



BMW Clubsport Trophy

Technical Regulations 2017

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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 325i Clubsport car equipped with the mandatory BMW Clubsport kit. The BMW 325i (E46, E90 and E92) in series production is the basis for this vehicle.

Only vehicles of the type/model BMW 325i Clubsport that comply with the technical specifications of these regulations are eligible to participate in the BMW Clubsport Trophy. For more information, refer to Art. 1.5.

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 Clubsport Trophy
- 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.

With the exception of the Clubsport kit, all other parts and mountings on the car are original as mounted by the manufacturer. The cars have to be strictly original and identifiable with the characteristics of the Certificate of Conformity, the user manual, the repair manuals and the parts catalogue of the manufacturer. The parts catalogue for the BMW 325i (E46, E90, E92) and the BMW Clubsport kit fundamentally define the race car. Deviations from this catalogue must be approved by these Technical Regulations or they are deemed to be impermissible.

Before being allowed to participate at the BMW Clubsport Trophy, all cars have to be equipped with the Clubsport kit and consequently approved by the BMW Clubsport Trophy organization/promotor.

Definitions:

- "Original": the original part delivered by BMW for the BMW 325i
- "Standard": identical or comparable in form and materiel, not delivered by BMW but developed for this type of BMW
- Event: the totality of the meeting including the official qualifying and races

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 organizer 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 325i Clubsport 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 or standard 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.

Art 1.5a Composition of the Clubsport kit

The Clubsport kit that is used to transform the BMW 325i into a BMW Clubsport is described hereafter and needs to be used in its totality without modification in its composition or mounting.

The utilized components for the modifications need, in case of replacement, to be identical to the mentioned components and supplied by the BMW Clubsport Trophy organization.

Before getting granted access to the BMW Clubsport Trophy, every car needs to pass at the dyno designated by the organization / promotor for a technical pre-control. At this pre-control the vehicle's conformity and power output are checked. These measurements are noted and in the technical passport that needs to be shown at every meeting.

Part	Specification
Seat harness	Cobra or Schroth, FIA standard 8853/98 and 8854/98 and still in valid date
Competition seat	Cobra Suzuka Pro, FIA approved n°: 8855/1999 and still in valid date, optional Cobra Suzuka Pro GT, Cobra Sebring Pro, Cobra Sebring Pro GT
Fire extinguisher	OMP
Rollcage	Wiechers
Rollcage protection	FIA type A
Battery cut-off	FIA main switch or Armtech
Steering wheel	QSP
Strut bar	Wiechers front and rear
Suspension	KW 2-way competition with top mounts
Silentblocs	Powerflex silentblocs for front and rear suspension links as well as rear subframe. Optional BMW M3 front suspension links are permitted.
Brakes	4-pistons AP Racing BMW Clubsport Trophy in front and series in the rear. Brakepads Pagid yellow. Brakeline of Aeroquip type.
Hoodpins	Hoodpins front and rear that allow hoods to be opened from outside.
Towhook	FIA approved
Windows	Side and rear window kit in lexan
Wheels	Motec BMW Clubsport Trophy in 8J x 17 ET29
Tyres	Dunlop Direzza DZ03G semi-slick 225/45R17
Interior	Door panels and driver's footplate

All FIA homologated equipment must be within valid date or within the valid date extension period and usage has to be in respect of the FIA standards.

Art 1.5b Ground Clearance

The ground clearance is measured with an empty fuel tank and without a driver. The ground clearance must be a minimum of 55mm. This will be proven by placing a test object below the vehicle. No component must touch the test object. The jack supports, 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' organizer determines the scales for measuring the minimum vehicle weight before the start of the event.

The minimum weight of the vehicles is determined as follows:

Empty without driver, with a full fuel tank and all liquids at the manufacturer's prescribed level and the screenwasher tank empty:

- BMW 325i E46 Clubsport Trophy: 1250kg for 4-door and 2-door coupe
- BMW 325i E90, E92 Clubsport Trophy: 1315kg for 4-door and 2-door coupe

Empty without driver, with an empty fuel tank and all liquids at the manufacturer's prescribed level and the screenwasher tank empty:

- BMW 325i E46 Clubsport Trophy: 1205kg for 4-door and 2-door coupe
- BMW 325i E90, E92 Clubsport Trophy: 1270kg for 4-door and 2-door coupe

The weight of the vehicle must be at least this minimum vehicle weight at all times during the event.

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. The use of ballast weight is permitted according to the conditions foreseen in article 252.2.2 and the general prescriptions of the annex J-FIA

Art 1.7 Balance weight / power output

The minimum weight corresponds with the original power output of the car as stated in the Certificate of Conformity.

A tolerance of 5% is accepted for the manufacturer and on this tolerance field an additional 2% for measurement tolerance is accepted by these regulations to stay within the power output limits that comply with the minimum weights.

For the vehicles that develop more power output, the minimum weights of the below tables are to be respected. Calculation kw/hp: $141\text{kw}:0,736 = 191,5760\text{hp}$ – $160\text{kw}:0,736 = 217,3913\text{hp}$

E46 325i

1 KW = 1,36 PK
1,36

	-5%	←	141 191,8	→	5%	→	5%	→	5%
KW	134,0				148,1		155,45		163,23
PK	182,2				201,3		211,4		222,0
		-2%		2%		2%		2%	
KW	131,3				151,0		158,56		166,49
PK	178,5				205,4		215,6		226,4
	1205kg (empty) / 1250kg (full)				add 30kg 1235kg (empty) / 1280kg (full)		add 60kg 1265kg (empty) / 1310kg (full)		

E90 325i

	-5%	←	160 217,6	→	5%	→	5%	→	5%
KW	152,0				168,0		176,40		185,22
PK	206,7				228,5		239,9		251,9
		-2%		2%		2%		2%	
KW	149,0				171,4		179,93		188,92
PK	202,6				233,0		244,7		256,9
	1270kg (empty) / 1315kg (full)				add 30kg 1300kg (empty) / 1345kg (full)		add 60kg 1330kg (empty) / 1375kg (full)		

Art 1.8 Exhaust Prescriptions

All vehicles must be equipped with the original catalytic converter.

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

The following areas are reserved for the series promotor:

- Sunvisor windshield
- Sideskirts and lower skirts over 15 cm of height measured from the bottom of the body, including the four bumper corners
- The upper and lower part of the starting number shields
- The numberplates
- The upper part of the rear windscreen
- Five additional placements (one front, two rear and two on the side)

Areas not required by the series organizer, which are also not claimed by the organizer of the respective event, may be used by the participants to display their own sponsors, providing the sponsors in question are not 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.

- ☒ 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
- ☒ Windshield made of laminated glass
- ☒ General circuit breaker in accordance with Art. 253.13
- ☒ 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

Any changes to the engine or its attachments are prohibited.

The BMW Clubsport Trophy is only accessible for cars of the type BMW 325i with a standard engine of the following type:

- BMW 325i E46 M54B25, 193hp at 6000rpm, 245Nm at 3500rpm, rev limiter at 6500rpm
- BMW 325i E90/E92 N52B25, 218hp at 6500rpm, 270Nm at 2750rpm, rev limiter at 7000rpm

All engines can be sealed. None of the sealed components may be demounted without concertation of the BMW Clubsport Trophy organization. In that case, any repair needs to be done with new original parts in concertation with the BMW Clubsport Trophy organization.

Engine mountings need to remain original.

Air intake needs to remain original. Another airfilter in the original air intake is permitted. A modification of the original air intake box with a hose of maximum diameter 100mm to add fresh air as shown in the picture is permitted.



An additional air hose with a maximum diameter of 100mm adding fresh air to the valvetronic unit on the N52B25 engine in the E90/E92 models is permitted.



Plastic engine cover may be removed. Housing for microfilter may be removed.



Art 2.2.1 Exhaust System

Exhaust manifold and exhaust line are to remain standard. Only the optional BMW Clubsport exhaust line which has only a sound influence and that can be purchased at the BMW Clubsport Trophy organization, is permitted.

Art 2.2.2 Cooling system

The complete cooling system needs to remain original. The only exception is the removal of the airconditioning.

Art 2.3 Transmission

The gear changing mechanism needs to remain completely original. All driveshafts and their connections need to be original and non-modified.

The homologated differential ratios for the BMW Clubsport Trophy are from the original series production and need to remain in the original differential housing without limited slip.

- E46 325i: 3.15
- E90/E92 325i: 3.23

The mounting of the differential carrier are to be replaced by the bushes that are part of the Clubsport kit. The mounting of the differential by means of harder rubber mountings is permitted.

The gearbox needs to remain original and non-modified.

Gear ratio's:

- E46 325i: 1°:4.23; 2°: 2.52; 3°: 1.66, 4°: 1.22, 5°: 1.00
- E90/92 325i: 1°:4.32; 2°: 2.46; 3°: 1.66, 4°: 1.23, 5°: 1.00, 6°: 0.85

The gearbox of the corresponding 330i models is permitted with the following gear ratio's:

- E46 330i: 1°:4.21; 2°: 2.49; 3°: 1.66, 4°: 1.24, 5°: 1.00
- E46 330i: 1°:4.35; 2°: 2.50; 3°: 1.66, 4°: 1.23, 5°: 1.00, 6°: 0.85
- E90/92 325i: 1°:4.32; 2°: 2.46; 3°: 1.66, 4°: 1.23, 5°: 1.00, 6°: 0.85

All clutch parts, clutch mechanism and flywheel have to remain original.

Gearbox and differential are sealed.

Art 2.4 Braking System

The entire front axle braking system has to be mounted as it is foreseen in the Clubsport kit. Except this modification the entire braking system has to remain original and non-modified in its functioning. Any mechanical, hydraulic or software modification is prohibited.

The use of aeroquip brakelines as foreseen in the Clubsport kit is mandatory.

The use of the Pagid yellow brake pads and the AP Racing brake discs as foreseen in the Clubsport kit is mandatory. These parts that are subject to wear have to be obtained from the BMW Clubsport Trophy organization.

A flexible airtube with a diameter of maximum 100mm for cooling of the brakes is permitted at each front wheel. These airducts need to be placed in the foreseen openings in the front bumper or in the mounting area of the foglights. The airducts may not pass the body contours, looking at it from above.

It is permitted to remove the backplates but without adding any material.

Brake pedal needs to remain original. ABS system may be disconnected.

Art 2.5 Steering

The steering is defined by the BMW parts catalogue for the respective BMW 325i model E46/E90/E92 and must be installed without modification. The steering wheel lock has to be removed. The sports steering wheel is delivered in the Clubsport kit. An additional spacer of maximum 100mm is permitted.

The steering wheel assistance remains original and non-modified.

Art 2.6 Suspension

The suspension was modified for use on a race track and is defined by the parts catalogue of the BMW Clubsport Trophy kit. 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

- The rear roll stabiliser may be decommissioned. To do so, the entire roll stabiliser must be removed.

The suspension links and arms remain original. The roll stabilisers are free of choice from the OEM parts catalogue of BMW for the corresponding model with the following diametres:

- E46 325i: front 23mm, 23.5mm rear 18mm, 19mm
- E90/92 325i: front 26.5mm, rear 13mm, 14mm

Only the KW Competition set as delivered in the Clubsport kit is permitted and mandatory mounted. The mounting points must remain original and may not be reworked. The reinforcement of the wheel suspension and its mounting points by adding material or any other modification is prohibited. The only exceptions are the fixation points of the track control arm on the rear differential carrier.

The bushes of the front suspension arms are to be replaced by a massive version as foreseen in the Clubsport kit. As an alternative the front axle arms may be replaced by the original arms of the corresponding BMW M3 models, with the following part numbers.

- E46 : 31 12 2 229 453 (left), 31 12 2 229 454 (right)
- E90/92 : 31 10 2 283 577 + 31 10 2 283 575 (left), 31 10 2 283 578 + 31 10 2 283 576 (right)

The location of any turning place may not be altered.

The bushes of the E46 rear trailing arm are replaced by a massive version in the Clubsport kit. The location of any turning place may not be altered. In the E90/E92 the two superior suspension links may be replaced by the original BMW M3 parts with part number 33 32 2 283 546 + 33 32 2 283 548 (right) and 33 32 2 283 545 + 33 32 2 283 547 (left)

The Wiechers strut bars as part of the Clubsport kit have to be mounted in front and rear.

Only the springs that are delivered in the Clubsport kit and part of the Clubsport parts catalogue are permitted and mandatory mounted. The use of any limiter on spring travel distance is prohibited.

Camber and alignment within the available adjustment range is free. Any deformations are prohibited. For the BMW E90/E92 the use of spacers 15mm as foreseen in the Clubsport kit and in the Clubsport part catalogue have to be mounted.

The original wheel bearings have to remain. Broken or used wheel bearings have to be replaced by original or standard parts.

Art 2.7 Wheels (Flange + Rim) and Tyres

Only the defined Dunlop tyres with the dimensions 225/45R17 (semi-slick) and 205/6920R17 (wet) may be used for the BMW Clubsport Trophy. The parts catalogue specifies a semi-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 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 8Jx17 ET29 Motec, as outlined in the Clubsport kit must be used. These rims must be obtained from the BMW Clubsport Trophy organization.

The wheelbolts may be exchanged by a wheelstud/nut combination. The minimum usable thread must be at least equal to the thread of the standard wheel bolt.

Art 2.8 Bodywork and Dimensions

a) External Bodywork (Including Windows)

The bodywork remains except the color and decoration standard in respect of the technical dimensions of the manufacturer. Sunroof is prohibited.

Only standard body parts are allowed, bodywork may not be reduced in weight. Doors have to be able to be opened from interior and exterior without any additional tools.

Inner plastic wheel arcs may be removed.

Plastic underbody protection plates may be removed.

The windscreen remains standard. 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.

The side and rear window are replaced by lexan windows as featured in the Clubsport kit. The window mechanisms may be removed. The lateral window on driver's side has a slider kit. An additional tube of max 100mm may be added to add fresh air in the cockpit. The tube needs to be within the vehicle contour.

The replacement or repair of any bodyparts needs to be according the repair methodology of the manufacturer. No reinforcements may be made.

Engine hood and bonnet are foreseen of hoodpins as featured in the Clubsport kit. The original closing mechanism may be removed.

Only series or type M / M Performance standard bumpers, sideskirts are permitted, as well as a standard rear spoiler lip.

b) Cockpit

The original dashboard has to be remained. The glove box and the mid console around the gear lever may be removed.

Carpets, ceiling carpet, insulation material, airbags, series harness, series seats and rear seats have to be removed. Tar may be removed. Door and floor panels as provided in the Clubsport kit need to be mounted.

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 in the Clubsport kit. 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' organizer can approve a different seat and related console upon receiving an individual written application.

The standard steering column adjustment is retained.

Art 2.10 Electrical Equipment

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 original status specified by the manufacturer. 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.

Battery

Make of the battery is free, dimensions and weights have to be identical to the standard battery. The battery needs to remain in the original position. The battery needs to be solidly fixed and the + - pole needs to be protected.

Data Logging

The entrant is permitted to connect a system for recording data via OBD or CAN interface.

In agreement with the scrutineer, the series' organizer may install an official data logger in the car at any time. If the car is fitted with an own data logging system from the participant, data can be requested by the scrutineer.

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.

For the purpose of this technical control via data-logging an additional CAN-adaptor cable needs to be foreseen in the vehicle.

This adapter cable has the following connections:



Red = 12V
Black = Earth
White = CAN +
Blue = CAN -

In the car the CAN connections need to be connected as follows:

E46:

White cable, CAN + = BMW CAN 1 High yellow-red
Blue cable, CAN - = BMW CAN 1 Low yellow-brown

E90/E92:

White cable, CAN + = BMW CAN High blue-red
Blue cable, CAN - = BMW CAN Low red

The adapter cable has to be located at the right side of the car.

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

Among other things, the throttle valve position, engine speed, driving speed, 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 manufacturer's tolerance will be treated as attempted manipulation.

Art 2.11 Fuel Circuit

The original fuel tank, fuel lines, fuel system and injection system must remain original.

An additional standard fuel pump may be added to the fuel tank to replace the capillary system that transfers the fuel from one side of the tank to the other side.

Fuel tank capacity:

- E46 325i: 63ltr
- E90/E92: 63ltr

Art 2.12 Lubrication System

The original lubrication system must remain.

Art 2.13 Other

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

- Lap trigger
- GPS sensor
- Transponder for measuring noise
- Transponder for timekeeping
- Temperature sensor for differential gear and gearbox

- Temperature sensor for the brakes

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

Radio System & Cameras

A radio system including antennae may be installed in the vehicle.

Provided the organizer permits it, cameras may be installed and connected with the entrant's own data logging system.

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.