

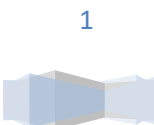


Technical Regulations

Vision HKS GT86 x BRZ Racing Cup 2024

Version 1.1
12 Dec 2023

Malaysia Speed Festival



TECHNICAL REGULATIONS – RACING CLUB GT86 x BRZ

(The regulations are subject to change, which will be published via Additional Supplementary Regulations – ASR)

1. GENERAL

1.1. Eligible cars

- It being 4-wheeled production Toyota GT86 (ZN6) or Subaru BRZ (ZC6) model year 2012 – 2021 of 2-litre engine capacity.
- All variants and models of this particular vehicle are valid but limited to Naturally-Aspirated versions only.

1.2. Sub-categories

- There is a possibility of two (2) sub-categories within Racing Club GT86 x BRZ with Championships, however this is a future plan dependant on numbers of participants, and not for 2024.

1.3. Modifications made to the vehicle cannot compromise the safety or structural integrity of the vehicle.

Approval for entry is at the discretion of the Promoters.

2. DRIVER ATTIRE

2.1. Drivers are required to wear proper auto/motor Helmets. Minimum requirement is SNELL SA / DOT Approved. No Bicycle Helmets allowed. It is highly recommended to use a helmet which uses double-D type strap fasteners.

2.2. Drivers are required to wear proper racing attire: Flame Retardant club-level Racing suit complying minimum SFI 3.2A/1 and/or EN533. Similar Flame Retardant shoes and gloves required.

2.3. Use of Hand And Neck Restraint (HANS) device is recommended.

2.4. Prohibited to wear non-flame retardant suit or open-toe shoes.

3. SAFETY EQUIPMENT

3.1. A Safety cage must be installed.

- It must be secured at minimum six (6) points on the floor with secure bolts or welded plates. Mounting points are the base of the A Pillar, B Pillar and the rear wheel arch or rear suspension turret.

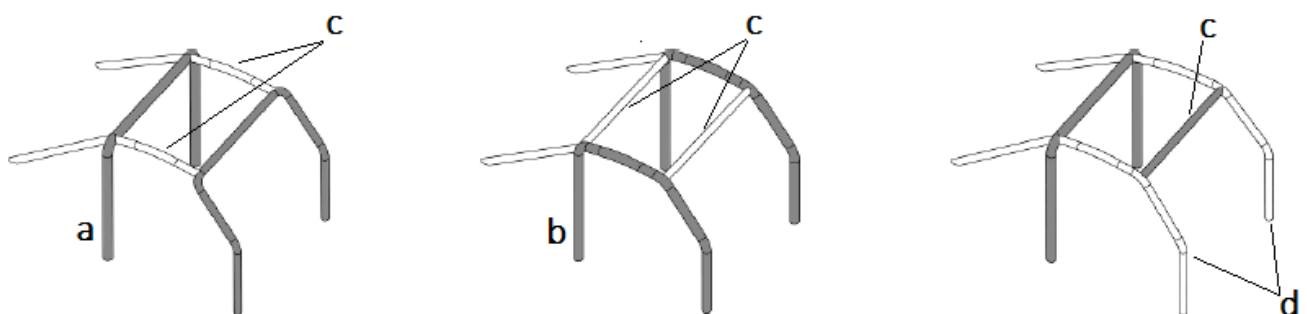


Diagram 5-1



- At least 1 diagonal bar minimum is required between the Main Rollbar Hoop and a lower mounting point – either on the main hoop or on the rear bar to the floor – to create a truss.

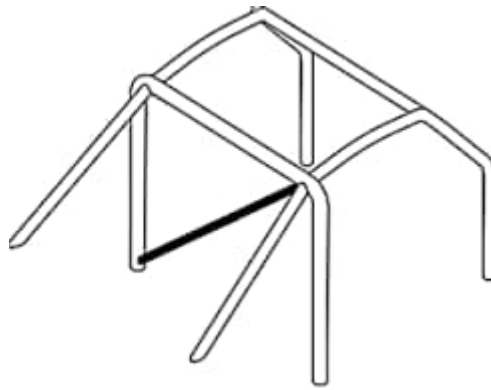


Diagram 5-2

- A 2-bar side impact bar is compulsory. 2 diagonal X-bars or parallel-bars required on both left and right sides.

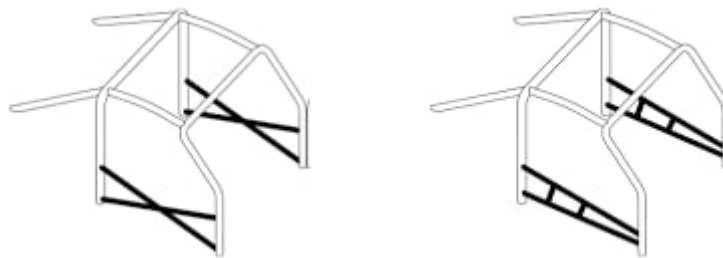


Diagram 5-3

3.2. Safety cage specifications.

Safety Cage Specifications. Only steel circular tubes are allowed for use.

3.2.1. Specifications are

Dimensions (mm)		Use
*Recommended	45 x 2.5 (1¾" x 0.095") or 50 x 2.0 (2.0" x 0.083")	<ul style="list-style-type: none"> • Main rollbar (A in Diagram 5-1) • Lateral rollbars (B in Diagram 5-1) • Transverse members (C in Diagram 5-1)
*Minimum requirement	38 x 2.5 (1½" x 0.095") [CDS only] or 40 x 2.0 (1.6" x 0.083") [Mild Steel]	<ul style="list-style-type: none"> • Main rollbar (A in Diagram 5-1) • Lateral rollbars (B in Diagram 5-1) • Transverse members (C in Diagram 5-1) • Lateral half-rollbars (D in Diagram 5-1) • Any other parts of the safety cage



3.2.2. Mount plates

Mount plate size: 120mm x 120mm

Mount plate thickness: 3mm

Reinforce plate thickness: 3mm

3.2.3. Welding: full welding around the diameter of the tubing. It is not permitted to grind or plate the welding.

3.3. Compulsory general safety items

3.3.1. Cut-off switches for electrical and fuel systems are compulsory with an external switch/lever. A sticker identifying the electrical cut off switch must be affixed near the switch.

3.3.2. Competition safety harness belt are required. Minimum 4 points.

3.3.3. Competition bucket seat is recommended.

3.3.4. A Fire Extinguisher must be fitted of minimum specification:

- DCF (CF3 BR): 4.9kg
- NAF 83: 3.2kg
- NAF P: 3.2kg
- AFF: 2.4kg
- Powder: 2.0kg

3.4. Items in passenger compartment

3.4.1. Any battery placed within the passenger compartment must be of sealed Dry cell type.

It must be installed securely within a secure box with lid cover.

3.4.2. Oil Catch tank within Engine bay must be of non-flammable material ie alloy or steel material

- must be securely mounted
- must be enclosed with no leaks or gaps
- must have hoses that are securely attached
- plastic bottles are not permitted.

3.5. General safety

3.5.1. No fluid leaks of any kind.

3.5.2. No loose items within engine bay.

3.5.3. Poorly engineered and poorly attached bars inside the cabin are not allowed.

3.5.4. Cache tanks, items, pumps, etc that involve lubricant and/or oil are not permitted in the passenger cabin of the cars, excluding items mentioned in 3.4.

4. FUEL TANK

4.1. Original fuel tank is required, in the original location with original refuelling hose and orifice.

- *Vehicles where original fuel tank has been replaced with FIA racing fuel cell, will be required to carry additional 20 KG weight ballast.*

4.2. An inboard FIA-specification fuel surge tank is allowed:

- limited to one 5-litre surge tank only.
- Petrol lines inside the vehicle, if any, must be certified safety fuel lines.
- A fire-proof bulkhead and/or protective cover and/or compartment must enclose the fuel pump.
- A pre-event inspection and approval is necessary and if they meet the organisers safety standards, will be registered and approved. An appointment minimum 1-week prior to the event is required.



5. BRAKING SYSTEM

5.1. Original ZN6 / ZC6 brake calliper & disc rotors must be retained.

- *Vehicles where brake callipers and / or disc rotors are replaced with non-original items that ARE NOT direct replacement and ARE NOT the original dimensions will be required to carry additional 30 KG weight ballast – this includes the BREMBO on special edition versions.*



5.2. Brake disc rotors, pads, brake shoes, and brake hoses may be replaced with direct-

replacement aftermarket items: but must be of original dimensions. Slotted and cross-drilled etc rotors permitted.

5.3. Original brake servo and master pumps must be retained.

It is not permitted to change the master pump or brake servo or remove the brake servo.

6. SUSPENSION

6.1. Suspension bushes

- Original-type front and rear suspension top mounts may be replaced with adjustable items.
- Original rubber suspension bushes may be replaced with hard rubber, polyurethane, and nylon material bushes. Mounting points must remain original and standard.

Vehicles where rose-joint / spherical bearing suspension components have been used to replace the rubber bushes will be required to carry additional 30 KG weight ballast.

6.2. Original suspension types, mounting points and location must be used. Aftermarket coilover type damper systems may be used.

6.3. It is not permitted to strengthen suspension hard-points at the body and sub-frames with added plates.

7. TYRES & WHEELS

7.1. All categories - with no exceptions - are to use the control tyre in the sizes described below:

- Racing Club GT86 x BRZ category to use :
Hankook Ventus RS4 (Z232) in size 225/45-17

7.2. Wheels specification is open: width, offset, design

- carbon fibre wheels not permitted.

8. POWERTRAIN

8.1. Original engine

- Original 4U-GSE / FA20D engine block to be used, to be visually stock externally;
- engine capacity limited to 2050cc
- Maximum tolerance of +0.5% acceptable.
- No additional welding or plates permitted to be added on to increase bore or stroke, other than what may be contained within the original engine block

8.2. 4U-GSE / FA20D engines only. Engine Block and Cylinder Heads must be original 4U-GSE / FA20D.

- The numbers of attachment points to the bodyshell must remain as standard production.



- Reverse heads not permitted.
- Original throttle body is compulsory, with original inlet manifold only; updated generations accepted (Red intake manifold). Internally may be modified but exterior must remain standard. No additional items permitted to be added on e.g. injectors, hoses, etc
- Exhaust manifolds may be replaced. Titanium material not allowed.
- Oil sump may be modified. Dry sump systems not permitted.
- Forced-induction not permitted.

8.3. Engine & Transmission mounting and location

- Original engine mounting points on the body / subframe must remain. Additional brackets to provide stiffer engine locating and mounting, is permitted.
- Rubber Engine mountings may be replaced

8.4. ECU

- Must use original ECU. The ECU may be flashed, and additional computer and control units may be added on / wired in.
- No replacement standalone ECU permitted.

8.5. Ignition

- coil packs may be replaced with non-original items.

8.6. Rear Differential, Rear Axle & Final Drive

- Final drive limited to maximum ratio of 4.600.
- Limited-Slip Differentials (LSD) are permitted, both original and aftermarket.

8.7. Gear box

- Original 6-speed gearbox (TL70) is required. No other gearboxes permitted.
- Gear ratios may be changed and modified. However, Dog Engagement gears are not allowed.
- Clutch may be changed; flywheel may be changed / lightened.

8.8. Fuel information

- Nitrous Oxide system is not allowed in any category.
- Any fuels or fuel blends that contain oxidisers and oxygenates in any alcohol forms (methanol, nitro-methanol, ethanol, butanol, etc) will not be permitted.
- Water-methanol injection into the intake manifold is not a fuel, and is permitted

9. EXHAUST SYSTEM

9.1. Exhaust system must exit with sideways or rearward-facing exhaust outlets.

If rearwards, the outlet/s shall be between 100mm and 450mm above the ground and shall not protrude more than 50mm beyond the rearmost portion of the automobile.

If directed sideways, the outlet/s must be located rearward of the midpoint of the wheelbase. In any case, they shall not project beyond the maximum width of coachwork /body when seen from above.

9.2. A muffler/s must be fitted, which are subject to particular examination by scrutineers.

WARNING: The aim of this is exhaust noise reduction, even if just a little – a muffler box which is emptied out of noise-absorbing material or baffle plates or such will not be accepted. Do not test the Technical team's intelligence.

10. INTERIOR

10.1. Interior of participating cars to be as such:



10.1.1. Passenger side front seat may be removed

10.1.3 The following items may be removed and stripped:

- A, B, and C pillar trim
- any interior trim from the rear of B-pillar and Front seats
- headlining
- carpet

11. BODYWORK

11.1. Composite material for certain bodyparts are allowed, all parts must still retain the original factory body look and style. Parts replaceable are

- Front Bonnet
- Rear Bootlid
- Front wings / fenders
- Front bumper
- Rear bumper

Change of front and rear bumper to aftermarket styles is permitted.

11.2 Spare wheel well may be cut and covered. Cover must be metal and must be welded to the body. No plastic or ABS or composite material permitted.

11.3 Floorboard and any other part of the fundamental steel monocoque chassis body may not be cut and replaced with anything other than metal for the purposes of lightening.

11.4. All exterior lights must be functional.

- *Original front headlamps compulsory, and may not be modified in any way*
- Additional spot/fog lights are allowed.
- All Tail/Rear lights must be functional. Brake Lights must be functional.
- Headlights and taillights are recommended to be taped up.

11.5. Front and rear Tow Hooks must be attached and Arrow Stickers in fluorescent Red must be affixed.

11.6. Bodywork modifications are not permitted to the front and rear wheel arches.

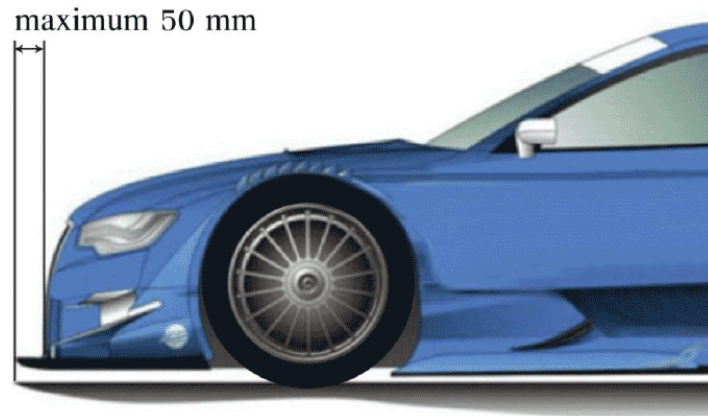
- Wheel arches need to be stock size and shape. Permitted to roll and stretch the standard arches.
- Tyres must not protrude beyond OE bodywork
- Glass windows may be changed to Perspex or acrylic, except windscreen which must remain 2-layer glass
- welding and additional plating to the bodyshell for strengthening and safety bars is permitted

12. AERODYNAMIC DEVICES

Aerodynamic devices and equipment refers to:

- Rear Spoilers and Front spoilers
- Frontal Canard fins
- Front Splitter
- Rear Diffuser
- Wing End Plate
- Rear Wing
- Side Skirt
- Gurney Flap
- Vortex Generator fins





12.1. Front Aero

Aerodynamic devices mounted in the front shall not be wider (laterally extended) than the width of the front wheel arches when viewed from the front.

- RACING CLUB GT86 X BRZ: Front aerodynamic devices must not extend beyond 50 mm from the front edge of the front bumper/nose, following the perimeter edge around the front bumper/nose.

12.2. Width of ALL Aero (Front, Sides, Rear, Wings)

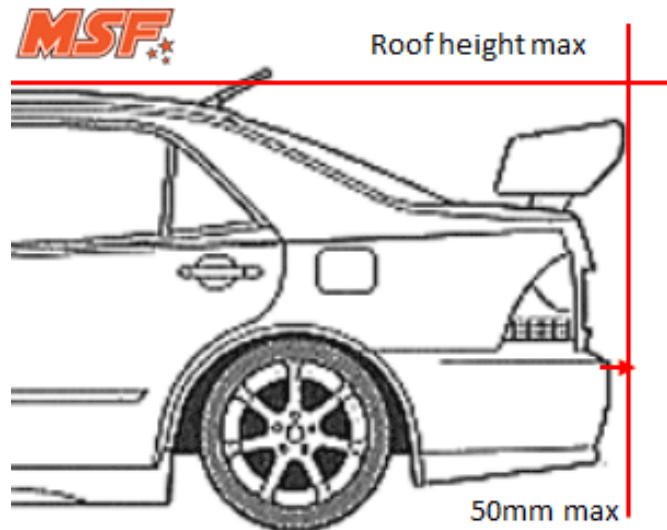
No part of the aerodynamic device can be wider than or protrude beyond the width of the wheel arches when viewed from the front.



12.3. Aerodynamic Devices Material

- All aerodynamic devices must be manufactured from either Wood, Plastic, or Composite materials (eg, fiberglass, carbon fiber, Kevlar fiber).
- Metal may not be used for anything other than Rear Wing and rear wing stands/ mounts.
- There must be no sharp edges to all aerodynamic devices that would cause injury to humans and passers-by.





12.4. Rear Aero

12.4.1. Only the rear wing, wing end plate, and legs/stands/mounts of the rear wing can be made of any material.

12.4.2. Maximum dimensions

- SEDAN / 3 Box design vehicles: Rear wing height must not exceed the height of the vehicle roofline.
- Rear aerodynamic devices must not extend beyond 50mm of the end of the rear bumper.

13. MINIMUM WEIGHT

13.1. General

- The minimum weight of a Car is to be set and weighed excluding the Driver and the Driver's apparel. This weight is with all fluids, and with enough fuel to be able to start and drive away after any weighing of the vehicle at Scrutineer or Parc Ferme.
- The minimum weight stated in 13.3 below for each category must be achieved at all times throughout a Race Meeting with no exception.
- The organiser reserves the right at all times to amend the weights of Cars in the interests of equitable competition.

13.2. Adding extra weights

- To have the minimum weight as prescribed, additional weight and ballast may be added, and anchored firmly and securely. The ballast is to be placed on the floor of the cockpit, spare wheel well, or luggage compartment.
- The material used must be of a unitary block construction, fastened by a bolt with minimum of 10 mm in diameter with a metal plate on the bottom.
- The ballast must not have sharp edges. The scrutineer would have the rights to reject any ballast which is deemed unsafe.

13.3. Minimum weights for Racing Club GT86 x BRZ: 1150kg

13.4. A maximum tolerance of +/- 5 kg is acceptable but absolutely no more no less.

14. COMPETITION NUMBER & VEHICLE PRESENTATION

14.1. Competitors are obliged to carry the MSF partners' logos in the mandatory sticker areas.

14.2. Official MSF Sticker Board of MSF Series Sponsors must be located in the area below the front windows behind the front wheel.

14.3. Official MSF Tyre Partner sticker must be placed on the wheel arches, either front or rear



arches on both sides.

14.4. Official MSF Title Sponsor sticker must be placed on the front windscreen area.

14.5. Other official MSF Partner stickers must be placed at the front or rear wings on both sides.

14.6. Competition numbers are to be placed in 2 locations:

- Door Numbers: Must be placed on doors on the side of the vehicle, to be clear and of contrasting colour to the body colour. General dimensions for each number digit to be roughly A3 Size (11" Wide x 16" High). Competition numbers must be of a contrasting colour to the car and reflective stickers are recommended.

Objectives are for the numbers to be clearly visible to the Time Keepers, Marshals, and Race Control.

- Windscreen Numbers: Must be placed on the left front of windscreen, below Category Partner sticker. Must be 6" high in Arial Narrow font using White or fluorescent Yellow sticker.

14.7. Competitors & team own sponsors may be located at all other locations such as:

- Front Bonnet.
- Roof.
- Rear Door/fender.
- Rear Bootlid or Tailgate.
- Front & Rear bumpers.

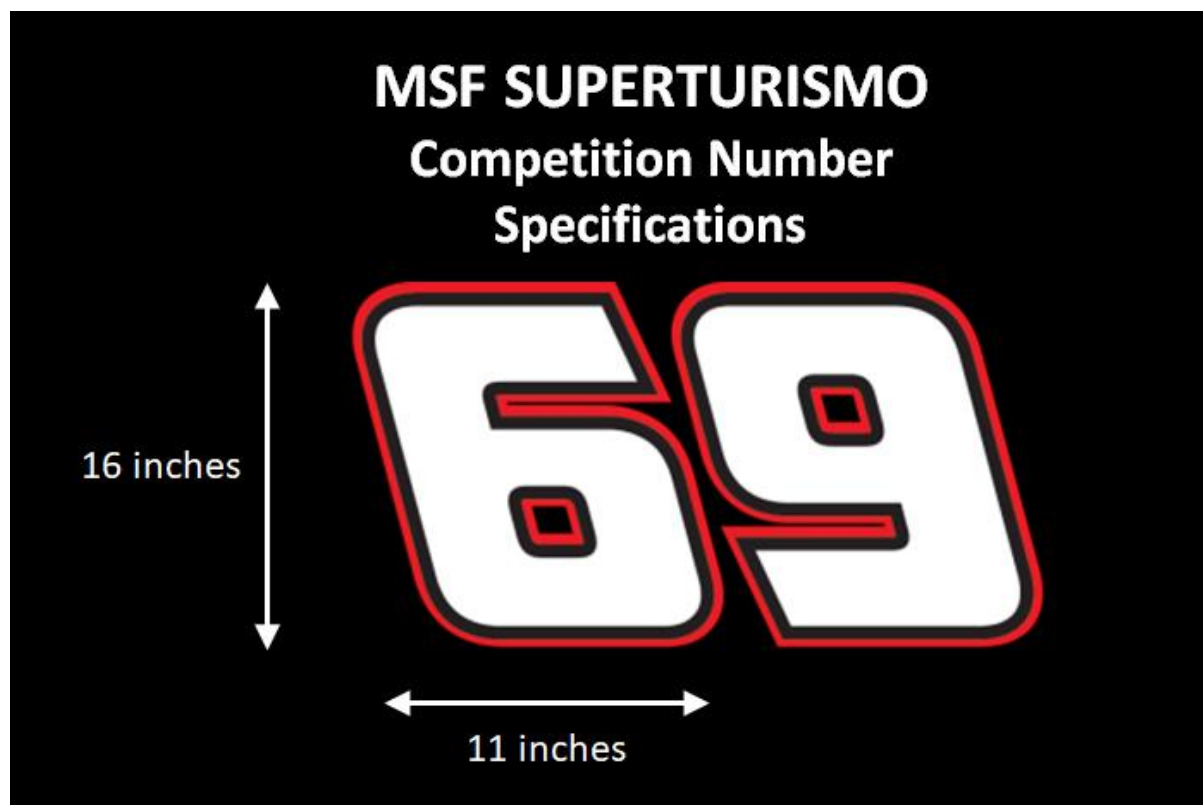
14.8. A rejection fee of RM 2,500.00, for every deleted Partner /Sponsor sticker, is required of any Competitor that does not apply any MSF Partner /Sponsor stickers.

Copyright 2023 Matrix Motorsports Promotion Sdn Bhd 508407-T

Creators, Owners, Official Promoters

MSF Racing Series





Sticker Placement for MSF Racing Series Cars 2024.