engine bonnet, boot lid

- 13.1 The door coverings must cover all mechanical parts installed inside the doors, including door locking and window lifting mechanisms and their drives. It is allowed to remove window lifting mechanism when plastic windows are used, but then it is mandatory to have communication openings in the front door windows.
- 13.2 It is allowed to change the drives of the door lock, retaining the standard production door lock mechanism.
- 13.3 Engine bonnet and boot lid material and hinges are not limited. The standard production locking mechanisms must be deactivated or dismantled. At least two additional locking devices (fittings) must be installed for each of the abovementioned panels.

14. Wings

- 14.1 It is allowed to broaden the wings up to 50 mm to each side of the car, compared to series production car (base model). The wing material under the broadening panels can be cut out. The overall shape of the wheel arches must be preserved, but not their size compared to the base model. The inner part of the wheel arches can be changed, but it cannot be cut out completely.

15. Aerodynamic devices

- 15.1 Aerodynamic devices (spoilers) that are placed lower than plane that goes through wheel centers – not limited, but in the front and in the back of the car, looking from side, the spoiler together with its mounting brackets must fit in square 20x20 cm.
- 15.2 Looking horizontally from the front and vertically from the top, spoilers must fit in the base model bodywork shape. Exceptions are series production spoilers and homologated spoilers.
- 15.3 All series production car (base model) aerodynamic devices can be removed.

16. Windows

- 16.1 The windscreen of the vehicle may only be made from multilayer triplex type glass.
- 16.2 The front door windows must be made from "securit" type glass. They can also be made from transparent plastic that does not make sharp edges (PVC, polycarbonate).

- 16.3 If the standard production front door windows are used, they must be coated with adhesive transparent (not-tinted) security film on the inner side of the window.
- 16.4 Rear door, rear side and boot lid windows can be substituted with transparent plastic that does not make sharp edges (PVC, polycarbonate).
- 16.5 The minimal thickness of all plastic windows is 3.0 mm.

17. Electrical wires and piping

- 17.1 Electrical wires and pipes must be securely fastened, and if they are fitted close to each other, one of them must have additional insulation. It is allowed to change wiring and piping, including their location. It is allowed to install pipes in the passenger compartment (except hot liquid pipes, unless it is provided by manufacturer in the standard production car).
- 17.2 Fuel pipes if they are installed in the passenger compartment must be either made from metal or a hose with metal protection layer can be used, only threaded connections are allowed.
- 17.3 In places where pipes go through parting panels (firewalls), the edges of the holes must be padded for protection of the pipes. The same rules are applicable to electrical wires/wire looms.
- 17.4 All electrical wires and pipes (except the windscreen washer piping) in the passenger compartment must be fitted in the inside of the roll cage, they cannot be installed between the body and the roll cage.

18. Electrical system

- 18.1 The nominal voltage of the electrical system, including that of the supply circuit of the ignition, must be retained.
- 18.2 It is allowed to add wires, relays and fuses to the electrical circuits. It is allowed to lengthen electric cables. Electrical cables and their connections are not limited.
- 18.3 Alternator and voltage regulator – not limited.
- 18.4 The manufacturer and the capacity of the battery are not limited. Each battery must be securely fastened and covered to exclude leakage or shortages. If the battery is removed from its standard production position, it must be attached to the body using two metal belts with insulating covering, fixed to the car's floor with bolts and nuts. Bolts with diameter of at least 10 mm must be used, and under each bolt, a metal plate at least 3 mm thick and with surface of at least 20 cm² on the other side of the metal of the bodywork must be used. Liquid filled batteries must be covered with leak proof plastic box.

19. Lighting and signals

- 19.1 All lighting and signal devices must comply with applicable traffic laws.
- 19.2 Indicators and parking lights can be modified, but in such case the standard production gaps in the bodywork must be covered.
- 19.3 Manufacturer of the lighting devices – not limited.
- 19.4 Standard production headlamps can be substituted with other fully functional lighting devices, if the installation is possible without cutting out of the body material and if standard production headlight gaps are covered with solid material plate.
- 19.5 Lighting of the rear registration number plate is mandatory.

20. Fuel tank and fuel system

- 20.1 Fuel tank and fuel system must be maximally protected from damage in case of an accident.
- 20.2 Electrical fuel pumps may only work while the engine is running or is being started.
- 20.3 It is allowed to use only the following fuel tanks:
 - 20.3.1 standard production fuel tank;

- 20.3.2 industrially manufactured fuel tanks that have been installed in any other vehicle as a series production part;
 - 20.3.3 fuel tanks that comply with FIA FT3, FT5 or FT3.5 standards. It is allowed to use the abovementioned fuel tanks 5 years after their expiry (validity) date, provided that the technical commission has not found circumstances that could affect the safety of the competitors;
 - 20.3.4 custom built fuel tanks that have been made from at least 2mm thick aluminum or steel.
- 20.4 Fuel tank must be securely fastened with at least two metal belts, each being at least 40mm wide and 1.5mm thick.
 - 20.5 If a fuel tank, mentioned in the articles 20.3.2-20.3.4 of the Regulations are used, it must be placed in the car's boot space between the rear longitudinal members at least 30 cm from the rear panel. In such case the metal belts mentioned in paragraph 20.4 must be fitted to the floor of the boot with at least 10 mm bolts. Under each bolt at least 3 mm thick metal plate and with surface of at least 20 cm² on the other side of the metal of the boot must be used.
 - 20.6 Fuel filler caps position is not limited, however it is not allowed to install it in the window panels and it cannot range over the shape of the bodywork.

21. Roll cage

- 21.1 A roll cage compliant with paragraph 253, article 8.3 of the Appendix "J" of the FIA International Sporting Code must be installed in all vehicles.
- 21.2 In places where the competitor helmets can touch the roll cage elements, the roll cage must be covered with elastic padding material in compliance with FIA technical list No.23.

22. Safety harness and seats

- 22.1 Safety harness must have a valid FIA homologation and must comply with FIA standard No.8853/98 or 8854/98. During competition there must be two knives designated for cutting the harness. They must be easily accessible to pilot and co-driver when they are normally sitting in the seats and are buckled up with safety harness.
- 22.2 It is forbidden to use safety harnesses that have visible damage in the belt material or connections.
- 22.3 Safety harnesses must be installed according to paragraph 253, article 6.2 of the Appendix "J" of the FIA International Sporting Code.
- 22.4 Seats must have a valid FIA homologation (standard 8855/1999 or 8862/2009) and they cannot be modified. A seat is valid for 5 years from its production date, shown on the label for 8855/1999 homologation seat or 10 years from production date, shown on the label for 8862/2009 homologation seat. It is allowed to participate with fiber material seat 5 years after its expiry (validity) date, provided that the technical commission has not found circumstances that could affect the safety of the competitors.
- 22.5 Seats must be installed according to paragraph 253, article 16 of the Appendix "J" of the FIA International Sporting Code.

23. Fire extinguishers

- 23.1 Cars must be equipped with either fire extinguishing system with additional handheld unit or at least two handheld fire extinguisher units containing no less than 4 kg combined of ABC class or other FIA accepted reagent.
- 23.2 Fire extinguishing system can be automatic or hand operated, but it is only allowed to use FIA accepted jets. It is allowed to use only metal pipes and joints or FIA accepted plastic components. The reagent must be divided between the engine bay and passenger compartment in a proportion 1:1.

- 23.3 Fire extinguishers installed in the car must be easily accessible to the pilot and the co-driver, and they must be equipped with pressure manometer for their functionality control. Extinguishers must be securely fitted with quickly releasable metal belts capable to withstand an impact of 25 G. The fitting system must contain a counter-slip element, all materials used must be operation-worthy in temperatures from -15°C to +80°C. The balloons of the fire extinguishing system must be fitted with non-releasable metal belts that comply with the abovementioned rules.
- 23.4 On each fire extinguisher the following information must be showed:
- 23.4.1 type of the reagent;
 - 23.4.2 mass or volume of the extinguisher;
 - 23.4.3 verification date of the extinguisher (verification must be made no more than two years ago).

24.Firewalls

- 24.1 There must be metal firewalls, separating the engine bay and the boot space from passenger compartment.

25.Main (central) circuit – breaker switch

- 25.1 The main circuit – breaker switch must stop all electrical systems in the vehicle – when it is switched off, no electrical auxiliary can operate and a running engine must stall immediately.
- 25.2 The main circuit-breaker must be easily accessible to the crew (while sitting normally, with fastened safety harness) and also from outside.
- 25.3 The circuit-breaker switch outside of the car must be situated close to windscreen`s left or right lower corner, and it must be marked with a red lightning in a white-edged blue triangle. The edges of the triangle must be at least 10 cm long.

26.Crankcase ventilation

- 26.1 If the standard production crankcase ventilation system is changed, the crankcase breather must be inserted into closed oil separation container. Container`s capacity must be no less than 2 liters, and this container must be placed stationary in the engine bay. The container must have a ventilation pipe with its opening outside of the engine bay. The system must guarantee that there are no oil leaks while the car is in any position (upside down or on either of its sides).

27.Towing eyes

- 27.2 All cars must be equipped with at least with one strong enough towing eye in the rear and in the front of the car. Instead of a towing eye a strong enough flexible metal loop can be used.
- 27.3 There must be visible signs on the car showing where the towing eyes are placed. These signs as well as the towing eyes themselves must be in a contrasting color – red, orange or yellow.

28.Rear view mirrors

- 28.1 The inside rear view mirror is not mandatory.
- 28.2 There must be two door mirrors – one on each side of the car. Their mirror surface must be at least 90 cm³ for each of them, and in any case a 6x6 cm square must fit on the mirror surface. Technical commission can check rear visibility in case of uncertainty.

29. Additional safety guidelines

- 29.1 It is allowed to use only homologated titan, kevlar or carbon fiber parts, excluding covering panels in the passenger compartment and engine bay.

30. Safety equipment requirements for the LADA CLASSIC CUP crew

30.1 Helmets

During competition it is allowed only to use FIA homologated helmets.

30.2 Head protection system „HANS”

For all competitors younger than 21 years old the “HANS” system is mandatory.
For other competitors the “HANS” system is strongly recommended.

30.3 Racing suits

30.3.1 Racing suit must comply with FIA 8856 – 2000 standard or the FIA 86 standard (provided that FIA 8856-2000 standard fireproof full body underwear is used, including socks, shirt with long sleeves, and pants).

30.3.2 FIA CIK homologation racing suits are not allowed.

30.4 Fireproof underwear

30.4.1 FIA 8856-2000 standard full body underwear is mandatory if FIA 86 standard racing suit is being used.

30.4.2 Fireproof underwear is not mandatory (is recommended) if FIA 8856-2000 standard racing suit is being used.

30.4.3 FIA 8856-2000 standard balaclava is mandatory for all competitors.

30.5 Racing shoes

30.5.1 FIA 8856-2000 standard racing shoes are recommended.

30.5.2 FIA 86 standard and FIA CIK homologation racing shoes are allowed.

30.6 Gloves

The pilot must use racing gloves that comply with FIA 8856-2000 or FIA 86 standard.

30.7 General reminder

Considering that the information concerning the safety equipment is regularly updated, it is recommended that the competitors followed the publications in the FIA web page in section SPORT, subsection HOMOLOGATIONS, chapter TECHNICAL LISTS – <http://www.fia.com/regulation/category/761>.