



BMW 235i Racing Cup Belgium

Technical regulations 2016

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Art 1 Technical Series Regulations

Art 1.1 Summary of the Eligible Groups/Classes

One class: The only eligible vehicle is the BMW M235i Racing produced specifically for this purpose. The BMW M235i (F22) in series production is the basis for this vehicle.

Art 1.2 Principles of the Technical Regulations

- Art.251-252-253-255 of the Appendix J (FIA ISC)
- The most recent version of the parts catalogue for the BMW M235i Racing
- The most recent version of the user manual for the BMW M235i Racing
- The corresponding Supplementary Event Regulations, -

The RACB in collaboration with the series' organizer, has the right to amend these regulations as necessary, using bulletins.

Furthermore, the rules for the administrative checks and scrutineering/technical checks of these regulations also apply.

Art 1.3 General/Preamble

**Anything not explicitly allowed by these regulations is prohibited.
Permitted modifications must not result in any illegal modifications or infringements of the regulations.**

The aim and purpose of these regulations is to enable every participant to be competitive in the class without investing in modifying or further developing the vehicle.

The parts catalogue for the BMW M235i Racing fundamentally defines the race car. Deviations from this catalogue must be approved by these Technical Regulations or they are deemed to be impermissible.

Art 1.4 Driver's Equipment

The wearing of overalls homologated to the FIA 8856-2000 standard as well as underwear (with long sleeves and legs), balaclava, socks, shoes and gloves in compliance with the FIA prescriptions is compulsory.

Furthermore, a helmet must be worn in compliance with the FIA regulations (Appendix L of the ISC)

Furthermore, the use of the head restraint device (e.g. HANS) is compulsory

The guidelines of the relevant organiser concerning the driver's equipment that go beyond the requirements in these regulations must be observed.

Art 1.5 General Regulations, Permitted Modifications and Installations

The BMW M235i Racing must conform with these regulations throughout the entire event.

The participant/entrant is responsible for making sure that the vehicle is used only in a state that is flawless from a technical perspective and that the RACB safety regulations are adhered to at all times.

Changes to the parts catalogue and with it the vehicle specification made by the series' organizer are to be restricted to measures that improve safety or reduce costs. Additionally, it may be necessary to make updates based on changes to the parts catalogue of the base vehicle.

All installations performed by the entrant/participant may only fulfill the intended function. The scrutineer will decide whether this is the case.

Work necessary for the normal servicing of the vehicle, or the replacements of parts worn through use or accident may be carried out.

The limits of modifications and installations allowed are specified hereafter. Any part worn through use or accident may only be replaced by an original part identical to the damaged one.

Throughout the car, the attachment standard parts such as: nuts, bolts, washers, lock washers, spring washer, splint pins may be replaced with comparable standard parts with the original shape. With regard to screw threads, thread type, size and pitch (e.g. M8 x 1.25) must be retained. Screw threads may be strengthened by Heli-Coil.

Hereby the competitors/driver/owner is instructed that the BMW M235i Racing Cup car (as supplied) may only start in an extra for this vehicle generated Cup-class, if the promoter provided this class. If the promoter did not provide an extra class for the BMW M235i Racing he is responsible for the placement of the vehicle in an appropriate class and where necessary to integrate it while using a "balance of performance". An special authorization to take part in a different class may only be granted by BMW Motorsport and applied for with the respective organiser.

Art 1.5a Ground Clearance

The ground clearance is measured with an empty fuel tank and without a driver. The ground clearance must be a minimum of 100mm. This will be proven by placing a test object below the vehicle. No component must touch the test object. The front splitters, ram-air lips, tyres and rims, as well as parts damaged while driving are not subject to this regulation.

The series' organizer will define a reference area for measuring the ground clearance before the start of the event.

The tyre pressure may be raised to the reference pressure (2.4 bar FA; 2.3 bar RA) for measuring.

Art 1.6 Minimum Vehicle Weights and Ballast

The series' organiser determines the scales for measuring the minimum vehicle weight before the start of the event.

The minimum weight of the vehicle is 1440 kg. The weight of the vehicle must be at least this minimum vehicle weight at all times during the event. The vehicle will be weighed with an empty fuel tank and without a driver. Utilities may not be refilled.

If the vehicle was damaged during the competition, the weight of the parts lost in the process can be considered at the scrutineer's discretion.

It is permitted to add ballast to the vehicle to conform with the weight regulations. As outlined in the parts catalogue, this ballast must be composed of fixed, uniform blocks and be attached to the floor of the passenger compartment. The ballast weight will be sealed. The screw defined in the parts catalogue is to be used for this.

Art 1.7 Equivalence Formula for Supercharged Engines

N/A

Art 1.8 Exhaust Prescriptions

All vehicles must be equipped with a single catalytic converter with the following specifications:

HJS catalytic converter according to DMSB homologation R9010-10

Art 1.9 Noise Regulations

The maximum permitted noise limits are determined by the noise regulations and limits of the visited circuit on that meeting.

Art 1.10 Advertising Regulations and Start Numbers on the Vehicles

Mandatory sticker layout could be found in attachment 3. Applicable for the BMW M235i Racing Cup Belgium.

Areas not required by the series organizer, which are also not claimed by the organiser of the respective event and are not marked on the drawing, may be used by the participants to display their own sponsors, providing the sponsors in question are not in competition with the series organizer in the field of the production and distribution of automobiles (including parts and accessories), as well as vehicle financing, leasing, and mobility services. The participant's sponsors must also not be in competition with the sponsors of the series or event organizer, or be in conflict with ISC. Any exemptions from this must be requested in writing from the series organizer.

Art 1.11 Safety Equipment

The vehicles must be fitted with the following safety equipment.

The article numbers refer to the current Appendix J ISC, unless stated otherwise.

- Lines and pumps in accordance with Art. 253.3.1 and 253.3.2, or Art. 259.6.2
- Fuel cell ventilation in accordance with Art. 253.3.4

- Double circuit braking system in accordance with Art. 253.4
- Additional safety fastener in accordance with Art. 253.5
- Safety belts in accordance with Art. 253.6
- Fire-extinguishing system in accordance with Art. 253.7.2 and Art. 275.14.1
- Safety cage in accordance with Art. 253.8
- Rear view mirror in accordance with Art. 253.9 and Art. 275.14.3
- Towing-eye/device in accordance with Art. 253.10 and Art. 259.14.6
- Safety foil on the windows in accordance with the DMSB prescriptions
- Windshield made of laminated glass
- Door nets in accordance with Art. 253.11 or with the DMSB prescriptions
- General circuit breaker in accordance with Art. 253.13
- Safety fuel tank in accordance with FIA standard FT3/FT3-1999
- FIA homologated non-return valve in the filler neck in accordance with Art. 253.14.5
- Fireproof screen in accordance with Art. 253.15 and Art. 259.16.6
- Seats and attachments in accordance with Art. 253.16
- FIA homologated driver seat in accordance with Art. 253.16
- Prohibition of pressure control valves in accordance with Art. 253.17

Art 1.12 Fuel and Single Fuel

The only permitted fuel is commercial, unleaded fuel in accordance with Art. 252.9 of Appendix J (ISC), which must conform with DIN EN 228. Any additive other than air or lubricant for two-stroke engines is prohibited.

Art 2 Specific Technical Regulations

Art 2.1 General

In addition to the Technical Regulations according to Art 1 of these regulations, the following specific technical regulations are applicable.

Anything which is not explicitly allowed by these regulations is prohibited. Permitted modifications must not result in any illegal modifications or infringements of the regulations.

Art 2.2 Engine

The engine will be delivered sealed. Any changes to the engine or its attachments are prohibited (see Part 1, Art 11).

Art 2.2.1 Exhaust System

The exhaust system outlined in the parts catalogue is to be used.

Art 2.3 Transmission

The gearbox and the differential will be delivered sealed. Any changes to the gearbox or differential are prohibited. Checks, revisions, or opening may only be carried out by BMW AG and the scrutineer.

Art 2.4 Braking System

The entire braking system and its parts subject to wear are only to be obtained from BMW AG.

The braking system is different from the series vehicle and is defined by the parts catalogue. The driving aids (ABS, DSC and TC) are tuned specifically for use on a race track and must not be changed by the entrant.

The brake pads will be labelled by BMW before delivery, to identify that they conform to regulations. Brake pads not labelled are not permitted.

The brake pads must be labelled as shown in figures 2.4.1 and 2.4.2.



Figure 2.4.1: Brake pad, RA



Figure 2.4.2: Brake pad, FA

The minimum strength of the base plate for the brake pads is 6mm for the front axle and 4mm for the rear axle.

The brake calliper can be installed in two variants, as in figure 2.4.3.

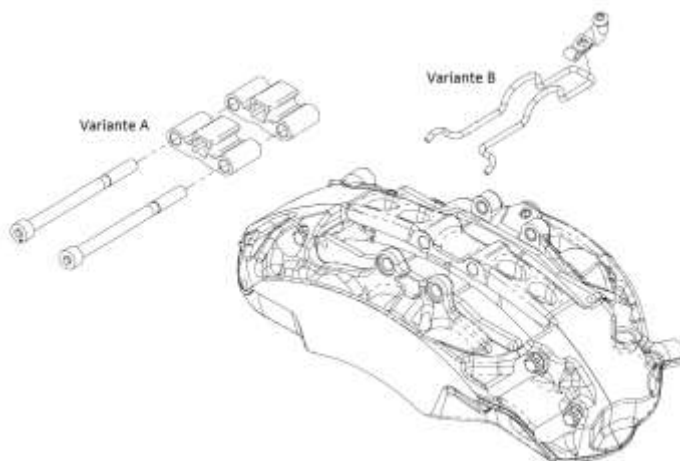


Figure 2.4.3: Brake calliper with brake pad bracket system

Art 2.5 Steering

The steering is defined by the parts catalogue and must be installed without modification.

The 2016 specification of the steering gear stop bush (figure 2.5.1) must have a minimum height of 18.5mm.

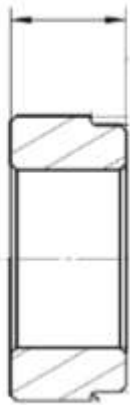


Figure 2.5.1: Steering gear stop bush

The 2015 specification of the steering gear stop bush (figure 2.5.2) must have a minimum height of 33.5mm.

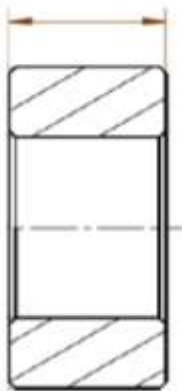


Figure 2.5.2: Steering gear stop bush

Art 2.6 Suspension

The suspension was modified for use on a race track and is defined by the parts catalogue. The suspension must not be changed. The following points for tuning the suspension are an exception:

- Setting the compression and rebound rate of dampers in the screws for this purpose
- Checking and setting the air pressure in the damper
- Setting the track on the tie rod
- Setting the camber in the strut bearings on the front axle, as well as the eccentric screws on the rear axle

- Setting the ride height in the damper
- Setting the roll stabilisers at the intended junctures
- The roll stabiliser may be decommissioned. To do so, the entire roll stabiliser must be removed.

All components used must be listed in the parts catalogue and must be obtained from BMW AG. Springs, assister springs and bump stops are fixed. Changes to the components, for example, modifying the valves in the dampers, are expressly forbidden.

The following dimensions must be configured for certain arms on the rear axle:



Figure 2.6.1: Suspension arm, rear axle
8 417 254 Suspension arm RA 416mm (+/-2mm)

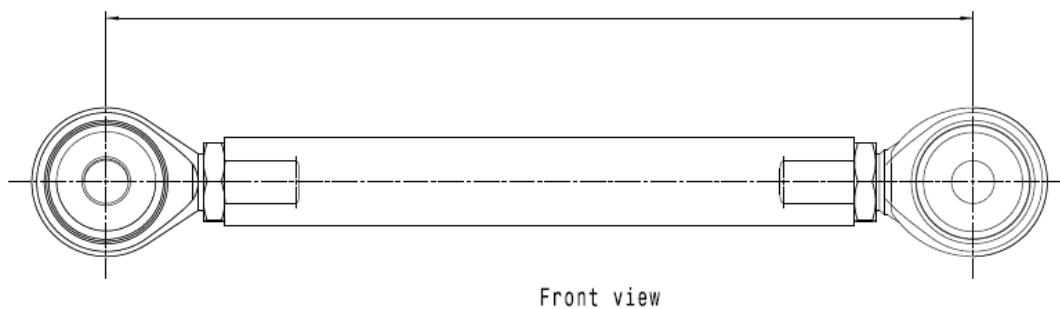


Figure 2.6.2: Trailing arm, rear axle
8 417 242 Trailing arm RA 245mm (+/-2mm)

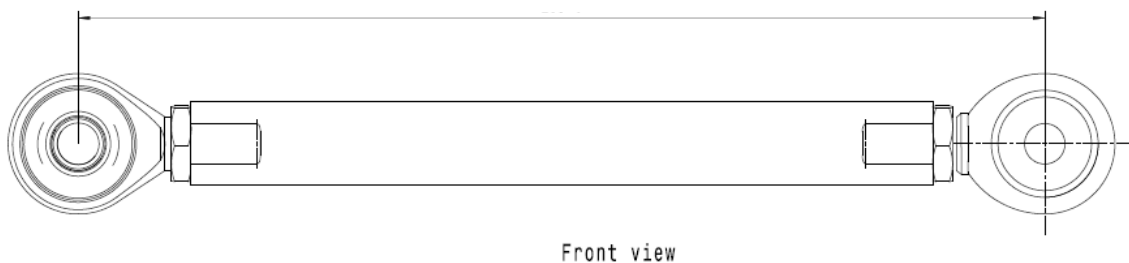


Figure 2.6.3: Wishbone, rear axle
8 417 247 Wishbone RA 289mm (+/-2mm)



Figure 2.6.4: Trailing arm, rear axle
8 417 250 Trailing arm RA 330mm (+/-2mm)

The dampers have the following dimensions
Front axle (measuring points, see figure 2.6.5):
Fully extended: 511mm (+/-3mm)

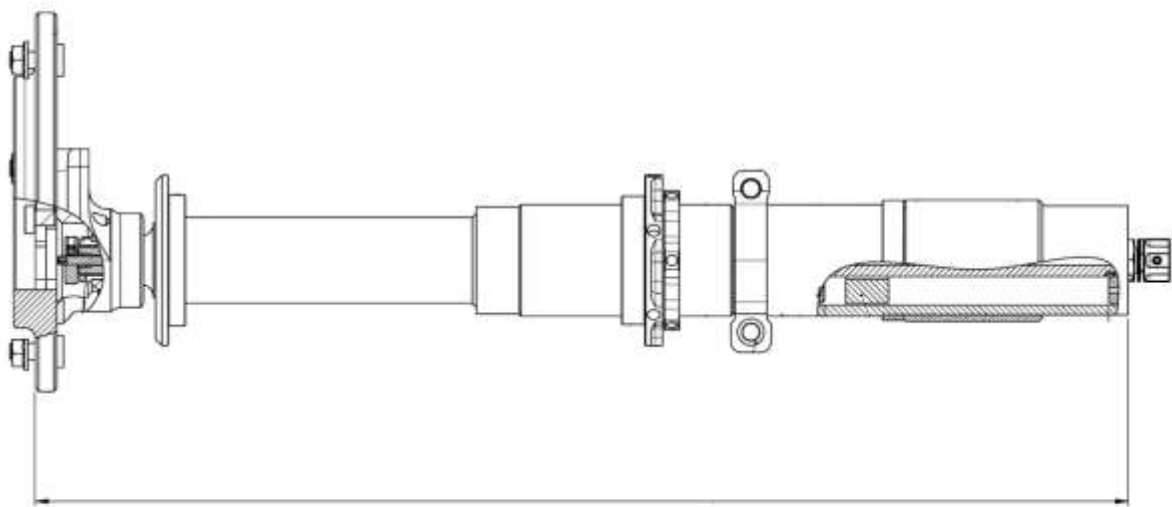


Figure 2.6.5: Measuring points, front-axle damper

Rear axle (measuring points, see figure 2.6.6):
Fully extended: 461mm (+/-3mm)

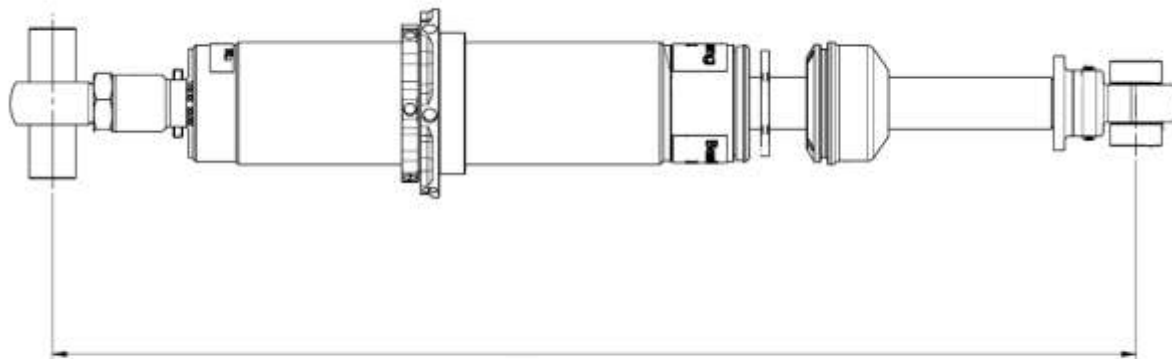


Figure 2.6.6: Measuring points, rear-axle damper

Art 2.7 Wheels (Flange + Rim) and Tyres

Only the defined Dunlop tyres with the dimensions 265 / 660 R18 CM 720 may be used for the BMW M235i Racing. The parts catalogue specifies a slick tyre and a wet-weather tyre. The tyres must be obtained from Goodyear Dunlop Tires Germany GmbH and will be labelled before they are issued.

There is no limit to the number of tyres per event.
The number of wet-weather tyres and slick tyres is not restricted.

Labelled old slick tyres may be used at no more than the next two races (Race 2 tyres can thus be used again at Race 3 and Race 4). The exception to this rule is labelled slick tyres, which have not yet been used. These can be re-labelled at Goodyear Dunlop Tires Germany GmbH. Should an event be truncated or cancelled due to unforeseeable occurrences, or primarily wet-weather tyres be used due to weather conditions, the series organizer can issue a bulletin to annul this rule.

The number of wet-weather tyres is not restricted.

The heating of tyres is to be regulated by the organizer.

It is not permitted to treat the tyres with chemicals. Exceptions to this rule are soapy water to clean them and the lubricant for assembly.

The scrutineer may take tyre samples at any point during the event. These samples will undergo a chemical analysis and be compared with a reference tyre by the tyre partner.

Except for the removal on pickup, the tyres must not be processed mechanically. Cutting or recutting tread patterns is expressly prohibited.

Rims with a dimension of 10Jx18, as outlined in the parts catalogue, must be used. These rims must be obtained from BMW AG.

Art 2.8 Bodywork and Dimensions

a) External Bodywork (Including Windows)

The organiser regulates the window stickers. As outlined in the parts catalogue and the user manual, the windows on the driver's door and the passenger door are to have a safety film stuck to them.

It is not permitted to cut additional openings out of the windows to ventilate the cockpit.

In general it is not permitted to close or mask openings or joins. In the event of provisional repairs during the event, joins or openings in the area of damage may be covered, provided this is necessary due to a lack of time. The scrutineer will decide whether the repair measures are permitted.

If unusually low temperatures make it necessary to close the air vents, the scrutineer must approve this explicitly.

Compared with the series vehicle, the wheel arch was extended and the front of the vehicle was reinforced.

The windscreen may be covered with a clear, non-tinted tear off film for protection. These films must not be labelled. The films must not have any air bubbles that interfere with the driver's field of vision.

b) Cockpit

No individual ventilation tubes are permitted.

A drinking device may be installed, provided that it is permanently attached and the holder can withstand acceleration forces of up to 25G. The scrutineer is responsible for assessing whether he or she feels that the holder is sufficient.

The pedals must not be changed. The only exception is the attachment of a film with increased friction.

The seat, seat consoles and belts must correspond to the parts catalogue and are only to be obtained from BMW AG.

The standard steering column adjustment is retained.

In the interior all covers are to be used as outlined in the parts catalogue. The seat attachment that differs from the series vehicle is documented in Part 3 Attachment 2 by an image.

If the entrant registers a driver who is not able to use the seat defined in the parts catalogue safely due to his or her physical conditions, the series' organiser can approve a different seat and related console upon receiving an individual written application.

A seat test supervised by the responsible scrutineer must take place to demonstrate that the seat specified in the parts catalogue cannot be used. Approval will be given only if the scrutineer deems there to be a safety risk.

This approval is specific to a driver and applies only if the relevant driver participates in the event. The alternative seat used and the console must conform with Article 253, Appendix J and must be presented during scrutineering.

The request can be informal, but must contain the driver's name and licence number, as well as the manufacturer and number of the requested seat variant and console.

c) Additional Accessories

Accessory components from the parts catalogue may be installed and can be offset by the ballast mentioned in Part 2 Art. 1.6 of these regulations.

d) Track Width

The maximum track width as measured following the instruction below, is 1905mm on the front axle and 1885mm on the rear axle.

Measurement instructions:

The car is measured in the reference area. For information on the reference area, refer to TR Art. 1.5a. The tyre pressure may be raised to the reference pressure (2.4bar FA; 2.3bar RA) for the measurement.

A right angle is placed perpendicular under the centre of the axle, on the floor next to the left tyre, and is positioned against the outside wall of the tyre. This position is marked on the ground. This procedure is repeated on the right side of the car.

The distance from the left to the right marking is the track width.

Art 2.9 Aerodynamic Devices

The following aerodynamic devices are permitted:

- Rear spoiler
- Front splitters
- Sideskirts
- Rear wing

The position of the rear wing is defined as follows:

Measurements are always taken in the centre of the car, regardless of the configured angle of the wing.

Wing position on X axis:

The distance X between the top edge of the window and the rear edge of the rear wing is 1040mm (+/-15mm tolerance).

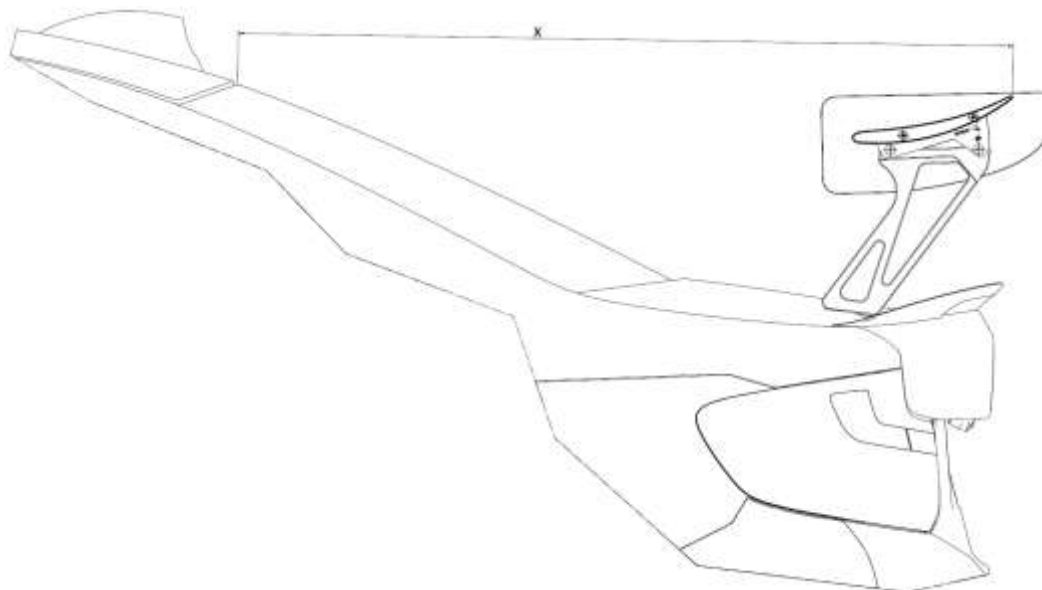


Figure 2.9.1: Determining the wing position on the X axis

Wing position on Z axis:

The distance Z between the rear edge of the rear wing and the rear edge of the rear spoiler – both measured at the top edge – is 230mm (+/- 30mm tolerance)

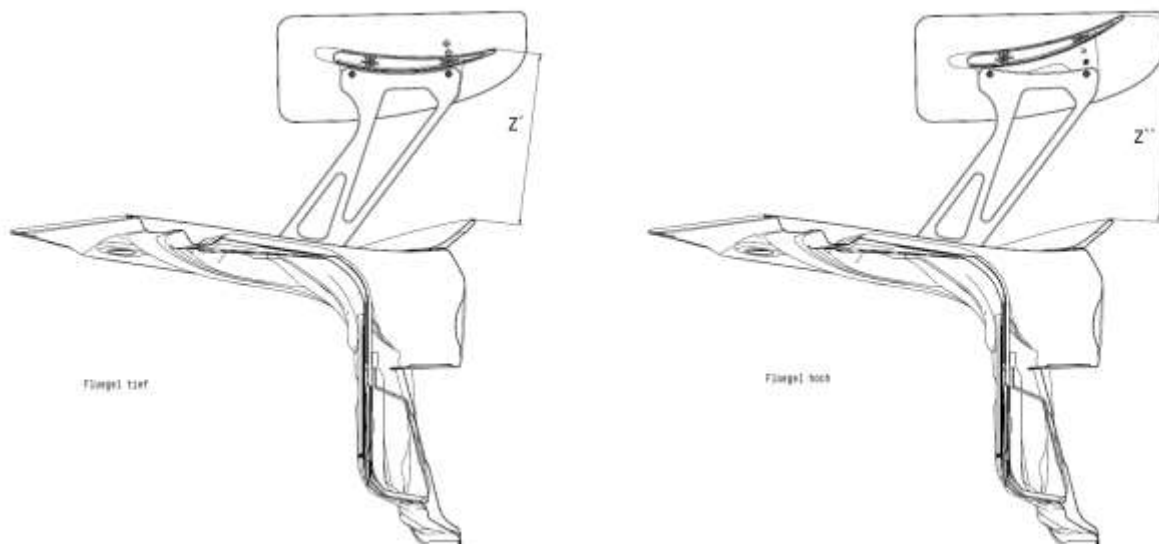


Figure 2.9.2: Determining the wing position on the Z axis

Art 2.10 Electrical Equipment

Data Logging

The vehicle contains 2 CAN interfaces for connecting data loggers. The entrant is permitted to connect a system for recording data to one of these interfaces. The 12V interface stated in the user manual must be used for the power supply.

In agreement with the scrutineer, the series' organizer may install an official data logger in the car at any time.

For races in which an illuminated starting number is permitted, the entrant may attach this. The 12V interface stated must be used for the power supply.

Data loggers are analyzed by the scrutineer or the series' organizer. The participant is responsible for ensuring that the data logger functions without fault. If the actual logger or a component of the system (sensor, cable, or similar) is damaged or does not seem to be working correctly, this must be reported to the scrutineer immediately and in writing.

Repairs to the wiring harness can only be made in agreement with the scrutineer.

Among other things, the throttle valve position, engine speed, driving speed, gear, boost, air charge temperature, lambda, firing angle and quantity of fuel injected are recorded and checked by the series' organizer. Deviations in these values outside of the tolerance defined by the series' organizer will be treated as attempted manipulation.

Art 2.11 Fuel Circuit

Defined in the parts catalogue and must be installed without modification.

Art 2.12 Lubrication System

The lubrication system has been changed for use on a race track compared with the series vehicle and is defined in the parts catalogue.

All utilities (oils, fats, coolants and brake fluids) specified in the user manual must be used as specified. The scrutineer may take samples of the utilities at any time to send them for analysis.

Art 2.13 Data Transmission

Apart from the following exceptions, no data transmission between the vehicle and the environment is permitted:

- Radio communication
- TV cameras stipulated by the organiser
- GPS eye
- Transponder for measuring noise
- Transponder for timekeeping
- Lap trigger

No telemetry systems are permitted.

If the organizer stipulates additional systems that involve the transmission of data, this must be approved by the scrutineer.

Art 2.14 Other

(a) The following systems may be additionally installed in the vehicle:

- Tyre pressure check (sensors in the rims and antennae)
- Lap trigger
- GPS sensor
- Transponder for measuring noise
- Transponder for timekeeping
- Potentiometer to determine the wheel stroke
- GPS eye
- Temperature sensor for differential gear

If the organizer stipulates the assembly of additional systems in the vehicle, this must be approved by the scrutineer.

A system for monitoring tyre pressure using sensors and related antennae is permitted. As outlined in Article 1.11, valves that regulate pressure are not permitted.

Control Units and Software Versions

Software and hardware for the control electronics can be checked by the series' organizer or the scrutineer at any time and must always conform with the current status specified in the

user manual. If this is not the case this will automatically be reported to the sports commissioners and the series' organizer.

The series' organizer is permitted to update or replace the software version or the hardware of the control units at any time. The entrant must not overwrite or change any database or program version in the control units.

Radio System & Cameras

A radio system including antennae may be installed in the vehicle. The 12V interface stated in the user manual must be used for the power supply.

Provided the organizer permits it, cameras may be installed and connected with the entrant's own data logging system. The 12V interface stated in the user manual, or a stand-alone battery supply must be used for the power supply.

Radios and cameras must be permanently attached and the holders must withstand acceleration forces of up to 25G. The scrutineer is responsible for assessing whether he or she feels that the holder used is sufficient.

Airjack

The BMW 235i Racing parts catalogue defines an optional air pressure pumping system. This is the only optional system. If an air pressure pumping system is installed, the compressed air supply is released. The prerequisite being that the boot can be opened and closed without coming into contact with the supply used. The section in the boot lid must not be changed. The position of the supply must not be changed.

(b) Upgrade Package

The following components, which form part of the update package, must be installed when driving in 2016:

- Rear wing, incl. side panels, rear wing support and boot lid (figure 2.14.1)
- Braking system (figure 2.14.2)
- Suspension link (figure 2.14.3)
- Driver air duct

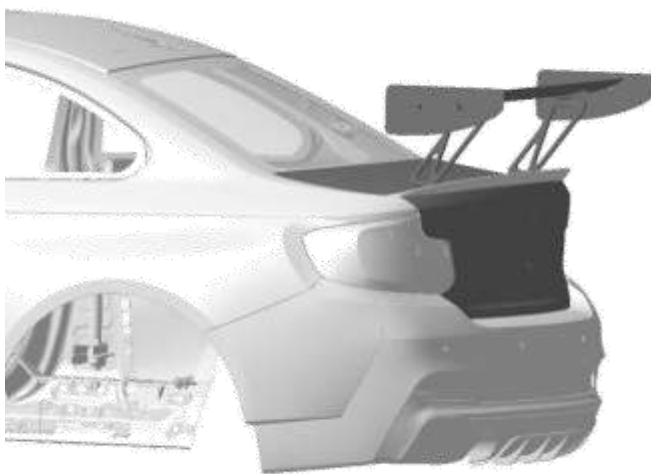


Figure 2.14.1: Rear wing

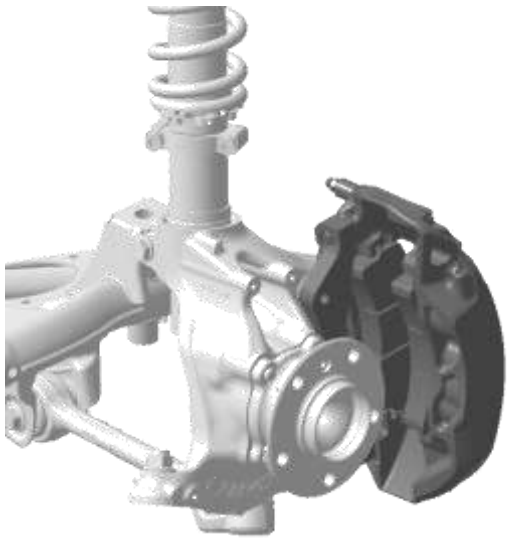


Figure 2.14.2: Braking system FA

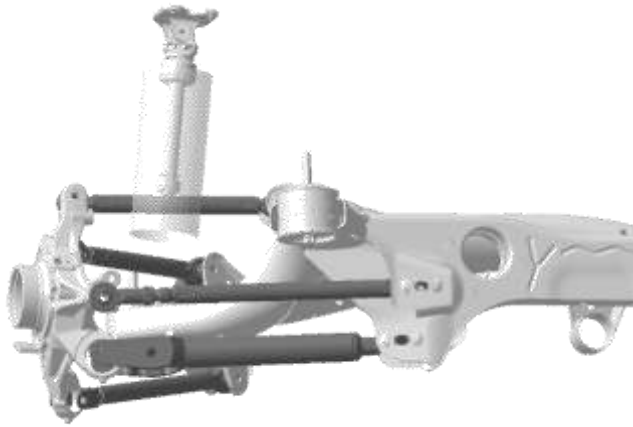


Figure 2.14.3: Suspension link RA

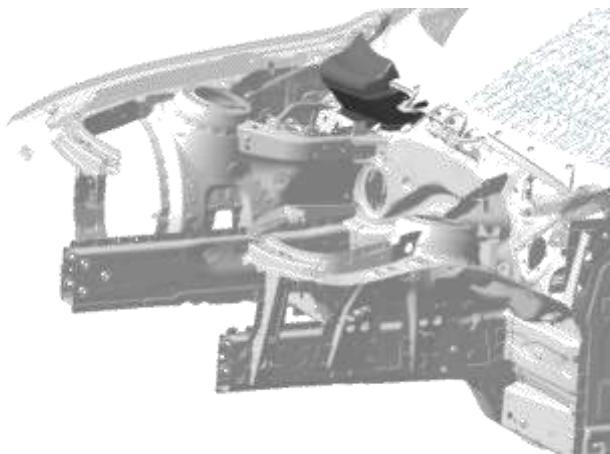


Figure 2.14.3: Driver air duct

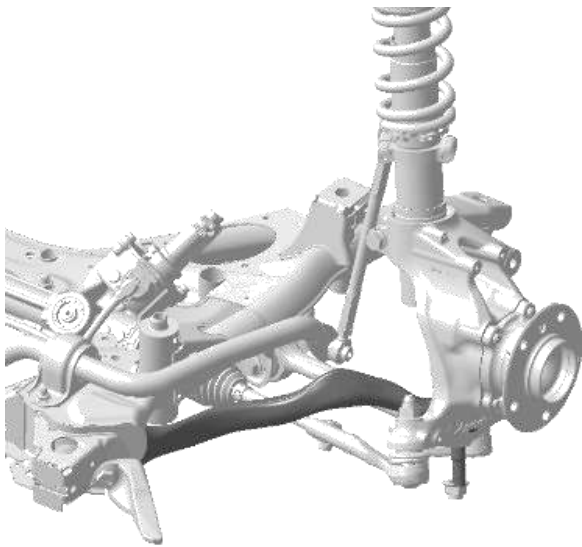


Figure 2.14.4: Suspension link FA

(c) Sobek Tank Pilot

We recommend using the following Sobek Tank Pilot to fuel the BMW M235i Racing:
Schematic drawing of Sobek Tank Pilot, receiver and dispenser



The Sobek Tank Pilot can be purchased from the series organiser. As of 2017, cars may only be fuelled exclusively using the Sobek Tank Pilot.

Art 3 Attachments/drawings

Attachment 1: Advertising on the Driver's Overalls According to the Series Regulations

The following areas are reserved for the series' organiser and are not available to the participant (see Sporting Regulations 19.1). For further details, see the Supplementary Event Regulations.



No.	Area	Owner	No.	Area	Owner
1	Right-hand chest area, 2 positions	BMW+TBA			

Attachment 2: Advertising and Labelling on the Vehicle in Accordance with the Series Regulations

The following areas are reserved for the series' organizer and are not available to the participant (Part 1, Art. 19.1, Part 2, Art. 1.10). For further details, see the Supplementary Event Regulations.

No.	Area	Owner
1	<i>Front bumper bottom right/left</i>	<i>BMW</i>
2	<i>Rear bumper / middle section right/left</i>	<i>BMW</i>
3	<i>Side skirts right/left</i>	<i>BMW</i>
4	<i>Rear spoiler</i>	<i>BMW</i>
5	<i>Numberplates</i>	<i>BMW</i>



M235i Racing
Cup Design 2016



Attachment 3: Seat Attachment

The seat attachment has been changed from that of the series vehicle;

Option „Aluminiumplatte“ (2014)

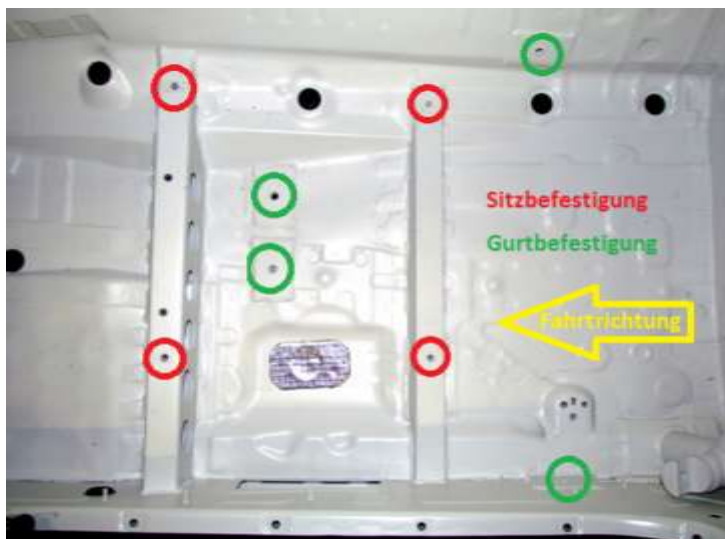


Image 3.3.1: Seat rails

On the marked points of the base image 3.3.1 (Figure 3.3.2) must be installed. The seat rail has to be screwed to the base plate and can be mounted in two different positions.



Image 3.3.2.: Seat rails



Image 3.3.3.: Seat rails Recaro Typ 364954.

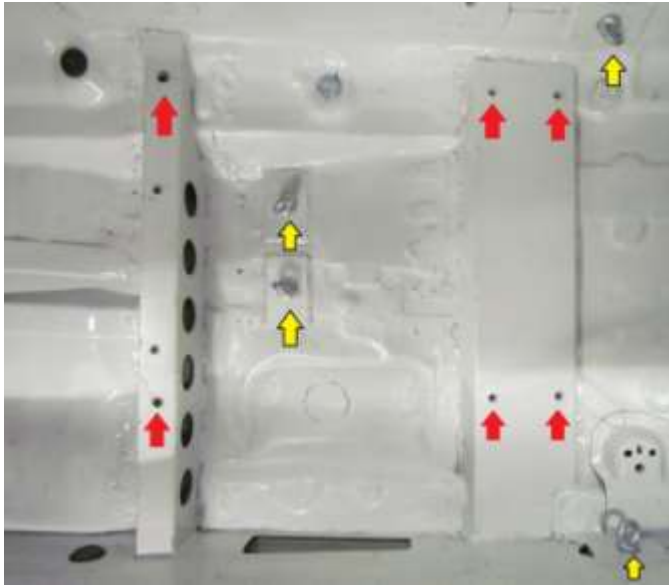


Image 3.3.4.: Seat and harness attachment points for the driver



Image 3.3.5.: Seat rails and console

Approbation

Regulation approved by the RACB Sport on 23/03/2016.
VISA number : T01-BMW235/B16