



GLOBAL TOURING CAR CHAMPIONSHIP

2019 GTC 2 TECHNICAL REGULATIONS (161804/144)

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1. General

1.1 Eligibility:

Before commissioning the first unit of a new vehicle make, the entrant must receive the agreement in principle from the GTC Commission (GTC) by submitting a specification and sketches/photographs of the proposed vehicle. The entrant must elect a model of a vehicle in the product range on which the the competition vehicle will be based. The details of the model of vehicle and engine will be entered in the vehicle Technical Passport.

Permission for a make or model to compete in GTC 2 Championship racing may be withheld if it is felt acceptance would not be in the interests of GTC 2 Championship racing.

1.2 Only 4-wheeled production cars with petrol, turbocharged engines not exceeding a 2-liter capacity, 2-wheel drive with mechanical manual transmission will be accepted. No hybrids allowed.

1.3 Documentation will be done by completing in full all the required parameters in the Technical Passport document (TP). It is the duty of each competitor to satisfy the Controllers, the TC's and the Stewards of the competition that his automobile complies with these regulations in its entirety at all times during the competition.

1.5 Model of vehicle:

Vehicles belonging to a production series distinguishable by a specific concept and external general lines of the bodywork and by an identical mechanical construction of the engine and the transmission to the wheels. To qualify as a model, the vehicle should have been produced or imported and sold in quantities exceeding 500 in one year in commercial dealer outlets in South Africa. Bodywork variations concerning number of doors, hatchback or boot are permitted and will be considered to be of the same model range.

1.3 Variant

A variant within the same model range may have different mechanical components. The eligibility regulation as outlined may apply to variants, but each variant will require GTC approval and a TP.

1.4 Latitudes

All modifications, deletions and additional equipment not expressly authorised in these regulations, or in writing by the TC's, are forbidden.

Optional equipment listed as such in the manufacturer's sales literature and price lists, and not part of the standard vehicle specification, will not be allowed, nor is it permissible for any equipment fitted as standard to be removed unless expressly authorised in these regulations.

Facelifts, variants and model upgrades will be regarded as a new vehicles with a new TP.

A TP can only be used in its entirety. Vehicles must be raced as documented. Mixing and matching of components between different homologations will not be allowed.

1.5 Once availability (ex-factory) of a model ceases, it will remain eligible for GTC Production Car racing for up to 5 (five) full years (racing seasons) following cessation of availability, unless an extension of eligibility is given in writing by the TC's. The granting of any such extension will be at the sole discretion of the TC's. Application for extension must include the following:

- entrant applies for dispensation, listing the regulation deviations. Important components such as engines, turbochargers, suspension, brakes, gearbox, etc. must be according to current GTC 2 regulations.

- entrant gives an undertaking to start more than 80% of the events, or lose all the points scored.

- "extra" cars will not be allowed to enter for the purpose of influencing the championship.

1.6 Safety will always be a top priority with the GTC, and unsafe vehicles, at the sole discretion of the GTC TC's will not be allowed to compete.

1.7 All components provided by the Series, an Authorized Manufacturer or Supplier must be used as provided, unless otherwise stated in these rules or in update circulars. All original manufacturer identification markings and/or tags must remain as supplied. For avoidance of doubt, these rules provide for no modification of any component.

- 1.8 Competitors are reminded that the onus rests on the entrant/competitor to ensure that the vehicle always complies in full with the Technical Regulations. Refer MSA GCR's 93 and 176. Ignorance of the law will be no excuse.

GCR 226 INTERPRETATION OF REGULATIONS AND SPECIFICATIONS

In interpreting motorsport regulations and specifications "what is not specifically permitted is disallowed" is the normal concept in keeping with the French regulations on which all motor sporting regulations are based.

- 1.9 The only binding means of communication shall be in writing.

- 1.10 Definitions - Refer to GTC National Sporting Regulations.

2. Technical Inspection

- 2.1 The responsibility remains with the Entrants to make sure cars conform to all rules throughout an event. All car parts and equipment must complete technical inspection as and when required by the TC's to be eligible for an event. Officials may inspect all items for conformity of the rules at any time. Completion of technical inspection does not guarantee against disqualification or other penalty if any violation is discovered during any subsequent inspection.
- 2.2 Officials may impound or confiscate a car, part, equipment, item or data associated with a car, driver or entrant, or exchange common parts between cars. In the event of damage or undue wear and tear on an exchange part, the user will be liable for repair costs to bring the part back to serviceable condition.
- 2.3 Certain components will be sealed or marked and registered by the TC's, and may be inspected for regulatory conformance at a later date. Should the seal be broken or tampered with in any way without the TC's instruction and supervision, the competitor will be excluded from the event, and will lose all championship points backdating to the fitting of the seal. In the case of unmarked or differently marked components being found on a car which should have been marked as recorded, the above exclusion penalty will apply.
- 2.4 Attendance at any Technical check or strip and in any parc ferme will be restricted to the following people: the TC's, 1 technician from the required team and 1 nominated team representative. Should an additional technician be required due to the work load, it may be allowed with the permission of the TC's. No other party may enter these restricted areas, and the allowed parties may only enter in the presence of the TC's, or a duly appointed official. It should be noted that no other parties will be allowed in the post race Parc Ferme and in the strip/technical check area. Transgression of this regulation may lead to exclusion by the Clerk of the Course. Refer GCR 252.
- 2.5 The TP as supplied by the GTC must be submitted at technical inspection if required to do so.
- 2.6 Officials may examine any car involved in a crash and determine if it is suitable for further participation and all members shall co-operate in the preparation of damage reports, photographs, video taping and impact recording analysis. Any entrant refusing to follow the prescribed inspection procedures may be penalized.
- 2.7 Decorative plating (chrome plating, galvanizing, anodizing, etc) may not be used on any structural metallic parts, unless supplied as such by GTC. All parts which are painted, plated or coated must be stripped before non-destructive testing and inspection.

3. *Reserved*

4. *Reserved*

5. Engine

The engines and engine ancillaries of all competing vehicles must remain Group N

standard as defined in FIA Appendix J article 251 and 252, specifically noting article 252.1.1, in every respect except for the items specified below. The aim is to run at a maximum of 215 kW measured on the hub at MJR Motorsport.

- 5.1 E.C.U.s (Engine Control Units), wiring looms and sensor units: No modifications allowed except the addition of a DASTEK UNICHIP piggyback unit, chosen to suit the ECU best, may be fitted. *Only one piggyback unit may be in the car.* Teams will map their engines, and the cars will be run on the Hub dyno to measure output. Boost, restrictors and ignition timing limits may be used by the TC's to equalise performance. Once performance corrected, the data will be recorded, which then becomes the allowable maximum for that car, not to be exceeded in a race or qualifying as logged.
- 5.2 Cooling systems: OEM standard.
- 5.3 Water cooling controls: The following items are free of restriction: hoses, belts, flow restrictor, thermostats and radiator caps. No alteration to the standard under bonnet sheet metal is permitted. Water pump must be a standard OEM unit specific to the make of the car.
- 5.4 Reserved.
- 5.5 The system of admission of induction air to the engine: OEM standard, excluding filter elements. Applicable to Golf 7 only: As a result of failures causing potential engine damage, the splitter blades in the inlet ports may be removed. The slots must remain OEM and the flap system in the inlet manifold must remain operational. For the same reason the "snow screen" panel in the bottom of the standard air cleaner box may be removed.
- 5.6 Fuel system: OEM standard.
- 5.7 Oil sumps: OEM standard.
- 5.8 Heaters/Air conditioners may be removed in their entirety.
- 5.9 Pistons: OEM standard.
- 5.10 Cylinder head: OEM standard.
- 5.11 Compression ratio: OEM standard to the specific model as in the technical passport.
- 5.12 The minimum volume of the combustion chambers in the cylinder head may not be less than OEM standard.
- 5.13 Valve timing: OEM standard static.
- 5.14 Valves: OEM standard.
- 5.15 Valve guides/Springs: OEM standard.
- 5.16 Crankshaft: OEM standard.
- 5.17 Finish of engine components: OEM standard.
- 5.18 Engine and drive train mountings: The original mountings of the engine, gearbox and differential housing may be changed, but the number and position of mountings must remain the same and the engine, gearbox and differential must remain in the same position relative to the body shell as in the standard car.
- 5.19 Fly wheel: Dual mass flywheels fitted to any vehicle may be pegged. Dual mass flywheels may be replaced, with the written consent of the TC's and recorded in the Technical Passport, by a single piece flywheel providing the replacement is made of ferrous material and is the same outside diameter as the original component. All cars may reduce the bare flywheel weight to a minimum of 7kg, provided calculations can still prove a safe burst speed.
- 5.20 Heat shielding: OEM standard
or
To limit heat damage to components, removable heat insulating wrapping of the inlet air ducting and exhaust will be allowed. Ceramic and other coatings will not be allowed.
- 5.21 Turbochargers: OEM standard. *The fitting of a different OEM turbocharger may be allowed in the interest of Balance of Performance. The baseline turbocharger is the Golf 7. This will only be allowed with the written approval of the TC.*

The fitting of a different OEM combustion air heat exchanger(Intercooler)may also be may be allowed in the interest of Balance of Performance. The baseline intercooler core is the Golf 7. The header tanks and pipes may be adapted to suit the car, but the diameter of the pipes may not be changed. This will only be allowed with the written approval of the TC.

- 5.22 Power steering: OEM standard.
- 5.23 To assist with cooling, water sprayers on the heat exchangers will be allowed, subject to the following:
- A 10 liter maximum water tank may be fitted with an electric pump controlled by a driver actuated on-off switch, or temperature and/or boost controlled switch actuated by the ECU.
 - The sprayers may not be positioned to spray water into the engine combustion air inlet or inlet manifold in any way. The GTC TC's will approve the position of the sprayers, and their decision will be final.
 - Only clean water, suitable for human consumption, may be used. NO additives will be allowed.
 - No weight compensation will be allowed. The minimum race weight remains as per the Sporting Regulations.

6. Transmission

- 6.1 Gearbox: OEM standard.
- 6.2 Pressure plate: OEM standard. Clutch friction material is free but the OEM size specification must be adhered to. Carbon-type friction materials are forbidden.
- 6.3 Limited slip differentials are permitted. Only the Transaxle plate and ramp differential is allowed. Only two sets of ramps, 45-45 and 30-90 as supplied by Transaxle, will be allowed. The limited slip differential must bolt onto the standard crown wheel.
- 6.4 The OEM mechanical gear change system must be retained. "Flat-shift" gear change systems will ~~not~~ be allowed.

7. Suspension

- 7.1 Castor and camber angles and toe, front and/or rear, may be altered but the maximum camber angle permitted on any wheel is 4 degrees negative. The maximum castor angle permitted will be determined by the front wheel not touching the standard front bumper and/or front fender when turned, all as measured on the floor with driver in car ready to race, or race completed.
Front steer tie-rods and arms may be modified, with the prior approval of the GTC TC's, to correct bump steer caused by the camber and caster modifications
- 7.2 No alterations to the standard components are permitted except: Top pivot points of a MacPherson strut can be moved a maximum lateral distance of 36mm either way from their original position, by making a new top plate bolting into the standard chassis mounting position. The forward-aft and vertical positions of the pivot point must remain standard. The substitution of standard components with fabricated units including different bearings (i.e. sphericals and rod-ends) will be allowed for the front lower control arm, and must be recorded in the technical passport. Multiple front lower control arms are not allowed.
Front and rear standard lower control arms may be reinforced with the prior approval of the GTC TC's, by addition of sheet metal following the contours of the standard component.
- 7.3 Maximum width: Standard fender width measured at the front and rear axle centrelines + 80 mm will be the maximum overall wheel width, camber included. The maximum overall width will be measured between outside tyre sidewalls at the bottom bulge and axle centreline, all as measured on the floor with driver in car ready to race, or race completed. These dimensions will be recorded in the passport.
- 7.4 Springs are free of restriction but must be made of steel. Bump rubbers are free of restriction. Ride heights are free of restriction. The spring attachment points must remain in the OEM position, but may be made adjustable for ride height.
- 7.5 Stabiliser Bars: The only stabiliser bars that may be fitted to any competing car must be the OEM standard. Stabiliser bars may be disconnected and/or removed, along with their attachment arms and brackets, if so desired.

- 7.6 Suspension Bushes: OEM standard, excluding the front lower control arm.
- 7.7 Dampers are free of restriction, including their method of fixing, provided that the attachment points are not changed. On OEM coil-overs, the original spring seat may be made adjustable or ride height adjustment. Where the OEM spring and damper is fitted separately, it may not be changed to a coil-over system and vice versa.
Maximum cost allowed for four dampers is R50 000 (commercially available to any customer in South Africa). The following damper makes are allowed: SAX, KONI, Bilstein, AST, Ohlins and KW.

8. Wheels and Tyres

- 8.1 Wheels: Wheel rims are free of restriction but must be of single-piece construction within the following dimensions and must be manufactured from steel or aluminium only:

Class	Wheel Diameter	Rim (Maximum)	Rim Mass (Minimum)
GTC 2	17 inches	7.5J	7,8kg bare rim

- 8.1.1 Wheel studs may be used in place of bolts.
- 8.1.2 Wheel nuts must be open-ended.
- 8.1.3 Wheel spacers are permitted, respecting maximum track width of the car.
- 8.2 Only the following tyre compound and construction can be used by GTC 2:
- 8.2.1. - Dunlop 215/45R17 slick tyre soft compound.
- 8.2.2 - Dunlop Direzza 225/45R17 DZ03G H1 semi-slick as a rain tyre.
- 8.3 A total number of tyres per entry will be allocated and controlled for the season. Teams that do not enter or start a race shall have pro rata less tyres. 2 per event.
- 8.3.1 32 x Dunlop slick tyres for the whole season. Two new per race meeting, rest from previously used and marked. 4 new for the first race.
x18 for nine race meetings.
+2 extra allowed for FOM race at Kyalami.
+ 2 for race 1.
+ 10 for practice & testing for the season.
Total: 32 tyres for the season
- 8.3.2 Damaged tyre replacements to be taken from previously used & marked for the specific car.
- 8.3.3 1 x set of new rain tyres.
- 8.3.4 Tyre order process:
- i) All teams/competitors will send a written order on the form below to GTC - shelley@gtcafrica.co.za / 0824689200.
 - ii) GTC will approve the order and send approved order to ATS
 - iii) ATS can only invoice and supply tyres to teams/competitors when it has received this written confirmation from GTC.
 - iv) If approval is not forthcoming from GTC no tyres may be supplied to the team/competitor placing the order - this is not negotiable.
 - v) ATS must ensure payment is received directly from the team/competitor not GTC.
 - vi) A week before the end of every month or every race (whichever comes first) ATS must send to GTC all the tyre numbers allocated to each competitor (testing and races) in order for GTC to ensure that both parties (ATS and GTC) have the same orders versus deliveries.
 - vii) This document will then be circulated to the relevant teams/competitors so that total transparency exists.
- 8.4 Tyres will be marked and recorded per car. No tyre swapping between cars or teams.
- 8.5 It is the responsibility of the competitor / entrant to ensure that the tyre markings remain on the tyres, as the use of unmarked tyres at any time may result in the exclusion of the transgressing competitor from the session or race concerned.
- 8.6 Only Nitrogen or air may be used to inflate tyres.
- 8.7 Pressure controlling devices / valves must not be used.

- 8.8 Teams must not chemically treat or alter the tyres.
- 8.9 Tyre blankets, tyre warming devices and heaters are not allowed.
- 8.10 The Endurance race tyre allocation shall be part of Endurance Race rules as per MSA circular.

9. Fuel

Fuel: Refer to GCR 240. In addition, the use of any form of octane booster of any type or brand in the fuel used in vehicles, is strictly forbidden.

10. Brakes

- 10.1 Braking System: OEM standard.
- 10.2 Alternatively the front brakes may be changed (as a complete package) to brake discs with a diameter not exceeding 330 mm \pm 1,5mm and thickness not exceeding 32 mm. 4-piston aluminium Alcon caliper as supplied by VW Motor Sport will be allowed. No titanium or composite pistons will be allowed. An adapter bracket for the caliper to the upright may be made. Details to be specified in the Technical Passport.
- 10.3 Brake pad material and disc manufacturer is free of restriction, adhering to OEM or article 10.2 sizes. Carbon friction material is not allowed. Composite disks are not allowed, ferrous only.
- 10.4 Protector plates/dust covers may be removed or modified.
- 10.5 Ducting is permitted to the front brakes to facilitate cooling. Brake cooling ducts may originate where auxiliary lights were fitted or were designed to be fitted. The removal or repositioning of head lights, parking lights or indicators is not permitted. Ducts originating from holes left by the removal of auxiliary lights may not exceed 100mm in diameter if round, or 7900mm² in cross sectional area if any other shape, for a minimum of 50mm along their length. Only one such air inlet per side of the front of the vehicle is permitted. Enhancing the volume or flow of air to the engine induction system in terms of the aforementioned allowances is strictly forbidden. Only air may be used as a cooling medium.
- 10.6 Servo brake assistance: OEM standard.
- 10.7 Brake discs may be skimmed to the minimum thickness as per the disc manufacturer.
- 10.8 Brake discs may be slotted and drilled.
- 10.9 Pedal boxes: OEM standard.
- 10.10 Proportional pressure valves (pressure limiters) may be disconnected, removed, or fitted in the rear brake system.
- 10.11 ABS: OEM standard.

11. Exhausts

- 11.1 The exhaust system is free of restriction from the turbo flange downstream, provided that it follows a similar route to the standard system and exits at the rear of the car. Single outlets are permitted in place of dual outlets, and vice versa. Maximum pipe diameter 76mm. All cars must have at least one silencer, which may be standard OEM or an aftermarket option.
- 11.2 The position of the lambda sensor is free of restriction.
- 11.3 Catalytic converters may be removed and replaced with suitable exhaust piping.

12. Bodywork

- 12.1 Bodywork – Exterior
 - 12.1.1 All doors, as well as the boot and bonnet, must fit in the designed position when closed and must conform to the original contours of the vehicle.
 - 12.1.2 All bodywork panels must be in place, including splash panels and panels behind the bonnet covering windscreen wiper mechanisms.
 - 12.1.3 No aerodynamic downforce aids are permitted.
 - 12.1.4 Presentation: All competing cars must be professionally turned out.
- 12.2 Bodywork – Interior

- 12.2.1 Additional measuring instruments, rev counters, etc. may be freely installed in place of the standard units.
- 12.2.2 Any approved type of steering wheel, including one of the quick-release type, may be fitted.
- 12.2.3 Central locking systems must be disconnected. They may be removed in their entirety and replaced with manually operated door locks. Steering lock systems must be removed.
- 12.2.4 Windows:
 - 12.2.4.1 The windscreen must be of laminated glass to Road Ordinance specifications.
 - 12.2.4.2 Side and rear windows must remain OEM standard and can be fitted with smash-and-grab film.
 - 12.2.4.3 All windows must be fitted so as to retain the appearance of the standard fitment.
 - 12.2.4.4 Electric window winding mechanisms may be replaced by manual systems and vice versa.
 - 12.2.4.5 Windows may be in any position (i.e. fully open, fully closed or any position in between). Windows may be locked permanently.
- 12.2.5 Spare wheel(s), tools and jack must be removed. No permanently fitted air or hydraulic jacks will be allowed.
- 12.2.6 It is permitted to remove all interior trim, including hood linings, passenger seats, carpets and sound deadening materials. The original dashboard and instrument cluster surrounds must remain in place. The doors must be clad to obscure the window winder mechanisms. The method of cladding is free, as long as it is neatly presented. Body panels, door panels and interiors, roof supports, or any part of the body welded structure may not be cut or removed to lighten the car. It is permitted to cut the speaker bulges out of the door panel to facilitate the fitting of flat sheet interior door covers only. These cut-outs are to be approved by the controller TC's, and documented in the TP.

13. Battery and Electrical

- 13.1 The battery must be the sealed type, e.g. Red Top 20 or similar. Size is free. Position preferably in the passenger compartment or spare wheel well. The battery must be suitable fastened with steel brackets and minimum M8 Grade 8.8 bolts.
- 13.2 All external lighting systems must be OEM standard and remain functional.

14. Safety Equipment and Seals

- 14.1 Oil catch tank: Catch tanks, minimum size 2 litres, must be fitted in the engine compartment. The tank must be empty before the start of each track session. Alternatively, the standard closed circuit breather system must be in operation.
- 14.2 Safety apparel: All competitors must use FIA-approved helmets, FIA-approved race suits and FIA- approved neck braces (HANS device or LEATT brace only). Refer GCR 239.
- 14.3 The driver's seat must be replaced by a FIA-approved racing seat.
- 14.4 Safety belts: A full FIA-approved racing harness must be fitted, i.e. 2 shoulder straps of 75mm width and 2 lap straps of 50mm minimum width and a crotch strap. Refer GCR 239.
- 14.5 A Roll Cage is compulsory to prevent serious deformation of the bodywork in the event of a collision or rollover. Roll cages complying with the FIA Appendix J specifications (copies available from MSA) are highly recommended. Only mild steel tube welded cages fitted at Van der Linde Systems will be allowed.
- 14.6 Rear view mirrors: Standard units must be fitted, one on each side of the car. In addition, a rear view mirror fitted internally must remain in place.
- 14.7 A circuit breaker capable of being operated from both inside and outside the car must be fitted into one of the main battery cables. Its position should be clearly marked on the outside of the body by a red spark on a white-edged blue triangle having a base of at least 12cm. When operated, the circuit breaker must stop the engine.

- 14.8 Fluid lines/cables: Fuel and oil lines, brake pipes and cables must be protected against damage and internally against fire risk. It is recommended that all flexible pipes be replaced with braided hoses. Front flexible brake hoses must be braided type.
- 14.9 Additional/Replacement fastenings: Large objects such as fire extinguishers, etc., must be firmly fixed to the satisfaction of the TC's. The bonnet and boot lid may be secured with extra fastening devices. Any and all original bolts and fasteners used on the car in standard trim may be replaced with upgraded or more suitable components.
- 14.10 Towing straps: Must be fitted to the front and to the rear of all cars. Tow straps, suitably strong and properly mounted to allow a car to be towed out of a gravel trap, will be acceptable.
- 14.11 A 2,5kg DCP fire extinguisher must be fitted, complying to SANS 1910 DCP Dry Chemical Powder standard. All extinguishers must be fitted with pressure gauges to indicate that the pressure is in the green area of the indicator dial. Evidence must be furnished to show that the extinguisher was purchased new or serviced within the prior 12 months. Any extinguisher may be weighed as per the details on the label to ensure that it is fully charged. Any fire extinguisher discharged at any time during the event must be replaced/replenished before the next race. Extinguishers shall be securely mounted using a minimum of two metal straps with metal quick release fasteners and M8 Grade 8.8 bolts. The extinguishing agent of all DCP extinguishers shall be MAP (mono-ammonium phosphate) with a minimum of 70% MAP in the DCP (90% recommended).
- 14.12 Safety net: An approved safety net must be fitted to cover the driver side window opening, and shall be fitted to the roll cage and released with quick-release attachments.
- 14.13 Airbags must be removed.
- 14.14 Technical inspection seals:
- Engines, gearboxes, differentials and other free standing units must have 2mm holes drilled in bolt heads and/or shanks to accept locking wires and approved seals to the satisfaction of the TC's. This is to facilitate sealing in parc ferme following a competition, in preparation for stripping, inspection and measurement at another location by the Scrutineer and/or TC's appointed. Unauthorised removal of the locking wires and seal will result in exclusion.

15. Weight

The weight of the car as raced must be not less than that stipulated by the TC's.

The specified minimum weight includes the driver and his safety equipment. At any time during a race meeting (except practice) a car may be weighed and, if found to be below the required weight, all qualifying lap times (recorded prior to, or following, weighing) will be cancelled. Any car found to be underweight following a race shall be excluded from the results of that race.

The official scale used at each circuit will be the sole weight measurement for the event. Minimum weight must be no less than that specified for the vehicle.

Refer 2019 GTC Sporting Regulations.

16. Data Logging and Telemetry

Continuous on-track telemetry systems are not allowed. Refer 2019 GTC Sporting Regulations.

17. Amendments and Alterations to these Regulations

The TC's reserve the right to amend, alter or introduce additional regulations if deemed necessary. Such amendments, alterations or additional regulations shall only be in force following publication in an official MSA circular or bulletin published at least seven (7) days prior to an event.