



# NEXEN TYRE E46 CLASS



# REGULATIONS

# BMW Race Driver Series

## NEXEN Tyre E46 Class 2024-2025 Regulations

### **1. Objective:**

The objective of the NEXEN Tyre E46 Class is to create a more competitive, fair, and engaging motorsport environment by minimising the technical disparities between competitors. Driver capabilities should be the paramount factor in winning races.

### **2. Eligibility:**

**2.1** All drivers must have a MotorSport NZ C1 Grade licence, or higher.

**2.1.1** Competitors are only permitted to enter their vehicle into one class within the BMW Race Driver Series; however, the same car may be shared by two different drivers.

**2.2** All drivers must be a financial member of the BMW Race Driver Series and have a current BMW Car Club NZ Membership.

**2.3** Presentation of cars must be to a high standard and the organizers reserve the right to refuse entry to cars deemed not up to standard. This requirement also applies to vehicles previously accepted for the BMW Race Driver Series where their condition has deteriorated to the point where this is not of an acceptable standard.

### **3. Series Entry:**

**3.1** Entry into the Series can be made by visiting [www.bmwraceseries.co.nz](http://www.bmwraceseries.co.nz)

(1) Full season entry is \$200, or

(2) Per round entry is \$75

**3.2** By entering the Series, all drivers agree with and shall abide to the Technical Regulations in Part Two of this document, and the BMW Race Driver Series "Culture Document"

**3.3** The BMW Race Driver Series reserves the right to accept "guest" drivers from time-to-time. Such entries shall have no bearing on the points results.

### **4. Dates:**

**4.1** The following dates and venues have been organised for the 2023-2024 season, however may be subject to change due to circumstances beyond the BMW Race Driver Series' control.

| Round | Dates                | Venue         | Club              |
|-------|----------------------|---------------|-------------------|
| 1     | 21-22 September 2024 | Hampton Downs | NZIGP Inc         |
| 2     | 18-20 October 2024   | Manfeild      | Manawatu Car Club |
| 3     | 23-24 November 2024  | Hampton Downs | NZIGP Inc         |
| 4     | 4-5 January 2025     | Taupo         | NZIGP Inc         |
| 5     | 22 February 2025     | Hampton Downs | TACCOC Inc        |
| 6     | 29-30 March 2025     | Taupo         | NZIGP Inc         |

## **5. Race Formats:**

### **5.1 Qualifying:** There will be one Qualifying session.

- (a)** If because of track closure / blockage, weather delays or other external influences, a valid time is not registered for at least 50% of the cars on track for the qualifying session, then all qualifying times will be set aside.  
The grid for Race One shall be determined by the points finishing order from the previous round. However, this does not include individual cars that do not get a valid qualifying time because of their own mechanical failure or accident. These cars automatically go to the back of the grid.  
Ranking for entrants who did not participate at the previous round will be determined by ballot.
- (b)** If it is the first race meeting of the season and because of track closure / blockage, weather delays or other external influences, a valid time is not registered for at least 50% of the cars on track for the qualifying session, then all qualifying times will be set aside.  
The grid shall be determined by the points finishing order from the previous season's championship finish. However, this does not include individual cars that do not get a valid qualifying time because of their own mechanical failure or accident. Those cars automatically go to the back of the grid.  
Ranking for entrants who did not participate in the previous season will be determined by ballot.

### **5.2** There shall be three races at each round.

- (1) Race One:** shall be a ten-lap scratch race (standing start).

  - (a)** The grid for Race One will be set using the fastest to slowest results from qualifying followed by those without valid qualifying times.

Those without valid qualifying times shall be ordered by their points standing in the championship to date. If this is the first round and there are cars without a valid qualifying time they shall be ordered in the rear of the grid by ballot.

Cars that are entered and qualified, but unable to compete in the first race will have their grid place left blank.
- (2) Race Two:** shall be an eight-lap, scratch race (standing start).

  - (a)** The grid for Race Two will be set using the finishing order from Race One.
- (3) Race Three:** shall be an eight-lap, top 8 reverse (standing start).

  - (a)** The entire field will be reclassified, determined by their fastest lap time of the meeting. The top eight drivers will be reversed in order. For those drivers to qualify for the top eight reverse order, drivers must have recorded a lap time within 2% of the fastest lap time of the meeting within their class.

### **5.3** Being classified as a finisher of each Race will be in accordance with Schedule Z, Article 11.3.



## **6. Points:**

**6.1** 10 bonus points will be awarded for the fastest legitimate lap in Qualifying. No bonus points will be awarded if the count-back system has been used to determine the Race One grid.

**6.2** Points shall be allocated based on finishing position in each Race as follows:

| Placing | Points | Placing | Points | Placing | Points |
|---------|--------|---------|--------|---------|--------|
| 1st     | 200    | 15th    | 100    | 29th    | 60     |
| 2nd     | 185    | 16th    | 96     | 30th    | 58     |
| 3rd     | 173    | 17th    | 92     | 31st    | 56     |
| 4th     | 163    | 18th    | 89     | 32nd    | 54     |
| 5th     | 154    | 19th    | 86     | 33rd    | 52     |
| 6th     | 146    | 20th    | 83     | 34th    | 50     |
| 7th     | 139    | 21st    | 80     | 35th    | 48     |
| 8th     | 133    | 22nd    | 77     | 36th    | 46     |
| 9th     | 127    | 23rd    | 74     | 37th    | 44     |
| 10th    | 122    | 24th    | 71     | 38th    | 42     |
| 11th    | 117    | 25th    | 68     | 39th    | 40     |
| 12th    | 112    | 26th    | 66     | 40th    | 38     |
| 13th    | 108    | 27th    | 64     | 41st    | 37     |
| 14th    | 104    | 28th    | 62     | 42nd    | 36     |

**6.3** Point scores from a competitor's two worst competed race results of the Series will be excluded from their final points tally at the end of the season.

- (1) Races not competed in will not count as an exclusion unless the competitor at least entered that race meeting and completed the documentation process at the venue.

Should extenuating circumstances exist then the Committee, at its sole discretion, may select any race result as a drop. All other race results will be counted, including any non-scoring races.

- (2) If because of a penalty a driver is penalised from one or more qualifying sessions, races, or even complete meetings, then none of those non-scoring races or qualifying sessions can be “dropped”. This applies in the case of both driver behavior issues and technical infringements and is irrespective of whether the penalty was applied by MotorSport NZ Officials, or from within the BMW Race Driver Series.

**6.4** Should a driver use more than one vehicle during the season, providing the vehicle they have changed to is eligible for the NEXEN Tyre E46 class, points may be carried over.

## **7. Penalties:**

**7.1** These shall be considered minimum possible penalties to be applied by the BMW Race Driver Series committee and are not limited to those written below. The BMW Race Driver Series Committee has the right to impose point penalties for any breaches of the technical regulations, these regulations or the Culture Document.

| <b><u>Item</u></b>                                                               | <b><u>Penalty</u></b>                                                                                       |
|----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|
| Missing trim                                                                     | 25 points per missing piece                                                                                 |
| Camber outside of the E46 Technical Regulations rules                            | 25 points per each incorrect wheel                                                                          |
| Car not presented for weigh-in                                                   | 200 point deduction penalty for Qualifying. No points will be awarded for that Race                         |
| Under the Minimum weight for your class                                          | 25 points for each 5 Kilograms under, Example: 0.01kg-5kg under = 25 Points, 5.01kg- 10kg under = 50 points |
| Sway bars found to be outside of the E46 Technical Regulations (including links) | 25 points                                                                                                   |
| Missing Seal                                                                     | 200 Point deduction                                                                                         |
| Livery/Decals incorrect or missing                                               | 25 point deduction per item                                                                                 |

Anyone found to have threatened or abused an official, volunteer, competitor, or spectator, or to have shown behaviour that, in the eyes of the BMW Race Driver Series, brings the race series into disrepute, will likely face expulsion from the BMW Race Driver Series.

# BMW Race Driver Series

## NEXEN Tyre E46 Class Technical Regulations (Part Two) 2024-2025

### **1. GENERAL DESCRIPTION**

The NEXEN Tyre E46 Class is for right-hand-drive BMW E46 320i Models, in both 2-door and 4-door body styles (excluding hatchback models) that were produced by BMW for sale to the general public, as shown in sales brochures. This can be verified by using the chassis number. Other body styles are not eligible for this class.

The E46 320i must use the M54B22 24-valve, Double Overhead Cam, 2.2 litre six-cylinder engine.

The E46 concept is intended to provide close racing between drivers and require a simple technical challenge for preparation and setup. The intention of the technical regulations is to create a car that is as safe as possible, fun to drive and yet remain as close to standard as possible.

If you are contemplating any modifications not specifically approved in these regulations, you should contact the BMW Race Driver Series via e-mail: [bmwraceseries@hotmail.com](mailto:bmwraceseries@hotmail.com).

**Note:** *Individual Committee or Series members cannot give you approval or authority. This must be provided in writing from the Series.*

**Competitors must assume that unless a modification is specifically permitted, then it is prohibited.**

- 1.2** By entering the BMW Race Driver Series drivers acknowledge that they have read all of the technical and operational rules and will abide by them in all respects. They should be aware that any breach of these series regulations will render their vehicle ineligible and will result in sanctions against the offending driver that may include time penalties, disqualification, loss of competition points, suspension and/or expulsion from the series, plus any further penalties deemed appropriate. The BMW RDS Committee or any appointed representative is the sole judge of fact.
- 1.3** The BMW Race Driver Series reserves the right to make technical checks at any time during the racing season, defined as being from the start of pre-season scrutineering through until the completion of Parc Ferme following the last race meeting of the season. The duration of Parc Ferme may be based on the driver's position in the championship and will be advised during the last race meeting. Scrutineering inspections may be made at race meetings, or away from the track at the discretion of the scrutineers. Any costs associated with any inspections or tests will be borne by the competitor, including any replacement parts, such as gaskets and fluids, as well as the cost of getting the car to any specified place of inspection.
- 1.4** Security seals may be applied to various components as advised by the Committee and/or scrutineers. The BMW Race Driver Series reserves the right to have these sealed components checked for eligibility purposes.

**Removal of, or tampering with these seals, where fitted, without prior authorisation will result in a penalty being applied. Authorisation to remove a seal must be requested and approved before the seal is removed. The Committee reserves the right to inspect any sealed item for compliance before granting authorisation. Authorisation to remove a seal may only be granted through written notice from the series via email: [bmwraceseries@hotmail.com](mailto:bmwraceseries@hotmail.com). In case of a component failure during a round, such authorization can additionally be obtained exclusively from the BMWRDS President or the BMWRDS Series Coordinator.**

- 1.5** These defined technical regulations and any BMWRDS Technical Bulletins issued, constitute the sole authoritative rules for the 2024-2025 season. Any required modifications or clarifications arising during the season, will be released as "BMW RDS Technical Bulletins". The governing rules at any given time will consist of these base regulations, complemented by any subsequent Technical Bulletins issued up to that point. The authoritative source of these rules and any issued Technical Bulletins is located at: <https://bmwraceseries.co.nz/e46-spec-class>.

## **2. SAFETY REQUIREMENTS**

All vehicles are required to adhere to all current MotorSport New Zealand (MSNZ) regulations in relation to Driver & Vehicle Safety (refer to MotorSport NZ Manual No. 36, Appendix Two, Schedule A) on-line <https://manual.motorsport.org.nz/>. This includes any amendments or subsequent versions issued by MSNZ.

### **2.1 All vehicles must have:**

- (a)** A current MotorSport NZ Logbook.
- (b)** A MSNZ approved competition seat designed for use with a five-point or six-point harness with appropriate mountings must be fitted according to App Two, Sch A, Part One, Article 4.7.
- (c)** A suitable MSNZ approved five-point or six-point harness mounted as detailed in App Two, Sch A, Article 4.4.
- (d)** A MSNZ approved multi-point roll cage compliant with App Two, Sch A, Part Two, Article 4.6 with side intrusion bars is mandatory. Cages must be made from MSNZ-Q29 material. For avoidance of doubt, 4130 and T45 material is prohibited.

Alternative roll cages are acceptable provided they meet the following criteria:

- (i)** The roll cage design, construction and installation must satisfy all MSNZ regulations.
- (ii)** Triangulation between the roll cage front legs and front strut towers is permitted.
- (iii)** Safety cage padding must be fitted as required in Article 4.6 (6).
- (e)** Headlamps (if installed) covered with protective tape and comply with any current MSNZ requirements.
- (f)** Towing eyes fitted in accordance with Appendix Two, Schedule A, Part One, Article 5.15.
- (g)** A MSNZ approved handheld fire extinguisher as per Appendix Two, Schedule A Part One, Article 4.8.

### **2.2 Frontal Head Restraints (FHR) are mandatory.**

- (a)** FHR devices must be made to an approved standard and fitted and worn as per Appendix Two, Part One, Article 4.2.
- (b)** All occupants must wear an FHR during all practice, qualifying and races that are part of the BMW Race Driver Series. Failure to do so may result in a penalty or disqualification.

### **3. CHASSIS & EXTERIOR/BODYWORK**

#### **3.1 Required Equipment / Modifications:**

- (a)** The chassis design and material must remain as standard. Lightening or reducing chassis strength is prohibited. Other than the reinforcement of rear sub-frame mounting points plus front and rear shock towers, additional strengthening of the chassis is prohibited (e.g. seam welding). The chassis as produced by the manufacturer with the original material must be retained in all aspects in respect of material, thickness and contour. For the benefit of doubt, chassis is defined here to include the body shell, wings, bonnet, boot-lid, roof, panels, floor and all bumper bars and support devices.
- (b)** The steering system including rack, tie rods, front sway bar, steering arms and column shall remain as standard E46 fitment, with the Power Steering system fully operational.
- (c)** Towing eyes must be fitted and identified as per Appendix Two, Schedule A, Part One, Article 5.15. To avoid damage caused by a solid metal towing eye a soft webbing-type strap must be used on the front of all cars.
- (d)** The following items must be removed – tow bars, mud flaps.
- (e)** Factory front bumpers (excluding M3) must be used and must be complete with all internal structure as factory. Fitment of aftermarket replacement plastic bumpers is allowed, provided they are a direct copy of an approved factory BMW one.

#### **3.2 Modifications permitted, but not mandated:**

- (a)** It is permissible to remove the factory applied body sound deadening and under seal.
- (b)** A strut brace between the front strut towers may be fitted, either bolted or welded in place.
- (c)** A strut brace between the rear strut towers may be fitted, either bolted or welded in place.
- (d)** Sunroof mechanisms may be removed entirely and replaced with any material of your choosing so long as it meets MSNZ safety requirements. Alternatively, the complete roof panel may be replaced with another standard steel roof that does not have a sunroof.
- (e)** The OEM Cabin Filter Housing can be replaced with a fiberglass equivalent.
- (f)** Either the steel (31111096431) or alloy (51717028433) subframe reinforcement may be fitted or removed. If fitted, no modifications are permitted. OEM plastic splash guards/undertrays may be fitted or removed. If fitted, no modifications are permitted - including to attachment points.
- (g)** A metal skid plate may be fitted to cover the fuel tank. The plate itself may not extend more than 100mm beyond the tank in any direction. It cannot be designed in any way which would further enhance aerodynamics.
- (h)** A boot spoiler may be fitted to the rearmost edge of the boot lid. This spoiler must be of the same material and dimensions as BMW part number **51 71 0 018 269**. No other style of wing or spoiler is permitted.
- (i)** The bonnet catch mechanism may be replaced with an alternative device provided the bonnet remains adequately secured.



- (j) The internal door structures may be modified to remove unnecessary weight, but the exterior door panels must remain standard.
- (k) The side windows may be replaced with an approved polycarbonate type material, such as Lexan. Holes or scoops may be added in the side windows for the sole purpose of ventilation.
- (l) Front Headlights and driving lights may be removed or lightened, but if removed headlights must be replaced by a good fitting blanking plate. The headlight blanking plate must not form any part of the induction system.

### **3.3 Modifications strictly prohibited:**

- (a) All spoilers, dams, splitters, aero foils and diffusers are prohibited, other than the spoiler mentioned in 3.2 (f).
- (b) The use of any under-trays, diffusers or any other aerodynamic device fitted to the underside of the vehicle other than those fitted as standard are prohibited but refer to 3.2 (d) & (e).
- (c) Except as specifically allowed no external body parts may be modified in any way to improve the flow of air around the vehicle or into the engine / engine bay.
- (d) Use of window tinting film is not permitted (refer to 13.1 (a)).
- (e) Plan view must be as standard with no extensions to wheel arches permitted.
- (f) All bumpers must remain in complete original condition. All bumper dampers, bumper mounting brackets, mounting points and trim must be retained as fitted standard by the factory. Tow hook covers may be removed.

## **4. INTERIOR**

### **4.1 Required Equipment / Modifications:**

### **4.2 Modifications permitted, but not mandated:**

- (a) An aftermarket steering wheel may be fitted but must comply with Appendix Two, Schedule A, Part 1, Article 6 of the MSNZ Manual.
- (b) Any interior trim, including dashboard trim, heat shielding and non-structural / unused metal brackets and fittings may be removed, but door locks and catches must remain in place, and operational, for safety reasons. Boot locking mechanism and catches are free.
- (c) The dashboard may be modified (but not removed entirely) to allow the fitting of the safety cage and the opening/removable glove box unit may be removed provided the dash remains securely fastened.
- (d) Interior door trim panels may be removed. If removed they must be replaced with an alternative door panel that protects the driver from sharp edges and the intrusion of metal structures in the event of a side impact.
- (e) The rear bulkhead may be modified to accommodate the safety cage. Where holes have been cut to fit the safety cage they shall be no more than twice the diameter of the safety cage member to be fitted.

- (f) A footrest may be added next to the clutch pedal.
- (g) The three pedal pads may be modified by the addition of a non-skid surface.
- (h) The heater / demisting unit can be removed provided the vehicle still has an effective method of demisting.
- (i) If a front passenger seat is installed this must also comply with 2.1. Appendix Two, Sch A, Part One, Article 4.7.

## **5. ENGINE & RELATED COMPONENTS**

### **5.1 Overview:**

- (a) Only the 24-valve, six-cylinder engine, designated M54B22, is eligible.
- (b) Except for the allowed modifications shown in these regulations no modification to the engine or any ancillaries, including the fuel or ignition systems are permitted. For the benefit of doubt, this includes grinding or machining or lightening. The engine must retain the standard specification block, pistons, crankshaft, con-rods, cylinder head, camshafts and valves. Balancing of engines by the removal or addition of material is specifically prohibited.
- (c) Unless otherwise stated, all parts must be the standard, Original BMW parts.

### **5.2 Cylinder heads:**

- (a) Only the following cylinder head part number is permitted: **11 12 7514 539**
- (b) The cylinder head may have the head gasket surface only skimmed (minimum cylinder head height 139.70mm), additionally cylinder heads may be cleaned and/or de-coked, but additional porting, and polishing, machining, or any other modifications are prohibited.
- (c) Valve seat inserts must be positioned as per the manufacturer's original specifications.
- (d) Valve seat inserts cannot be modified other than the machining of the valve sealing surface.
- (e) Valves must be original size and design.
- (f) Only the sealing edge of the valve may be machined as part of the reconditioning process. The profile of the valve, including head and stem, may not be modified in any other way.
- (g) Camshafts – only the following parts are permitted:
  - **Intake Camshaft must be BMW # 11 31 1438 079**
  - **Exhaust Camshaft must be BMW # 11 31 1435 416**

### **5.3 Lower Engine (Block, Pistons, Conrods, Crankshaft & Sump):**

- (a) Original BMW manufactured M54B22 pistons must be used. Oversized pistons are not permitted.
- (b) All three piston rings must be fitted per manufacturer's specifications and normal trade practice.

- (c) Conrods must be Original E46 BMW Parts. Under no circumstances can they be modified to alter their effective length.
- (d) Non-OEM BMW bearings may be used for the crankshaft. (Big-end & main bearings).
- (e) The crankshaft may have the bearing surfaces only machined during reconditioning to allow the fitment of oversized big-end and main bearings. However, offset grinding to alter the crank throw is strictly prohibited.
- (f) The standard sump may have baffles fitted to prevent oil surge. Any additional baffles cannot project above the gasket line between the upper and lower sump sections.
- (g) No other sump modifications are permitted, and no additional parts can be fitted to provide any form of windage or scraping effect.

#### 5.4 Fuel System:

- (a) Fuel pressure regulator, fuel rail and injectors must be the original part and no modification is permitted, including restricting vacuum supply.
- (b) The design and location of the fuel tank shall be as per manufacturer's specification.
- (c) The standard fuel pump must be used but the passenger side pickup can be modified to transfer fuel from the passenger's side across to the driver's side in tank to prevent fuel starvation, or a fuel starvation kit maybe used, however ensuring that 5.4 (d) is complied with. Refer to <https://www.bimmerworld.com/Intake-Fuel/Fuel-Filters/E46-Fuel-Starvation-Kit.html>
- (d) No swirl tanks or other means of fuel baffling is permitted.
- (e) Only fuel with an octane rating from 91 to 98 is permitted. It must be commercially available from a New Zealand service station forecourt pump.  
Fuel containing Ethanol or alternative biofuels, E85, Gull 98 (Force 10) etc are not permitted.
- (f) Fuel must be used as purchased - no fuel additives or blending is permitted.
- (g) Fuel samples may be taken for compliance purposes at any time during any BMWRDS event.

#### 5.5 Engine Miscellaneous:

- (a) Gaskets are open in terms of supply but must be manufactured to Original BMW specifications. Only one gasket may be used in any location. For the head gasket the following dimensions are supplied for clarification:
  - **Cylinder Head Gasket** Minimum non-compressed thickness = 0.7mm
- (b) Aftermarket Flywheel's are permitted however they must be 240mm in diameter and have a minimum weight of 6.7Kg's.

**Note:** These weights are inclusive of the three dowels, Ring Gear and Crank Bolts but exclude all other components.

- (c) Throttle bodies cannot be modified in any way. For the avoidance of doubt the 320i standard throttle body diameter measured at the butterfly should be 65.0mm. Part Number **1354-7-502-444-05**.
- (d) The induction system must retain the standard airflow meter and throttle body with the exception of the intake boot which may be replaced with the Turner Motorsport Silicone Intake Boots with the following part numbers: 001687TMS01-01 or 001687TMS01-02. Upstream of the airflow meter is free. No mechanical or electrical forced induction is allowed. For the avoidance of doubt air intake ducting cannot be channelled through any additional holes cut into body work or other components.
- (e) The standard exhaust manifold may be replaced with the factory E46 325/328 unit or E36 320 unit, part numbers **11 62 1706 538, 11 62 1706 539, 11 62 1740 731, 11 62 1740 730**. They must be fitted in the factory position. No coatings, exhaust wrap or modifications is permitted on or to the exhaust manifold. The remainder of the system is free providing that it shall conform to current track noise limits and exits from the rear of the car.
- (f) The standard viscous cooling fan may be removed. The addition of a single electric cooling fan is permitted, and the removal of the factory electric air conditioning fan, if fitted, is permitted. The original radiator cowling may be removed but cannot be replaced by a non-standard cowling. Coolant hose material is free and may be modified to accommodate an additional temperature sender unit.
- (g) Only Original BMW radiators that were factory-fitted to an eligible E46 model, or a direct OEM equivalent replacement, are permissible. To avoid any uncertainty, the use of full aluminium radiators is strictly prohibited. The original radiator mounting points must be used.
- (h) The installation of direct OEM replacement expansion/header tanks, including direct aluminium replacements, is allowed. However, these must be positioned identically to the original and utilize the original mounting points.
- (i) Only standard, genuine E46 320i BMW Siemens MS43 ECU can be used.
- (j) The standard ECU can be remapped, but any aftermarket or Piggyback ECU's are not permitted. The OBD2 port must remain accessible and available for the purpose of reading the ECU's tune or for the installation of a series datalogging device. The tune must be able to be read from the OBD2 port.
- (k) Rev limits must be a maximum of 7000 rpm.
- (l) Engine mounts are free in material, and the fitment of aftermarket mounts is also allowed provided they support the engine in the same position as the original mounts and retain the OEM standard height.
- (m) Oil coolers are permitted, in addition an oil catch can may be fitted as per Appendix Two, Sch A, Article 5.1 (5).
- (n) Any camshaft and crankshaft angle sensors must remain in their standard unmodified location. This means that mounting points cannot be modified or slotted.
- (o) The use of applied High Performance or Friction Coatings on any internal engine or gearbox components is prohibited.
- (p) The Standard Air Flow Meter Part No **13 62 1 432 356** with a diameter of 70.0mm, must be used and unmodified.

- (q) The Standard 320i DISA valve must be used and unmodified.
- (r) Underdrive pulleys are permissible on the alternator, power steering pump and water pump.
- (s) It is permissible to fit an aftermarket thermostat and thermostat housings provided they are installed in the factory location.
- (t) Aftermarket Power steering reservoir caps may be fitted included vented ones. If vented, it must be plumbed into a suitable catch can.
- (u) Only spark plugs with part numbers BOSCH FGR7DQP or NGK BKR6EQUP shall be used.

## **6. SUSPENSION**

### **6.1 Mandatory Equipment / Control Parts**

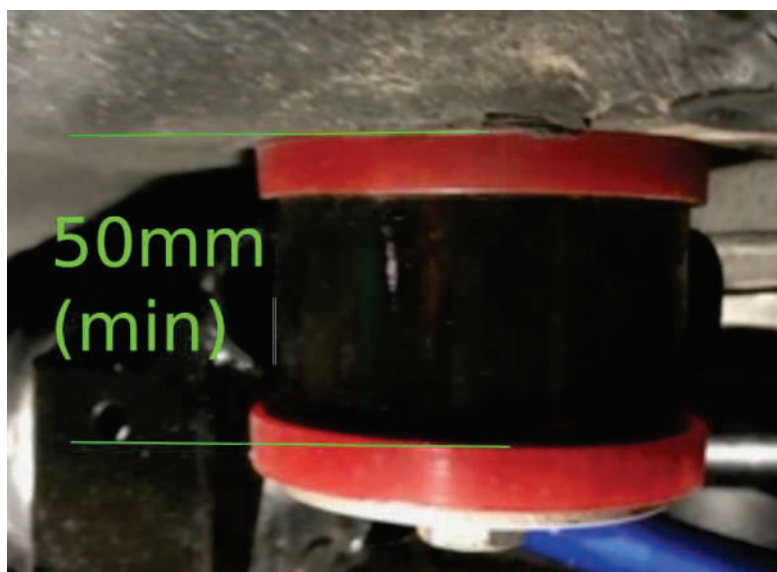
- (a) Permitted suspension packages are as follows:
  - (i) KONI E46 Series Coil Over Kit - Part number **KONI-E46-RS**
  - (ii) Fortune Auto 500 Series Coils Over kit -Part number **FA-500-E46**  
**Supplied by:** MRP Ltd  
**Phone:** New Zealand 021 2949461  
 International +64 212949461  
**Location:** Suburb: Rosedale Postcode: 0632 City: Auckland  
**Email:** sales@mrpltd.co.nz
- (b) Each suspension kit must be used in its entirety, and no mix/matching between the two packages is allowed. No additional non-kit supplied items shall be fitted.
- (c) Dampers may only be serviced/rebuilt to the original damping characteristics using the approved service agent.
  - (i) The KONI suspension package is only authorised for service at George Stocks & Company LTD.
  - (ii) The Fortune Auto suspension package is only authorised for service at Suspension Tech Limited.  
**Phone:** 09 273 1232

### **6.2 Permitted Equipment / Modifications**

- (a) Springs are free in terms of rate and brand, but must be linear in design and not of a light weight material such as titanium. However, this is restricted to one active coil per corner (excluding keeper springs), with stacked "active" coil springs not permitted.
- (b) Separate spring spacers for ride height adjustment are allowed, however only the adjustable front camber plates as supplied with the chosen suspension package in 6.1 are permitted.
- (c) The front strut mount location can be relieved to obtain the maximum allowable camber as per 6.2 (k) however no material can be removed or added.
- (d) A spacer with a consistent thickness up to 8mm is allowed to be fitted between the top of the front struts and the strut tower. The spacer must maintain a uniform thickness throughout its entire structure.



- (e) Suspension bush material is free, provided they are not made entirely of metal.
- (f) All suspension bushes must only use the original unmodified mounting points and brackets, however offsets within bushes are permitted.
- (g) Fitment of a retention screw is permitted on front caster arm bushings, where aftermarket bushings are fitted to prevent rotation of the bushing.
- (h) Adjustable Rear lower arms are permitted to allow for rear camber adjustment.
- (i) Only standard OEM BMW E46 front and rear anti roll bars with a maximum size of 24mm Front and 18mm rear diameter are permitted. Fitment of front bar is compulsory, fitment of rear bar is optional.
- (j) Adjustable anti-roll bar linkages can be used in replacement of OEM linkages. Provided that they are only manually adjustable to aid in corner weighting. Spherical bearing type ends are not allowed. They may be of steel and/or aluminium construction.
- (k) The maximum allowable negative camber is 3.5° at the front wheel per side and 3° at the rear wheel per side measured on a level surface with the car in full race trim meeting minimum weight requirements including driver.
- (l) Minimum ride height is 100 mm under the front and rear factory jacking points (excluding jacking pads) with driver installed and vehicle at minimum racing weight. Ride height measurement shall be taken at any time during a BMW RDS event. For the purposes of ride height measurement, the tyres shall be set to 30 PSI.
- (m) **Subframe Mounting**
  - (i) The bushing material for mounts between subframe and chassis is not restricted.
  - (ii) The mounting through the bush must be centrally located. No offsetting is permitted.
  - (iii) The minimum vertical distance between the chassis and the bottom of the mount cup must not be less than 50mm compressed height.



### 6.3 Suspension Modifications Prohibited

- (a) No changes to suspension pick up points are permitted.
- (b) Unless permitted under Article 6.2, all suspension components must be of the same design and made of the same material as that on the standard vehicle. Specifically, aluminium components may not be used to replace steel components (or vice versa) and no component may be replaced with a composite material or alloys that include any element of Titanium or Magnesium.
- (c) No alterations to suspension geometry are permitted other than that available on the standard car or as part of a permitted modification under Article 6.2.
- (d) Rod ends or other spherical bearings are not permitted except where permitted under Article 6.2.

## **7. DRIVE-TRAIN**

### **7.1 Clutch**

- (a) Aftermarket clutches are permitted, provided the clutch disc diameter is 240mm. Clutch covers made from materials other than steel are prohibited. Modifying the clutch cover to reduce weight is prohibited.

### **7.2 Gearbox**

- (a) Only the factory 5 Speed Getrag 220 and ZF gearboxes are permitted.
- (b) Gear ratios must be as supplied with the gearbox in production form with a 1:1 5th Gear.
- (c) Aftermarket Short shift gear levers are permitted.
- (d) Gearbox mounting and location points must be retained and used as intended by the manufacturer.
- (e) A factory BMW E46 accelerator and brake pedal must be used, however a Mini (R56) clutch pedal may be used in lieu of the BMW pedal.
- (f) The Guibo must be OEM or a direct OEM rubber style replacement.

### **7.3 Differential**

- (a) Either a BMW 168 "small" or 188 "medium" differential can be used, provided the factory E46 differential mounting and location points are preserved and used in accordance with the manufacturer's original design and intention. Modifications to these points are not permitted.
- (b) The final drive ratio of the differential must be 3.9:1.
- (c) Limited slip or locking differentials are prohibited. Furthermore, the differential (including all internal components) cannot be modified in any way or have any parts added that might provide any kind of locking or additional frictional action.
- (d) The differential mount bushes can be replaced. Replacement material is unrestricted. The mounting through the bush must be centrally located. No offsetting is permitted.

## **7.4 Drive Shaft & Axles**

- (a)** Aftermarket drive shafts are permitted for use provided they are composed of steel. The use of aluminium or carbon fibre drive shafts is expressly prohibited.
- (b)** The drive shaft must be of a two-piece design. Single-piece drive shafts are not allowed.
- (c)** The centre support bearing must remain in the factory position.
- (d)** Axles must be OEM BMW E46 units.

## **8. ELECTRICAL**

### **8.1 Required Equipment / Modifications:**

- (a)** The battery can be moved from its factory location. Size and type are free.
- (b)** The battery must be fitted in accordance with Appendix Two, Sch A, Part One, Article 5.5 of the MSNZ manual.
- (c)** The alternator must remain in its standard configuration and be operational at all times while the engine is running.
- (d)** Circuit breakers or battery isolating switches can be fitted so long as they comply with Appendix Two, Sch A, Part One, Article 5.4 (2) of the MSNZ manual.

### **8.2 Modifications permitted, but not mandated:**

- (a)** Electrical controls (e.g. window switches and light switches) may be repositioned as required to accommodate any permitted changes to the interior trim.
- (b)** The fitment of a simple shift light (to an rpm source), auxiliary gauges and video recorders are permitted as long as these do not contravene any MSNZ regulations and are adequately secured.
- (c)** The fitment of “standalone” lap timers, including GPS units is permitted as long as such fitment and use does not contravene any regulations from the meeting organizers or MSNZ.  
When fitted these must not require any driver input during a race and must connect to the car for power supply only.  
Connecting to the cars wiring loom for the installation of additional sensors or electronics, including data logging or electronic dash displays is permitted.
- (d)** The following items originally fitted as standard, or as optional extras to the vehicle, may be removed along with any associated wiring:
  - (i)** Cruise control.
  - (ii)** Air conditioning and / or electric fans including heater and demister, however must still comply with 4.2 (h).
  - (iii)** Reverse sensors.
  - (iv)** Air bags including associated ECU, sensors, modules.
  - (v)** Interior courtesy lamps.

- (vi) Boot illumination.
- (vii) Glove box illumination.
- (viii) Electric window switches and winder mechanisms.
- (ix) Electric mirror control switch, providing mirror adjustment is still available.
- (x) Front fog lamps and switchgear.
- (xi) In-car entertainment systems, including speakers, amplifiers, aerials and head units.

### **8.3 Modifications strictly prohibited:**

- (a) No devices may be added or modified to provide any form of aftermarket traction control, launch control or full throttle gearshifts.
- (b) Electrical switches can only be used to operate the function for which they were originally fitted into the car for, and for no other additional purpose.
- (c) Aside from any permitted modifications listed in these regulations, including the rerouting of existing wiring, no other changes may be made to the electrical system.

The OEM wiring harness / loom must be retained other than for exceptions in 8.2 (c) & (d).

## **9. BRAKES**

### **9.1 Required Equipment:**

- (a) The braking system shall be standard Original BMW equipment, including master cylinder, brake booster, metal brake lines, wheel cylinders and brake calipers. All braking system components must comply with Article 9.2 (c).

### **9.2 Modifications permitted:**

- (a) Brake pad and shoe material is free, but dimensions are to remain as per original equipment.
- (b) Brake discs are free in terms of supply but must be of one-piece steel construction. Slotted and/or drilled rotors are permitted.
- (c) Standard front discs have a maximum diameter of 286mm and thickness of 22mm. These may be replaced with front discs (and calipers) from E46 325i / 328i models. These discs have a diameter of 300mm and a thickness of 22mm.
- (d) Rear discs as per standard fitment. With a diameter of 276mm and thickness of 19mm.
- (e) The flexible rubber portion only of the brake lines may be replaced with a steel braided brake line.
- (f) To improve front and rear brake cooling the removal of OEM splash guards / backing plates only is allowed. Also allowed for brake cooling is the addition of ducting, but this cannot be designed in any way which would otherwise enhance aerodynamics.

- (g) The standard ABS system can be disabled or removed entirely. No changes to the ABS units programming is permitted.
- (h) An adjustable brake proportioning valve may be fitted to the rear brakes.

### 9.3 Modifications strictly prohibited.

- (a) Aftermarket ABS systems are not permitted.

## **10. RIMS & TYRES**

### **10.1 Rims**

- (a) The rims must adhere to specific regulations regarding size, weight, and offset.
  - (i) Rim diameter must be 17 inches.
  - (ii) A rim must have a minimum weight of no less than 7.7 kilograms.
  - (iii) The maximum allowable width for the rim is 8.5 inches.
  - (iv) The maximum width of a spacer is 25mm.
- (b) Offset limitations are based on rim width and front/rear axle.
  - (i) For 17×8.5 inch rims, the total effective positive offset, inclusive of any spacer, must be no less than ET40 positive offset for rear axle, and no less than ET15 positive offset for front axle.
  - (ii) For 17×8 inch rims, the total effective positive offset, inclusive of any spacer, must be no less than ET35 positive offset for rear axle, and no less than ET10 positive offset for front axle.

*For instance, a 17×8.5 inch rim with an offset of ET45 may use up to a maximum 5mm spacer to achieve an effective positive offset of ET40 on the rear, and a 25mm spacer for the front, for an effective positive offset of ET20. (limited by maximum spacer width of 25mm).*

- (c) No modifications to the external surface of wheel arches are permitted. The tire should not interfere with either the body or chassis when the steering is turned, regardless of static or dynamic suspension load conditions.

### **10.2 Tyres**

- (a) The control tyre for the E46 Championship is the Nexen 225/45R17 N'FERA SUR4G.
- (b) It is prohibited to alter the tread or tread pattern of the tires. For clarification this includes re-grooving, buffing, skimming, or any other method, including chemical application.

## **11. WEIGHTS**

- 11.1** Minimum post-qualifying & post-race weight including driver for all competing vehicles is **1275kgs**. All cars must be presented for weighing as part of the Parc Fermé rules after each qualifying, **and** race session. Drivers who do not present their cars for weigh-in may receive point penalties and/or be disqualified from the qualifying session or race.

- 11.2** As long as no other rules are breached regarding vehicle modifications it is at the driver's discretion how and where any additional weight is achieved, subject to App Two, Schedule A, Part One, Article 6.1 of the MSNZ Manual.

## **12. PARC FERMÉ**

- (a) All cars automatically enter Parc Fermé conditions following any qualifying or race sessions and must proceed immediately to the designated Parc Fermé area, which is the series weighbridge (unless otherwise specified). Delayed arrival may be considered an immediate breach of Parc Fermé conditions.
- (b) Only the presence of the driver and one additional team member is permitted alongside **their** car in the designated Parc Fermé area.
- (c) Tyre pressures and tyre temperatures may be checked while the car is in line, provided there are no delays.
- (d) Any other checks or alterations to the car are strictly forbidden under Parc Fermé conditions, unless approval is given by a BMWRDS Official.
- (e) No items are to be added to or removed from the vehicle during Parc Fermé.
- (f) The continuation of Parc Fermé conditions applies until an official notification from a BMWRDS Official or their appointee, and the vehicle, driver and additional team member shall leave the Parc Fermé area immediately following this.

## **13. VEHICLE LIVERY**

*All decals shall be applied in accordance with the graphic in Appendix One.*

**13.1** The following **supplied** decals are **mandatory** and shall be fitted as supplied to all race cars at all BMW Race Driver Series Rounds.

(a) **NEXEN Tyre Windscreen Banner**

Using a minimum 100mm of the banner and up to the full width of the banner.

***Note:** To provide sun shading, additional material may be added below the windscreen banner, to a maximum total depth of 200mm at any point, including the windscreen banner. This additional material shall be a single solid colour in black or plain colour.*

(b) **NEXEN Tyre decal**

Applied to both front guards in accordance with Appendix One.

(c) **NEXEN Tyre / DTM decal**

Applied to the boot lid, left hand side.

(d) **Pacific Resort Decal**

Applied to both front guards in accordance with Appendix One.

(e) **E46 Decal:** to be fitted to both rear side windows, as well as the front and rear windscreens, as illustrated. The BMW Race Driver Series Committee may allow variances at their discretion.

(f) **Novice Sticker:** Must be run in a visible location on the rear of the car. Regardless of previous race experience in other classes, drivers who are new to the NEXEN Tyre E46 Class must carry this sticker for a minimum of three full BMWRDS rounds.



**13.2** The following decals are to be **supplied by the competitor** and are mandatory. These must be fitted to all race cars at all BMW Race Driver Series Rounds.

**(a) Race Numbers**

- (i)** Must be on both sides of the vehicle and printed onto or included inside the number box. Minimum of 280mm high, stroke of 50mm, solid black on a white background. Font shall be Helvetica, or similar. Shall be located within 40mm of the front of the door panel, and;
- (ii)** Must be on both front and rear screens, on the upper corner of the passenger side. Minimum of 150mm high, 20mm stroke, in Helvetica or similar font. Numbers should be white. The current championship leader at the start of the round may elect to use fluoro yellow instead for the duration of the round.

**(b) Driver Name**

The driver surname at a minimum must be shown on both rear side windows, close to lower edge, minimum of 80mm high, 10mm stroke, white or fluoro yellow/green in Helvetica or similar font.

**13.3 Personal Signage:**

The following restrictions apply to any personal signage or sponsorship carried on race cars at all BMW Race Driver Series Rounds.

- (a) Front Screen:** This area is reserved exclusively for the series sponsor and apart from screen numbers, no other signage can be carried on the front screen.
- (b) Rear Screen:** Personal advertising may be fitted to the rear screen, so long as it complies with App Two, Schedule A, Part 1, Article 5.11 (a) of the MSNZ Manual and to Warrant of Fitness regulations (if applicable).
- (c) Number Boxes:** No personal signage is to be fitted to the front doors in the area immediately above or below the official race number box, or within 50mm either side of the box. It is permissible however to carry personal signage anywhere on the sills provide it complies with all other regulations regarding signage.
- (d) Competitive Signage:** No signage for any brands that compete with any of the series sponsors can be carried on the front section of the car.

**Note:** *The front section of the car is defined as being all panels “forward of a line through the rear edge of the number boxes on each door”.*

*The Committees decisions on any conflicting advertising are final, as are any decisions to introduce new/additional series sponsors.*



## E46 SERIES SPONSORS DECAL PLACEMENT

