E30 Racing Inc.

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Specifications of Automobiles

3rd Category – Touring Cars E30 Racing Cars

2021

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E30 Racing Inc. Summary

E30 Racing Cars has been established to provide an enjoyable, affordable entry-level touring car category. The aim is to provide close competition and to emphasise driver ability rather than driver expenditure. E30 Racing Inc. is ultimately responsible for the approval of the regulations or changes thereto, and responsible for publishing the regulations via the E30 Racing Website and associated bulletins as necessary. E30 Racing Inc. is the sole entity representing competitors in this category.

E30 Racing Inc. is the sole entity which may make recommendations regarding maintenance and/or proposed changes to technical regulations for this category and/or sporting regulations for the conduct of competition activity for such vehicles.

E30 Racing Inc. will be responsible for consultation processes within its membership and with other interested parties as may be appropriate from time to time.

Vehicles shall conform to the General Requirements of Automobiles as laid down in “General Requirements for Cars and Drivers” in the Motorsport Australia Manual of Motor Sport and these regulations.

1. DEFINITIONS

1.1 ***E30 Racing Car:*** A race vehicle derived from a BMW E30 coupe or sedan as marketed by BMW Australia during the period 1983 to 1991.

1.2 ***Original parts:*** Reference to “Original” in respect of parts or components means original BMW parts or components as marketed by BMW Australia for the E30 or original equipment (OE) equivalents that are identical in configuration and functional dimensions.

1.3 ***Engine Type:*** This means the complete original engine type configuration, including (but not limited to) induction, injection, ignition, cooling, lubrication, flywheel, clutch and electronics.

1.4 ***Coachwork:*** All entirely sprung parts of the car in contact with the external air stream, except the parts definitely associated with the mechanical functions of the engine, transmission and running gear.

1.5 ***Wheel:*** This means the complete wheel: flange, rim and tyre and any additional fittings.

1.6 ***Traction control:*** Traction control is defined as any form of program, device, system or mechanism for the purpose or effect of preventing or limiting loss of traction. The direct control of the throttle position or brakes as affected by the driver does not fall within this definition.

1.7 ***Wiring loom:*** The bundle of wires used to carry current or electrical signals from one component to another. Any component attached to the wiring loom by any form of connection shall not be considered part of the wiring loom.

1.8 ***Elastomeric bushings:*** Suspension components utilising an elastomer (eg, rubber, polyurethane) to permit freedom of movement in three axes at suspension pivot points. Where the bush incorporates an outer metal shell and/or central crush tube, they shall be regarded as part of the bushing. Where the bushing is integral with the arm or other secondary component, only the elastomer material shall be regarded as the bushing for replacement purposes.

1.9 ***Decorative strips:*** Any parts following the external contour of the bodywork and less than 100mm high, the function of which is to prevent minor body damage or is decorative. Badges describing the vehicle manufacturer and/or model are considered to be within this definition.

1.10 ***Telemetry:*** The transmission of data from a moving car. A timing transponder required by regulation shall not be regarded as telemetry.

1.11 ***Minor reshaping:*** Reshaping of existing material. This excludes the addition, replacement or removal of material and must not result in a loss of integrity of the panel.

1.12 ***Free:*** A component, deemed to be free under these regulations may, where fitted to the vehicle as standard, be removed or replaced. Where the removed component is replaced, the replacement is not restricted in design or material (unless otherwise specified) providing it performs only the same function. No modification may be made to surrounding components or body-work to which the replacement is fitted, unless otherwise permitted.

Where freedom is granted for the fitment of any component, such freedom is restricted to that component and such modifications as are allowed in Article 3.11. For the purpose of this article, a component shall be deemed to include all other components with which it is integral, or to which it is attached by means the manufacturer intended to be permanent. Where a system is deemed as free, all components solely associated with that system are regarded as free, as per above.

1.13 ***Control component:*** Where a part or component is referred to in these regulations as a “control" part or component, it is to be supplied in accordance with E30 Racing’s 'Control Components Supplier Directive' which will be published each year at the same time as the

technical regulations, and which may be reviewed and updated from time to time by the E30 Racing Committee to ensure adequate and timely supply of control components.

2. REGULATIONS

2.1 ***Role of E30 Racing Inc.:*** The following technical regulations for E30 Racing Cars are issued by E30 Racing Inc. and must be read in conjunction with the relevant Schedules of the "General Requirements for Cars and Drivers" of the Motorsport Australia Manual of Motor Sport.

2.2 ***Publication date for amendments:*** Each year in January at the latest, E30 Racing Inc. will publish all changes made to these regulations on the E30 Racing website. Changes made for safety may come into force without notice. E30 Racing Inc. reserves the right to alter regulations at its discretion in accordance with the E30 Racing Inc. Constitution.

2.3 ***Permanent compliance with regulations:*** Vehicles must comply with these regulations in their entirety at all times during an event, save through any damage or malfunction sustained in competition.

2.4 ***Measurement:*** All measurements relevant to the bodywork and suspension must be made while the car is stationary on a flat horizontal surface, at Racing Weight (see definition of '**Racing Weight**' in the Motorsport Australia Manual of Motor Sport; Specifications of Automobiles; Definitions – Technical), and with the steering centred. E30 Racing Inc. may specify scrutineering procedures and tolerances for the measurement of vehicles as required by these regulations and such procedures will be published in the Eligibility Standards prior to the commencement of the championship each year.

2.5 ***Log book/Eligibility:*** The Competitor is wholly responsible for the eligibility of their vehicle. Vehicles will be inspected at the discretion of E30 Racing Inc.; any breach of eligibility will be subject to penalties. These penalties are in addition to any penalties imposed by the stewards of the meeting.

2.6 ***Modifications:*** The entire vehicle must remain unmodified except for specific freedoms allowed in these regulations and modifications necessary to comply with the "General Requirements for Cars and Drivers" in the Motorsport Australia Manual of Motor Sport ("the Motorsport Australia Manual"). Unless specifically provided for in these regulations, BMW OE parts and components must be used (refer also to Article 16.1).

3. BODYWORK AND DIMENSIONS

3.1 ***Appearance requirements:*** Bodywork colour is free. All bodywork, including any subsequent repair of race day damage, shall be to a tradesman-like standard and must permit the vehicle to be presented in as near to original condition as is possible. All vehicles must display the signage supplied by the series in the required locations.

3.2 ***Tyre clearance:*** For the purpose of wheel and tyre clearance minor reshaping of impinging bodywork is permitted provided the external appearance of the bodywork around the wheel arch is unchanged. It is permitted to remove plastic stone shields from within the wheel arch.

3.3 ***Front spoilers/air dams:*** It is permitted to fit an E30 M3-style Air dam to the front of the car (refer to Appendix A(i) for accepted front air dams), subject to the following restrictions:

(i) **It must be completely contained** within the vertical projection of the original non-M3 E30 vehicle.

(ii) **No part below a horizontal plane** passing through the centre of the wheel hubs at their extremities may extend further rearward than the wheel arch opening at the forward point where it intersects this plane.

(iii) **No part above a horizontal plane** passing through the centre of the wheel hubs shall extend into the wheel arch opening.

(iv) **Any under tray fitted** to the air dam and located further than 50mm from the extremity of the air dam shall be flat and parallel to the vehicle sills and shall be regarded as part of the front air dam. Any under tray fitted to the air dam must be permanently attached without a mechanism for adjustment.

(v) **The air dam may incorporate** and replace the front bumper bar fascia provided that it retains the profile of the original.

(vi) **The air dam must be constructed** of a glass fiber reinforced composite material. The use of carbon and/or aramid fibers is forbidden.

3.4 ***Rear deck spoilers:*** The only permitted rear deck spoiler is the original E30 spoiler (BMW Pn: 51 71 1 945 710).

3.5 ***Aerodynamic aids:*** Side skirts are not allowed.

3.6 ***Vehicle embellishments:*** External decorative strips and mud flaps may be removed and attachment holes filled, but original rear bumper strips must be used. Sump guards/splash guards may be removed.

3.7 ***Registration plates:*** Registration plates, registration plate mountings and associated lighting components may be removed.

3.8 ***Sound deadener:*** Sound deadener (bitumen and fabric types etc) may be removed from the body shell and hung panels.

3.9 ***Windscreen and mirrors:*** The windscreen must be of laminated glass, and may incorporate defrosting equipment. A functional device for the demisting of the forward windscreen must be fitted and operational. Original E30 external rear view mirrors must be used.

3.10 ***Window regulators:*** Where a car is fitted with original electric window regulators, it is permitted to replace them with original manual window regulators. Electric door lock actuators must be removed or rendered inoperative.

3.11 ***General:*** Holes may be drilled for fasteners, eg. bolts, screws, rivets etc. Holes of the minimum necessary dimension are permitted to be made for the passage of wiring, fuel and brake lines/hoses.

3.12 ***Timing device:*** It is permitted to remove the minimum amount of metal necessary to facilitate fitment of a timing transponder to the upper surface of the cockpit floor. The transponder must be located in the front left floorpan.

3.13 ***Brackets:*** Unused brackets/supports attached to the chassis/bodywork may be removed, unless they are supports for mechanical/suspension components that are not permitted to be moved or removed.

3.14 ***Floorpan:*** It is permitted to modify the floorpan in the immediate area of the front seats to permit the fitment of replacement seats. No part of the modified bodywork may extend any lower than the surrounding bodywork.

3.15 ***Door anti-intrusion bars:*** The side anti-intrusion bars may be removed from the doors subject to the roll over protection structure providing lateral protection in the same general area for any occupant.

3.16 ***Racing weight:*** Minimum racing weight is 1130 kg.

3.17 ***Ballast:*** Ballast complying with Motorsport Australia requirements may be used to achieve the minimum racing weight requirements (refer to Article 3.16).

3.18 ***Trunk compartment trim:*** Trunk floor carpet and associated “underfelt” and trim panels may be removed.

3.19 ***Sunroof:*** The sunroof and/or its mechanism may be removed provided that the sunroof, or a steel panel of free design, is securely sealed in place flush with the roofline. A non-metallic sunroof must be replaced by a steel panel.

3.20 ***Tow hooks:***

(i) **Front tow hook:** The front tow hook must be either the Soft/webbing strap type, or foldable soft metal type which must have the ability to fold on impact and does not extend beyond the vertical projection of the vehicle’s front spoiler/aim dam when folded.

(ii) **Rear tow hook:** The OE rear tow hook must be retained and appropriately marked/identified.

4. ENGINE

4.1 ***General:*** Engine block, head, engine wiring loom and all components directly associated with their function must be original BMW E30, except as specifically provided for in this section. Provision must be made for sealing engines sump to block, and head to front cover (refer Appendix A(ii)). They must be one of the following types and remain unmodified except for the specific freedoms specified in this section:

(i) **M20B25** (2500cc I6 SOHC Motronic 173 ECU) as fitted to the E30 325i. Bore: 84mm. Stroke: 75mm.

(ii) **M20B23** (2300cc I6 SOHC) as fitted to the E30 323i. Bore 80mm. Stroke 76.8mm.

4.2 ***Cylinders and cylinder head:***

(i) **The maximum allowable overbore** is 1.0mm. (0.040") Original connecting rods and crankshaft must be used.

(ii) **M20B25:** Original 9.7:1 compression ratio pistons from the non-catalyst E30 325i, or the **JE Pistons** equivalent may be used.

Part Number JE - 63717-840, 84mm (STD) 9.7:1
Part Number JE - 63717-845, 84.5mm (0.50mm/020" oversize) 9.7:1
Part Number JE - 63717-850, 85mm (1.0mm/004" oversize) 9.7:1

(iii) **The maximum compression ratio** is 10.0:1. Original cylinder head mounting surface may be machined parallel to the original surface.

(iv) **Porting/matching**
Modification of intake ports and exhaust ports (cylinder head) is allowed, but the addition of material (any) is forbidden.

Modification of inlet manifold is allowed only to enable port matching of inlet manifold port runner to inlet port cylinder head, with the allowable transition modification of a maximum 20mm from the port runner end at cylinder head face, back inward of the inlet manifold port runner can be applied. No other modifications are permitted to the inlet manifold.

(v) **Rocker Arms**
Only the OE Rocker Arms (BMW Pn. 11331271429) or Ireland Engineering Heavy Duty Rocker Arms (SKU No. m20rarmHD) are permitted to be used.

4.3 ***Camshaft:***

(i) **M20B25:** A control camshaft must be used. This must be an original camshaft that has been checked and ground to the E30 Racing specifications by:

Clive Cams
Address: 4/35 Clyde Street, Ferntree Gully VIC 315
Phone: (03) 9758 5977

Receipt of the job required for approval. NOTE: Camshaft will be checked once installed.

(ii) **M20B23:** Original camshaft must be used. This must be checked to the original specifications by **Clive Cams**. Receipt of the job required for approval. Camshaft will be checked once installed.

4.4 ***Camshaft pulleys:*** Original pulley may be modified to correct cam timing, or an adjustable pulley of free design may be used. Any adjustment of the pulley is free.

4.5 ***Air intake:*** The following engine air intake systems may be utilised:

(i) **M20B25*:***

(a) Original Air Flow Meter (AFM) as per engine type must be used (BMW Pn. 13 62 1 284 407 or Bosch Pn. 0 280 202 031), and remain unmodified.

(b) A control Miller Performance Gen III Mass Air Flow (MAF) System (Miller Pn. GENIIIE30R) may be used as an alternative to the original AFM. No other MAF system is permitted.

(ii) **M20B23*:*** Original AFM as per engine type must be used (BMW Pn. 13 62 1 284 407 or Bosch Pn. 0 280 202 031), and remain unmodified.

(iii) **The air filter:** assembly upstream of the airflow meter (AFM or MAF) may be replaced by one of free design provided that it attaches to the body of the AFM or MAF without any modification to the AFM or MAF, and that it does not exceed a maximum length of 320 mm from inlet to AFM or MAF system.

(iv) **Original throttle body:** may be machined to a maximum internal diameter of 64mm, and a matching butterfly valve may be fitted. Throttle cable bushings may be replaced by units of free design.

(v) **The throttle body:** heater, idle control valve, carbon canister, exhaust gas recirculation system, and any associated hoses and/or plumbing may be disconnected and/or removed, and the resulting hole(s) plugged.

4.6 ***Ignition***: Spark plugs and ignition wires are free. Original ignition coil, distributor cap and rotor button as per engine type must be used.

4.7 ***Engine management:***

(i) **M20B25*:***

(a) **Original AFM:** A control ECU (Electronic Control Unit) must be used. This must be an original, unmodified ECU as per engine type (M20B25: Bosch Pn. 0 261 200 173) that has been checked and sealed by **Logicar Australia** (147 Rooks Rd, Vermont VIC 3133, Ph: (03) 9210 3600. The seal must remain intact at all times. An ECU for use with the Original AFM which has been sealed by **Injectronics Australia Pty Ltd** prior to 1 January 2017 is permitted to be used provided the seal remains intact.

(b) **Miller Performance Gen III MAF:** When the control MAF air intake system is used, a control chip will be supplied, installed and sealed utilising the original ECU (M20B25: Bosch Pn. 0 261 200 173) with the Miller Performance Gen III MAF system. The MAF control chip has been designed for E30 Racing Inc. specifications and includes security features that will prevent the chip data and tune being able to be read or modified. The seal must remain intact at all times.

(ii) **M20B23*:*** Original ECU and ROM chip as per engine type must be used. This must be checked and sealed by **Logicar Australia** (147 Rooks Rd, Vermont VIC 3133, Ph: (03) 9210 3600). The seal must remain intact at all times. An ECU for use with the Original AFM which has been sealed by **Injectronics Australia Pty Ltd** prior to 1 January 2017 is permitted to be used provided the seal remains intact.

(iii) **Control ECUs** and or chip sets may be removed and exchanged between vehicles at the discretion of E30 Racing Inc.

4.8 ***Engine mounts:*** Additional strengthening may be added to the mounts provided original engine mounting points and functional dimensions are retained.

4.9 ***Telemetry:*** The use of telemetry is forbidden, other than expressly provided for by Article 13.9.

4.10 ***Exhaust:*** The complete exhaust system is free downstream of the exhaust port provided it complies with Schedule B of the Motorsport Australia Manual (refer “General Requirements for Cars and Drivers”), all outlet pipes are directed rearwards and the exhaust exits in the original location. The original exhaust mounting brackets may be removed and additional brackets may be fitted, provided that their sole function is the location of the exhaust. The use of any non-ferrous alloy (e.g. titanium) in the exhaust system is forbidden.

4.11 ***Engine Wiring Loom:*** The original BMW E30 engine wiring loom accompanying the permitted engines referred to in Article 4.1 are to be used, save that the following additional engine wiring looms may also be utilised only with the **M20B25** engine:

(i) engine wiring loom from M20B25 engine fitted to the BMW E34 525i (series 1);
(ii) engine wiring loom from M20B20 engine fitted to the BMW E34 520i (series 1); and
(iii) engine wiring loom from M20B20 engine fitted to the BMW E30 320i (series 2).

5. PIPING AND FUEL TANKS

5.1 *Fuel tanks:*

(i) **The fuel tank:** The fuel tank may be replaced by one of free but safe design; an FIA-approved bladder tank is recommended. Where the standard/OE fuel tank is retained or the replacement is not an FIA-approved Safety tank, it must be fitted with anti-spray foam in conformity with Schedule N of the Motorsport Australia Manual (refer "General Requirements for Cars and Drivers").

(ii) **Location:** It must be mounted in the same general location in relation to the floor pan and nearest axle centerline or it may be mounted in the boot area. Where a tank is relocated to the boot area the replacement rank must be an FIA-approved bladder tank. Where the tank is mounted in the boot, a flame-proof and liquid-proof bulkhead must be fitted between the tank and driver.

(iii) **Where the standard fuel tank** is not retained, external tank fillers are not allowed.

5.2 *Fuel system:*

(i) **Fuel pumps**, fittings, fuel lines and filters are free. A swirl pot of free design may be added. Where the fuel lines pass through the cockpit, there must be no connections within the cockpit save at the front and rear bulkheads.

(ii) **M20B25:** Original fuel pressure regulator as per engine type must be used (BMW Pn. 13 53 1 722 040 or Bosch Pn. 0280 160 237 / 0 280160 249 / **0 280 160 294**) and located in the original location. Fuel pressure must not exceed 3.2 bar.

(iii) **M20B23:** Original fuel pressure regulator as per engine type must be used (BMW Pn. 13 53 1 722 039 or Bosch Pn. 0280 160 225 / 0 280160 240) and located in the original location. Fuel pressure must not exceed 2.5 bar.

(iv) **Modifications** to the fuel pressure regulator not allowed. Additional and/or adjustable regulators not allowed.

(v) A T-piece with a Schrader valve must be installed on the main fuel line to the injector rail and must be accessible from the engine bay.

The Schrader valve must use a standard external thread for connection purposes (7.7mm (.302") x 32 T.P.I).

5.3 *Fuel injection:*

(i) **M20B25:** Original injectors as per engine type must be used (BMW Pn. 13 64 1 734 776/Bosch Pn. 0 280 150 715 which has been discontinued and superseded by BMW Pn. 13 64 1 731 357/Bosch Pn. 0 280 156 346 – either type of injector is permitted).

(ii) **M20B23:** Original injectors as per engine type must be used (BMW Pn. 13 64 1 284 408, or Bosch Pn. 0 280 150 208)

(iii) **Modifications** to the injectors is not allowed. Additional injectors are not allowed.

6. COOLING/OIL SYSTEM

6.1 ***Radiator:*** The radiator must be a BMW radiator or OE equivalent and occupy the same space as original.

6.2 ***Radiator cowl/shroud:*** Radiator cowls/shrouds on the rear of the radiator for the purpose of sealing a fan may be removed. Radiator cowls/shrouds in front of the radiator may be removed in their entirety or replaced by an OE equivalent radiator cowl/shroud or one of similar design and material.

6.3 ***Engine cooling fans:*** Engine cooling fans are free.

6.4 ***Oil system:***

(i) **Windage trays**, sump baffles, oil lines, coolers and filters are free, but dry sump systems are not allowed. An oil accumulator and/or auxiliary reservoir may be fitted. Original oil pump as per engine type must be used, additional oil pumps not allowed.

(ii) **The crankcase breather** hose may be replaced by one of free design discharging to the atmosphere via a catch-can provided it complies with Schedule B of the Motorsport Australia Manual (refer “General Requirements for Cars and Drivers”), has a minimum capacity of 3 litres, and the rocker cover plugged.

7. STARTING

7.1 ***Starter:*** Original starter as per engine type must be used and be able to be controlled by the driver when seated normally. The starting system must be capable of starting the engine at all times.

8. TRANSMISSION TO THE WHEELS

8.1 ***Gear selection:*** The shift lever, selector rod and shift arm/carrier may be replaced by units of free design provided that all gears must be selected by the driver exclusively via a non-sequential mechanical linkage. This permits "H" pattern gear change mechanisms only.

8.2 ***Flywheel/Clutch:*** Original flywheel may be lightened. Original pressure plate unit must be used, or a heavy duty equivalent of the same design. Friction plate is free. Slave cylinder flexible hose is free.

8.3 ***Gearbox:*** Original Getrag 260/5 (Overdrive) gearbox must be used. Ratios: 1st: 3.83, 2nd: 2.20, 3rd: 1.40, 4th: 1.0, 5th: 0.81 and reverse: 3.46. Provision must be made for sealing the gearbox (refer Appendix A(ii)).

Additional strengthening may be added to the gearbox mounts provided the original mounting points and functional dimensions are retained.

NOTE: The Getrag 260/5 (Sport) gearbox is forbidden

8.4 ***Differential:*** Final drive ratio must be 3.91:1. The only permissible limited slip differential (LSD is the original E30 LSD (BMW Pn: 33 141 209 653). The slip rate for the LSD is free. An original E30 non-LSD may be used, either unmodified or fully locked (locker) by welding the internal gears with the addition of strengthening plates.

Provision must be made for sealing the differential (refer Appendix A(ii)).

8.5 ***Traction Control:*** The use of traction control is forbidden.

9. SUSPENSION AND STEERING

9.1 ***Springs:*** Springs are free provided that the type and location are unchanged. They must be made of a ferrous material.

9.2 ***Mounting points:*** Metal to a thickness of up to 5mm may be added to fully sprung components to a distance of 75mm from the edge of each suspension pivot point aperture. Such metal must follow the contour of the original metal at all times.

9.3 ***Bushes:*** Elastomeric bushes used at suspension pivot points (which are not otherwise specified in these regulations) may be replaced by other elastomeric bushings.

9.4 ***Suspension dampers:*** Suspension dampers are free provided that the number of dampers and their pivot point locations are not altered. Dampers may have a maximum of 1 compression adjuster and 1 rebound adjuster. Remote canister dampers are forbidden.

9.5 ***Front suspension components:*** Front spring platforms may be replaced by coil-over units of free design provided they retain the lower part of the original struts. Lower strut tube size must not exceed 51mm external diameter. Original steel control arms must be retained.

9.6 ***MacPherson strut top mounts:*** MacPherson strut top mounts are free providing that they utilise the original body shell mounting facilities.

9.7 ***Strut tower brace:*** A brace of free design may be fitted between the front and/or rear suspension towers providing it only links the towers.

9.8 ***Sway bars:*** Sway bars, their mounts and associated linkages may be replaced by units of free design provided that they utilise the original mounting facilities. They must not be adjustable from the cockpit.

9.9 ***Ride height adjustment:*** Adjustable spring platforms and spacers located directly at either end or between coil springs are all free.

9.10 ***Rear suspension components:*** Rear suspension damper top mountings may be replaced by units of free design provided that they utilise the original body shell mounting facilities. Trailing arm bushes may be replaced by adjustable units provided no modifications are required.

9.11 ***Wheel track & wheel base:*** The maximum allowed front track is 1675mm; the maximum allowed rear track is 1675mm. Wheel track is to be measured at the outer edge of the tyre. The maximum allowed wheelbase is 2570mm.

9.12 ***Ride height:*** All fully sprung parts of the car, with the exception of the entire exhaust system and front control arm bush mounts and bush mount bolts, must be at least 100mm above the ground when measured on a flat level surface with the vehicle at Racing Weight.

9.13 ***Steering:*** Original power steering rack assembly may be interchanged with an original manual steering rack assembly. The steering column flexible coupling and bush may be replaced by one of free design. Quick racks not allowed.

9.14 ***Wheel alignment facilities:*** The wheel alignment settings are free. Rear wheel alignment may be achieved by relocating the rear suspension pivot points by no more than 20mm within the existing brackets.

10. BRAKES

10.1 ***Brake controls:*** It is permissible to add a facility to allow for the adjustment of the front/rear brake proportioning from the cockpit. Antilock braking systems (ABS) are forbidden.

10.2 ***Master cylinders:*** Master cylinders and associated pushrods may be replaced by any BMW or OE equivalent item. Fluid lines and hoses are free. Brake proportioning valves are free. Original E30 brake booster must be retained in the original location and must be operational.

10.3 ***Brake rotors:*** Free but must retain original dimensions (Front 260x22mm, Rear 258x10mm) and be made of a ferrous material.

10.4 ***Brake calipers:*** Original E30 ATE or Girling calipers must be used. Brake pads are free. Guiding bolts and bushes may be replaced by units of free design.

10.5 ***Handbrake:*** Original E30 handbrake system must be retained and must be operational.

10.6 ***Brake cooling:*** Protection shields/stone guards on unsprung components may be added or removed. It is permitted to fit ducting for the passage of air to the brakes provided that it remains within the perimeter of the coachwork when viewed from above and that no bodywork alterations are required.

11. WHEELS AND TYRES

11.1 ***Wheels:*** Wheels are free, subject to the following restrictions: Rims must be a one-piece design, 7” in width, 15” in diameter, and weigh a minimum of 5.9kg. The spare wheel, jack and any associated brackets may be removed. Wheel bolts may be replaced with studs and nuts.

11.2 ***Tyres:*** At the commencement of any race or practice session all tyres must:

(i) **Be the current control tyre** for the series: 205/50 R15 86V A050 (Medium Compound only). Each new tyre must be purchased from the Australian Yokohama Motorsport Distributor Network.

(ii) **Have at least a minimum tread depth**. The tread wear indicators as provided by the tyre manufacturer will be the definitive method of determining minimum tread depth. At no time prior to practice or racing may any tread wear indicator be exposed or in the case where the indicator is a dimple in the tyre, worn below such an indicator. This does not apply to the shoulder of the tyre. In all areas where there is no tread wear indicator, the original tread pattern must be clearly visible.

(iii) **Be fitted onto a rim in compliance** with Schedule E of the Motorsport Australia Manual (refer “General Requirements for Cars and Drivers”).

12. ELECTRICAL

12.1 ***Electrical system:*** The original wiring loom must be retained, but wiring for discarded components may be removed. The original fuse box must be retained and mounted as close as possible to original location and must be operational. Additional wiring and electrical connectors, switches, fuses and circuit breakers are free.

Additional sensors may be added (refer Article 13.9). A panel incorporating additional/replacement switches and/or circuit breakers may be added. The starting, lighting and turn signaling apparatus must be in working order at the start of each competition. All globes must at least meet the original equipment specification.

12.2 ***Battery:*** The battery and its location are free but it must be safely and securely mounted. It must be adequately covered so as to prevent short circuits and leakage, in any location.

12.3 ***Windscreen wipers:*** The windscreen wiper mechanism must not be modified with the exception of the tensioning springs and wiper blades. Wind deflectors may be added. The windscreen washer bottle, pump, hoses and any mounting bracket are free. Windscreen wipers must rest in the original location.

12.4 ***Alternator:*** Original alternator as per engine type must be used, remain unmodified and be operational at all times. Under drive pulleys not allowed.

13. COCKPIT/DRIVER'S COMPARTMENT

13.1 ***Steering wheel:*** The steering wheel may be replaced by one which is of at least 300mm diameter. It is permitted to add a steering wheel boss, possibly incorporating a quick release mechanism, to enable the fitment of a permissible steering wheel. The steering column may be lowered by the addition of spacers/longer bolts at the rear mounting points provided no other modifications are required and the replacement bolts are grade 8.8 or better.

13.2 ***Controls:*** All driving controls must retain the role laid down for them by the manufacturer. Footrests and heat protection panels may be added. Pedal pads may be replaced by units of free design.

13.3 ***Instruments:*** Instruments are free, but the original dash and cluster must remain. Aftermarket clusters of similar design may be used. Any holes in the dash resulting from the removal of instruments must be neatly closed by the addition of a closing panel. Where possible, all replacement instruments must be mounted in the dash where the original instruments were situated.

13.4 ***Carpet and interior trim:*** Floor carpet and associated "underfelt", roof lining and interior trim down to the lower edge of the windows, kick panels and consoles on the transmission tunnel may be removed. Rear lateral panels may be replaced with trim of similar design and function. Door trims must be retained as original. It is permitted to re-upholster components of interior trim. Original interior rear-view mirror may be replaced by one of free design provided it has a reflective area greater than 150cm2, and is mounted in the same general location. Trim in the boot/luggage space may be removed.

13.5 ***Seats:*** The driver's seat may be replaced with one in compliance with Schedule C of the Motorsport Australia Manual (refer "General Requirements for Cars and Drivers") Original seat mountings not part of the body shell may be replaced and/or other mountings added provided that they extend no further than 50mm from the plan view of the seat. All other seats and associated seat belts are free.

13.6 ***Removable rear window shelf:*** The removable rear window shelf may be removed together with its supports, or held down by additional fasteners, or replaced by one of free design.

13.7 ***Heater:*** All components solely associated with the heating, air-conditioning and ventilation system are free. Any openings created by the removal of ducting, vents and controls from the dash must be closed by the addition of panels, which may be used to mount additional instruments or controls.

13.8 ***Accessories:*** The radio, aerial, speakers and speaker mounts may be removed. Fog/driving lights which are separate from the main lighting system may be removed as may internal cockpit lights. Accessories which do not increase performance for example, additional lamps, mirrors, etc. may be added.

13.9 ***Data acquisition systems:*** The only permitted data acquisition systems are: performance monitoring devices and/or lap timers (that may utilise the Global Positioning System (GPS) and/or an external beacon), and devices/systems that record video and/or audio only. No data may be acquired from the cars existing electronic/electrical systems, or via additional sensors installed in/on the vehicle.

13.10 ***Two-way radios:*** Electronic voice communication devices of free design may be added.

13.11 ***In-car Video Cameras:*** All vehicles must be fitted with an in-car digital video recording camera.

(i) The camera must record every official session of a competition round in which the vehicle is entered. The camera must be positioned in a location behind the driver to ensure that the driver's steering input, and a clear external view through the forward windscreen, are

within the frame of the recorded vision. Video must be able to be downloaded and played on a PC with commonly available media software.

(ii) Footage from a vehicle's camera must be made immediately available upon request from the Clerk of the Course, the Stewards of the race meeting, the E30 Racing Inc. Driving Standards Officer (or their nominee) or the E30 Racing Inc. Eligibility Officer/Scrutineer (or their nominee).

(iii) In the event that no video footage/data is available on request, other than due to a proven technical failure or defect with the equipment, penalties may be applied.

14. SAFETY STRUCTURES

14.1 ***Safety cage roll over protection structures:*** Safety cage roll over protection structures must comply with Schedule J (refer Motorsport Australia Manual General Requirements for Cars and Drivers). It is not permitted to fit additional bracing, other than a strut tower brace as described in Article 9.7. It is permitted to attach parts of the safety cage, either by welding or bolting. The removal of the minimum amount of material to assist the fitment of the safety cage members is permitted.

14.2 ***Safety harness:*** Where the vehicle is not registered for road use, the original driver's seat belt must be replaced by a safety harness, complying with Schedule I of the Motorsport Australia Manual (refer (refer "General Requirements for Cars and Drivers").

15. FUEL

15.1 ***Fuel:*** Only unleaded pump fuel, of maximum 98 RON (research octane number) as defined by Motorsport Australia in Schedule G of the Motorsport Australia Manual (refer "General Requirements for Cars and Drivers") may be used. Fuel additives not allowed. Please note that a Control Fuel may be specified by E30 Racing Inc. in the future.

15.2 ***Air:*** Only air may be mixed with the fuel as an oxidant.

16. NON-ORIGINAL REPLACEMENT PARTS

16.1 ***Replacement parts:*** The use of non-original replacements for the following parts is permitted, except where original parts (refer also to Article 1.2) are specified: fasteners, belts, gaskets, seals, flexible hoses, clamps, filters, batteries and battery cables, globes and LEDs, fuses and electromechanical relays, elastomeric bushings, bonnet fasteners and release mechanism.

The parts must be standard replacement parts in terms of configuration and functional dimensions, be made of similar materials, (e.g. polyurethane or other elastomer replacing rubber) and shall not result in any unauthorised modifications to any other component. The use of titanium alloys, carbon fibre composites or any other exotic materials in non-original replacement parts is forbidden.

APPENDIX A – TECHNICAL ILLUSTRATIONS

(i) *Accepted Front Air Dams*

(ii) ***Accepted Component Seals***