



Bulletin 2023-1 Rally Technical Rule Changes for 2023

9/12/2022

The following changes to the ARA Rally Technical Rules are effective for the 2023 championship season and in place in the 2023 RTR book.

All technical exemptions are void at the end of the 2022 season and must be resubmitted for consideration.

2.1 Definitions

Original Equipment (OEM)

Original equipment is defined as all items of standard or optional equipment that could have been ordered with any particular bodywork variant of the model, installed on the factory production line, and delivered through a dealer or motor vehicle manufacturer, in the U.S.A. This does not include special orders, “one-offs” or pre-production vehicles. Dealer installed options, except as required by manufacturer directives (no matter how common), are not included in this definition.

Production (Based)

A vehicle or components produced by a motor vehicle manufacturer for public road use.

Rear Fender

The body side rearward of the rear most door cut line and below the lower edge of the visible part of rear side window and rear window to where it meets the rear bumper.

Vehicle Weight

The real weight of the car without the occupants or their worn safety gear and with only one (1) spare wheel. Vehicles may be weighed at any point during the event.

Wheel

The complete rim and tire as combined.

Rationale: Several definitions required updating or additions for the rule updates. Weighing will now only be done with one spare wheel in the car. This is to clarify how the vehicle's weight is defined.

2.2.9 Towing eyes

Towing eyes shall be attached to the front and rear of the vehicle and painted in yellow, red or orange. If under the car, the location shall be identified by a fluorescent arrow. It is highly recommended the tow points be rated to double the car weight, since it may be used to recover the vehicle.

Rationale: It has been found many towing eyes are unacceptable for recovering vehicles, so additional consideration should be used when choosing a towing eye.

2.3.5 Fire extinguishers

- a.ii.2) Each must be installed to be easily accessible. ~~inside the passenger compartment.~~
During installation, consideration must be given to quick release and security of attachment.
- b) ~~If a dry powder unit is used,~~ The unit must bear certification, from a certified fire extinguisher inspector, that it has been serviced annually or per the FIA/SFI requirement. All extinguishers shall be equipped with a visible indication of the state of charge. All extinguishers shall be approved for vehicular use by the DOT, U.S. Coast Guard, SFI or FIA.

Rationale: It is more important for the fire extinguisher to be accessible rather than in the passenger compartment. Also, clarifies the certification requirements.

General Regulation Changes

3.1.1 Production-based

- a) Must be a production-based chassis.
- b) Other than allowances within the rules, the bodywork must be original in appearance to OEM.
- c) All vehicle measurements will be done in whole millimeters +/- 1%. Any digits to the right of the decimal will be dropped.
- d) Competitor must declare vehicle year, make, model, and variant for dimensions used.
- e) Front door openings shall remain unmodified
 - Including width of chassis, height of opening, and length of opening
 - Measured at pinch weld of opening
- f) Rear luggage opening shall remain unmodified
 - Including location, size, and shape
 - Measured at pinch weld of opening
- g) Windshield base and angle must remain in OEM position and angle
- h) Bumpers and fascias are to be made from rigid materials.
- i) Detachable decorative elements (trim, mesh, etc) may be replaced with a flat surface following the form of the part.

3.1.2 Factory Floor Pan and Firewall

Must retain a factory floor pan and firewall, modifications for alternate components is allowed.

~~3.1.4~~ 3.1.3 Good Appearance

~~3.1.2~~ 3.1.4 Bumper Location

~~3.1.3~~ 3.1.5 Tires Covered

~~Tires must be fully covered when viewed from above. The upper part of the wheel located above the wheel hub center must be covered by the bodywork when viewed in plan view.~~

3.1.4 3.1.6 Wings, Plates, and Additions to Bodywork

- a) Wings, their elements, and mountings must not extend beyond the body as viewed in plan view nor extend above the roof line more than 76 mm when viewed directly from the side. Wings, their elements, and mountings are not considered part of the plan view in any case and may not define it. Wing end plates must be a minimum section of 3mm.
- ~~b) Devices or additions forward of the windshield must be below the line of the hood when viewed from the side. They cannot define the plan view and must fall within it.~~
- b) Any aerodynamic plates or element extending from major body surfaces must have a 10 mm minimum section width at outside edge.
- c) ARA technical inspectors reserve the right to refuse any bodywork or aerodynamic component based on safety concerns.
- d) Any moveable element adjustment is only allowed from outside the vehicle while the car is stationary.
- e) Only one rear wing is permitted with one main horizontal profile. The main horizontal profile is defined by air passing above and below the profile.
- f) OEM wings that do not meet these requirements may be submitted for consideration.

3.6.2 Vehicle Eligibility

The vehicle must be based on a model built by a recognized motor vehicle manufacturer. It is the intent of these rules that all vehicles be based on production vehicles built for public road use. Eligibility is restricted to street-licensed, closed-bodied vehicles. Non-production-based vehicles built from the ground up, are explicitly prohibited.

Rationale: Most of the changes pertain to bodywork restrictions and clarifications. The restrictions to bodywork are to rein in aerodynamic performance levels and enable better enforcement.

Changes to the Open Classes (O4WD, O2WD, NA4WD)

4.1.2 Production-Based: Moved to 3.1.1

4.1.3 Body Panels: Moved to 3.1.2

4.1.4 4.1.2 Body Panels Exterior Bodywork

- a) All bodywork changes from OEM must be submitted to ARA Technical Director for approval a minimum of 45 days before start of event and approved by ARA before being used in competition.
- b) Roof, A & B pillars must be metallic and retain factory profile. C pillars must retain factory profile.
- ~~c) Fenders and quarter panels may be modified or replaced but must cover tires completely as viewed from above.~~
- ~~d) Bumpers and fascias are to be made from rigid materials.~~
- ~~e) The radiator opening of the front bumper and fascia may be enlarged or reduced. Additional openings in the front bumper or fascia may be added for the sole purpose of providing cooling air flow to the front brakes or auxiliary heat exchangers located in the front engine compartment.~~

c) Front Fascia/Bumper

- The basic shape of the front fascia must be the same in appearance to OEM, other than the permitted variances. No elements (such as dive planes) may be added or enlarged/reduced.
- The lateral part of the front fascia may be widened only in order to align with the widening of the front fenders.
- Front grilles may be removed and/or replaced with wire mesh.
- The lowest 100mm of the front bumper may not protrude beyond the portions immediately above when viewed in a vertical projection. The lowest 100mm of the front bumper may be detachable, but must be designed as a flat strip.
- The radiator opening of the front bumper and fascia may be enlarged or reduced. Additional openings in the front bumper or fascia may be added for the sole purpose of providing cooling air flow to the front brakes or auxiliary heat exchangers located in the front engine compartment. Openings may be covered with a wire mesh.

d) Rear Bumper

- The basic shape of the rear bumper must be the same appearance to OEM, other than the permitted variances. No additional elements may be added on or below the bumper. Additionally, elements may not be enlarged/reduced.
- The lateral part of the rear bumper may be widened only in order to align with the widening of the rear fenders.
- A modification of the original cut-out for the exhaust, or to create a cut-out specifically for the exhaust, is authorized. No additional openings or vents are permitted.

e) Front Fender

- The basic shape of the fender must be the same in appearance to OEM, other than permitted variances.
- The fender may be widened in the vicinity of the wheel opening to meet the RTR 3.1.3 requirements. This may be obtained by means of an extension or a new part may be created. Changes must be for the sole purpose of covering the wheel.
- No additional air intakes or outlets are permitted
- The addition of aerodynamic elements is not permitted.

f) Rear Fender

- The basic shape of the fender must be the same in appearance to OEM, other than permitted variances.
- The fender may be widened in the vicinity of the wheel opening to meet the RTR 3.1.3 requirements. This may be obtained by means of an extension or a new part may be created. Changes must be for the sole purpose of covering the wheel.
- No additional air intakes or outlets are permitted.
- The addition of aerodynamic elements is not permitted.

g) Rear Doors

- Localized modification of the rear doors is authorized only to allow the passage of the rear wheel or the additional of an extended wheel arch flare to work in conjunction with modifications to the rear fender.

h) Engine Cover

- Additional openings in the engine cover are permitted, but must be covered by wire mesh. Louvers and trim surrounding these openings cannot extend more than 15mm above the hood surface.
- OEM hood scoops may be enlarged, reduced, or removed. In regards to enlarging or reducing, the hood scoop design must be the same as OEM with only changing the size of the hood scoop.
- Cowl induction style hoods may be permitted but must be submitted to the ARA for approval a minimum of 45 days before the start of event.

i) Underbody Protection

- Underbody protection may be added provided it intends to serve no other purpose.

4.1.5 4.1.3 Wheelbase, Overhang, and Widths

- a) Wheelbase may not be modified more than 75mm +/- from factory specification.
- b) Total vehicle length not to exceed OEM length plus 3%
- c) Front overhang not to exceed OEM plus 7%
 - Measured from centerline of front wheels forward

- d) Rear overhang not to exceed OEM plus 7%
 - Measured from centerline of rear wheels rearward
- e) Total width not to exceed OEM width plus 10 %
 - Measured at any point.
 - Total width not to exceed 2000 mm in any case including mirrors
- f) ~~The front air dam~~
 - ~~May be modified by downward or forward extension.~~
 - ~~May extend no more than 60 mm forward of the furthest point forward of the front bumper face at any point.~~
 - ~~Must fit within the front overhang and total length percentages and may be no wider than the front fenders.~~
- g) ~~Rear diffusers~~
 - ~~May be added but must be below the lower luggage opening in their entirety.~~
 - ~~May define the plan view but cannot extend rearward more than 50mm of the rearmost point of the rear bumper.~~
 - ~~It must fall within the approved body and overhang dimensions.~~

4.1.6 4.1.4: Engine Location

4.1.7 4.1.5: Fuel

4.1.8 4.1.6: Alternate Fuels

4.1.9 4.1.7 Electronically Controlled or Actuated Components

Unless noted herein as an exception the suspension, braking, gear change, clutch, front and rear differential components may not be electronically controlled or actuated.

~~Active front differentials are allowed and subject to a 100lb weight penalty.~~

Production-based active center differentials may be used. The method of control over such a center differential is free. Non-production-based active center differentials or transfer cases are not permitted.

OEM electronic controls of OEM transmissions, clutches, and differentials may be allowed with prior approval from the ARA Technical Director.

A simple engine cut is permitted during a mechanically activated gear change.

Electronic actuation of reverse gear lockout is permitted.

Rationale: Restrict the use of active center differentials, while allowing vehicles that came with active center differentials to be used.

~~4.1.10~~ 4.1.8: Damper Bushings

~~4.1.11~~ 4.1.9: Turbocharger and Exhaust Gasses

Turbocharger must be a single turbo with a single stage of compression and expansion. It must not have variable pitch or geometry.

The turbocharger assembly must be available from a recognized turbocharger manufacturer via retail sales.

Turbocharger must be driven by exhaust gasses only. No secondary injection of air, fuel, or otherwise except as allowed by the fresh air valve. Exhaust gasses are defined as a gas mixture exiting the combustion chambers of the engine.

A fresh air valve between the intake and exhaust systems is allowed provided the following conditions are maintained:

- a) All incoming air must pass through the intake restrictor(s)
- b) The total volume between the restrictor(s) and the butterfly (or butterflies) must not exceed 20 liters.
- c) Components required to actuate the fresh air valve may be added provided they serve no other purpose.

If the OEM turbocharger or configuration is in conflict with these requirements, competitors must request approval to use the OEM turbocharger(s) a minimum of 45 days prior to the event. There is no assurance given that a request will be approved.

Rationale: Put restrictions on the turbo design and prevent “exotic” turbos that are not available to other competitors.

~~4.1.12~~ 4.1.10 ~~Bodywork~~ Door Structure

~~4.1.13~~ 4.1.11 Exceptions

Rationale: Most of the changes pertain to bodywork restrictions and clarifications. The restrictions to bodywork are to rein in aerodynamic performance levels and enable better enforcement.

O4WD Specific Changes

4.2.3 Restrictors

Engines of displacement ~~4.5~~ 3.3 - 6.3 liter must have an airflow restrictor no more than 50 mm from throttle body inlet as measured along centerline of airflow path. All air entering the engine must pass through the restrictor. Restrictor sizing will be established for specific engine proposals such that targeted engine output levels will not be exceeded. Proposals to be submitted per RTR 4.2.1 above. For normally aspirated engines, the throttle bore size may be specified in lieu of a restrictor.

Rationale: Lower the threshold in which engines need additional approval to compete in the O4WD class.

4.2.4 Turbocharger/Supercharger Restrictions

- a) Forced induction engines must have an air inlet orifice ~~of 34mm diameter~~ as specified in Table A or less smaller, either through manufacture or by the use of a restrictor. This restrictor must have a minimum width (parallel to the air flow path) of 3 mm and must be located within 50 mm of the compressor wheel. All air entering the engine must pass through the restrictor.
- b) Must provide 1/8" female pipe fitting in the intake manifold plenum for ARA use. The Table A indicated manifold pressure limit is gauge absolute pressure.
- ~~c) If a car is fitted with multiple induction systems, then the total area of all restrictors cannot exceed the area of the restrictor listed Table A.~~
- c) Competitors must have in place a mechanism to allow the induction system to be sealed by the use of wire and ARA seals.
 - i) With the wire and seal in place, it must be impossible to access the restrictor without removing the wire and seal.
 - ii) The wire and seal cannot be installed without a detailed inspection of the restrictor.
 - iii) Competitors must be prepared to dismantle the induction system to allow for verification of compliance with the rule above.
- d) The storage of boost (i.e., an accumulator) is not permitted.
- e) As an option to competitors, boost monitoring may be accomplished with an FIA Pop-off valve installed per FIA Technical List n° 43. FIA Pop-off valves are to be sealed during the event scrutineering. If the sealing must be removed during the event, it must be under the supervision of the chief scrutineer or the ARA Technical Director. The pop-off valve shall be re-sealed at the discretion of the ARA Technical Director.

Rationale: Update the reference to Table A and change how manifold pressure limit is measured.

4.2.5 Electronic Controls

~~Aside from the exceptions below, no type or form of electronic control is permitted for the following components: Suspension, braking, gear change, clutch, front and rear differentials.~~

- ~~a) Simple engine cut operating during a mechanically activated gear change is permitted.~~
- ~~b) O.E electronic rear differential is permitted.~~
- c) ~~An active front differential may be used, but it will result in the minimum weight for that competition vehicle being increased by 100 lbs.~~

Rationale: Redundant to section 4.1.7

Table A (See below): Restrictor size lowered to 33mm at 2.5bar absolute. (One year grace period for regional competitors)

Rationale: Lower the performance potential of the class to be similar with the Rally2 cars.

NA4WD Changes

4.3.1 Engine and Transmission

Engine must be normally aspirated. Engine block and chassis manufacturer must match.

Transmission manufacturer is free. Sequential shift allowed but is subject to a ~~400 lb.~~ 45 kg. weight penalty.

Rationale: Update to measurements in kg.

L4WD Changes

4.4.19 Turbocharger/Supercharger Restrictions

- a) Turbocharger including wheels, shafts and bearings must remain OEM or appear on the list of approved alternate turbochargers, which are subject to a ~~400 lb.~~ 45 kg. weight penalty. Compressor housings may be modified the minimum amount necessary to accept a mandatory restrictor. Housings may be rotated.
- d) Must provide 1/8-inch female pipe fitting in the intake manifold plenum for ARA use. The Table A indicated manifold pressure limit is ~~gauge~~ absolute pressure.

Rationale: Update to measurements in kg. Change how the manifold pressure limit is measured.

4.4.26 Sequential Shift

Sequential shift allowed but is subject to a ~~100 lb.~~ 45 kg. weight penalty.

Rationale: Update to measurements in kg.

4.4.29 Electronics

Electronics are free. ~~No traction control, unless as fitted by manufacturer (OEM system).~~

Rationale: The traction control rule is not enforceable without spec software.

4.4.35 Rally3 Vehicles Exception

Vehicles conforming to the most current FIA regulations (Appendix J, Article 260) for Group Rally3 are eligible to compete in the L4WD class.

- a) All entrants in a Group Rally3 must present any and all homologation documents pertaining to their vehicle upon demand at any time. This can be in electronic or hard copy format.

Rationale: When compared to the L4WD class, the performance of the Rally3 car is more competitive in L4WD vs O4WD.

Table A (See below): Restrictor size lowered to 33mm at 2.5bar absolute. (One year grace period for regional competitors)

Rationale: Lower the performance potential of the L4WD cars to be in line with the O4WD updates.

L2WD Changes

4.6.13 Electronics

Electronics are free. ~~No traction control, unless as fitted by manufacturer (OEM system).~~

Rationale: The traction control rule is not enforceable without spec software.

Table A National – Class, Engine Type, Maximum Displacement, Restrictor, Minimum Weight

Class	Engine	Max. Disp. (cc)	Restrictor	Min. Weight (kg)
Open 4WD	Forced induction	2600	34mm @ 27 PSI <u>33mm @ 2.5bar absolute</u>	1315
	Nat. aspirated	3320	none	1315
	Nat. aspirated	4500	none	1315
	Nat. aspirated	6300	Subject to Technical Review of specific engine proposals	1315
Naturally Aspirated 4WD	Nat. aspirated	2500	none	1135
	Nat. aspirated	3320	none	1315
Limited 4WD	Forced induction	3000	34mm @ 27 PSI <u>33mm @ 2.5bar absolute</u>	1405
	Forced induction	3000	36mm @ 22 PSI	1405
	Nat. aspirated	2800	none	1405
	Nat. aspirated	6300	none	1495
	Group Rally3: Refer to applicable FIA Regulations			
Open 2WD	Forced induction	1800	none	885
	Forced induction	2600	none	995
	Forced induction	3500	none	1270
	Nat. aspirated	1800	none	None
	Nat. aspirated	4500	none	950
	Nat. aspirated	<u>6900</u>	Subject to Technical Review of specific engine proposals	1270
Limited 2WD	Forced induction	1600	none	1040
	Nat. aspirated	2500	none	995
RC2	Refer to applicable FIA regulations			

Rationale: Update the table to reflect the new restrictor size in O4WD and L4WD and NA engine size changes. Update the weight measurements to be uniform in kg.

Table A Regional (2023 ONLY) – Class, Engine Type, Maximum Displacement, Restrictor, Minimum Weight

Class	Engine	Max. Disp. (cc)	Restrictor	Min. Weight (kg)
Open 4WD	Forced induction	2600	34mm @ 27-PSI <u>2.86 bar absolute</u>	1315
	Nat. aspirated	3320	none	1315
	Nat. aspirated	4500	none	1315
	Nat. aspirated	6300	Subject to Technical Review of specific engine proposals	1315
Naturally Aspirated 4WD	Nat. aspirated	2500	none	1135
	Nat. aspirated	3320	none	1315
Limited 4WD	Forced induction	3000	34mm @ 27-PSI <u>2.86 bar absolute</u>	1405
	Forced induction	3000	36mm @ 22-PSI <u>2.5 bar absolute</u>	1405
	Nat. aspirated	2800	none	1405
	Nat. aspirated	6300	none	1495
	Group Rally3: Refer to applicable FIA Regulations			
Open 2WD	Forced induction	1800	none	885
	Forced induction	2600	none	995
	Forced induction	3500	none	1270
	Nat. aspirated	1800	none	None
	Nat. aspirated	4500	none	950
	Nat. aspirated	6900	Subject to Technical Review of specific engine proposals	1270
Limited 2WD	Forced induction	1600	none	1040
	Nat. aspirated	2500	none	995
RC2	Refer to applicable FIA regulations			

Rationale: This table is only valid for regional entries for 2023. A one year grace period is given to ease the transition to the new restrictor rules in the O4WD and L4WD classes. Update the weight measurements to be uniform in kg

Preston Osborn



ARA Competition Director