



# **BriSCA F2 Technical Bulletin**

## **2016 Rule Changes, Clarifications & Reminders**

### **2<sup>nd</sup> January 2016**

### **Version 2.1**

(E&OE)

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**This document, issued as version 2.1 on 2<sup>nd</sup> Jan 2016, has been reviewed and agreed by BriSCA F2 and the “G20” driver representatives with NO further changes. It therefore supersedes any and all previous versions, and is the definitive list of rule changes, clarifications & reminders for the 2016 season.**

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The BriSCA F2 Technical Committee has considered a number of clarifications and changes to the technical car specification rules for 2016, many of which have been suggested by drivers during the course of the 2015 season. While the primary consideration is one of safety, there is an ongoing desire to maintain stability in the car construction rules, resulting in the intended minimal changes documented below.

In addition to any new rules/changes, there are a number of rules published in the 2015 rulebook (and in some cases also the 2014 version) that come in to full force in 2016. It is therefore also worth re-highlighting those rules in this document.

Finally, and in addition to the documented changes, BriSCA F2 wishes to remind drivers of a number of existing rules where particular issues or widespread non-conformance have been observed during the 2015 season.

**The first section of this document gives a one-line summary of each new rule, change, clarification, or reminder, while the full details of each one are then outlined in subsequent sections.**

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### **v2.1 - Update 2<sup>nd</sup> January 2016**

Positive and constructive feedback on version 1.3 of this document (distributed in the December Registered Drivers newsletter) has been received from a number of drivers, car constructors, and the “G20” driver representatives. This feedback has resulted in a number of small changes which have now been incorporated in this revision to version 2.1.

- 204.13 Front bumper hoop bracing
  - 206.3 Wheel-guard bolt size
  - 210.2 Seat support/protection
  - 210.4.2 Material specifications for vertical headrest-bars/additional integral-bars
  - 204.14 Bumper hoop and nerf-rail capping
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# Summary

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## New Rules and Clarifications

- 203.2.4 The wording for the chassis/bumper centrelines has been clarified.
- 203.4.2 The measurement of roof plate dimensions has been clarified.
- 204.13 The front bumper centre lower hoop must be braced rearwards from the bottom by 2 diagonal support struts. (Updated from v1.3)
- 204.14 The cap of the front bumper fence-end lower hoop MUST be a fully welded steel cap.
- 204.14 It is proposed that the capping of all bumper hoops and nerf rail ends will be mandatory from 2017. (Updated from v1.3)
- 206 The lightening of wheel-guards is NOT permitted. Wheel-guards MUST be solid steel.
- 206.3 Wheel-guard mounting bolts MUST be a minimum of 12mm diameter. A 10mm vertical bolt through an original leaf-spring bush is still permitted provided it is mounted in double-shear. (Updated from v1.3)
- 210 Chassis cross-members between the two main chassis rails in the driver's cab area that could be impacted by the driver's legs MUST be padded to prevent injury.
- 210.2 The driver's seat must be supported / protected at the base, back and any integrated headrest to prevent major deformation in a high-energy impact. (Addition from v1.3)
- 210.4 The headrest plate is no longer required where a fully-integrated seat is fitted.
- 210.4.2 The vertical bars (to which the previously mandated headrest plate was welded) MUST still be fitted to ALL cars to provide driver protection and support for any integrated headrest. (Updated from v1.3)
- 210.5.5 ONLY original safety harness mounting components are permitted. The use of chain, D-links, karabiners, etc. is NOT permitted.
- 214 Front suspension wording to be changed from 2017 to state that only 1-piece solid beam axles or independent wishbone designs are permitted.
- 215.4.3 The wording for rear axle mounting components between the chassis rails has been clarified.
- 217.2.1 The wording regarding the use of softener, treatment or tampering with the Yokohama tyre has been updated.
- 219.3.1 The 25mm bell-housing inspection hole is required on ALL engine types.
- 221 The Zetec cooling rules have been moved to the general radiators/cooling section of the rulebook as they apply to all engine types.
- 222.3.3 The use of a remote fuel shut-off tap, operated by a steel cable is now formally permitted.
- 230 The use of performance ignition systems, including MSD boxes is NOT permitted.

- 233 Zetec engine mounts **MUST** allow the insertion of a crankshaft-locking pin in to the block.
- 233 Part numbers for Zetec cylinder head gaskets have changed, and the thickness requirement has been removed.
- Duratec The evaluation use of the 2.0-litre Duratec engine will be phased out at the end of the 2017 season.
- ORCi The use of narrower shoulder belts to allow the fitment of a HANS/FHR is permitted. Lap belts **MUST** be 3in/75mm in **ALL** cases.

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### **Previously Published Rules Now Fully Implemented**

- 203.3 A 7<sup>th</sup> roll-cage pillar **MUST** be fitted in **ALL** cars.
- 203.4.6 All cars **MUST** meet the 400mm x 560mm roof plate specifications.
- 204 The use of double-thickness bumpers is **NOT** permitted. Additional wording has now been added.
- 223 The use of heat wrap on exhaust systems is **NOT** permitted.
- 226 The use of multi-deck aerofoils is **NOT** permitted.

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### **General Reminders for Common Issues**

- 203.4.10 The roll-cage rear plate **MUST** be fully welded along all 4 sides.
- 204.12 Bumper chains **MUST** be 8mm minimum thickness, and **MUST** be joined by a minimum 8mm threaded link. The use of nuts, bolts and or washers is **NOT** permitted.
- 215.5.8 Excess rear axle mount holes **MUST** be permanently welded closed. The use of nuts and bolts of **ANY** kind is **NOT** permitted.
- 220.9 The earth cut-off switch location/position **MUST** be clearly marked.
- 222.2.9 Fuel tanks **MUST** be protected by bars and/or steel plate.
- 222.2.10 Side-pod mounted fuel tanks **MUST** be flush to the main chassis rail, and may extend to a **MAXIMUM** of 9-in from the chassis rail.
- 222.3.4 The fuel shut-off tap location **MUST** be clearly marked.
- 223.5 Welding is **NOT** permitted within 25mm of the silencer box.
- 231.20.3/4 Engine-sealing holes **MUST** be drilled in Pinto engines.
- Rockers The modification of rocker arms is **NOT** permitted.

# New Rules and Clarifications

## 203.2.4 - Chassis/Bumper Centrelines

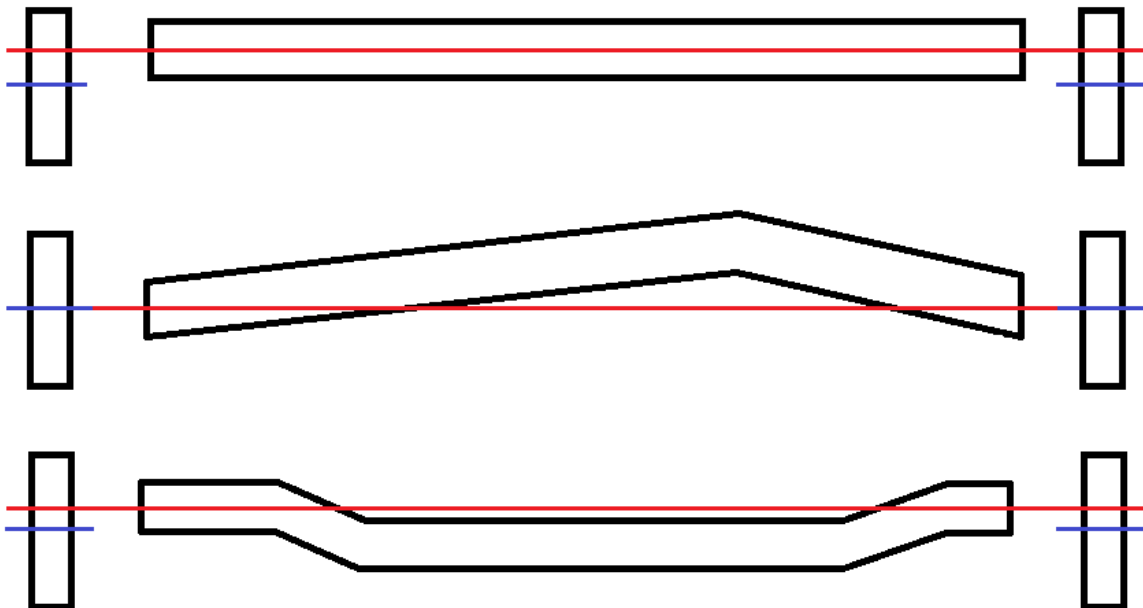
The 2015 rulebook states:

- “203.2.4 - The main chassis rail vertical centreline, when viewed from the side, **MUST** pass directly through or above the vertical centres of the front and rear bumpers.”

The wording of the rule is currently unclear, and depending on interpretation could be seen to unintentionally outlaw the old HCD Dozer type chassis, and other non-flat chassis designs where constructors have sought to use raised, lowered or angled main-rails.

### **Additional Clarification Change:**

- The diagrams below illustrate some examples of what is intended by this rule. The horizontal red lines through the vertical centre of the two ends of the main chassis rail (where the bumpers or their bracing attach) pass through or above the vertical centre of the bumper blades (denoted by the blue lines). (It is the blue lines that are then measured for their distance to the ground for ride height as specified in rule 204.8.)
- The three illustrations below would all be legal to the intention of the rule, and therefore the wording of the rule to be published in the rulebook will be changed for clarity but NOT for meaning or its intention.
- At the present time there are no **known** cars that do not meet this specification, but questions of clarity have been asked during the 2015 season.



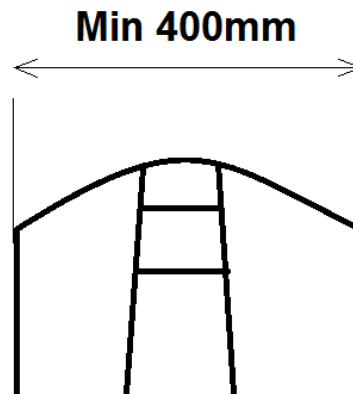
## 203.4.2 - Roof Plate

The 2015 rulebook states:

- “203.4.2 - The roof plate **MUST** measure at least a **MINIMUM** of 560mm in length across its entire width, and at least a **MINIMUM** of 400mm in width along the mandated **MINIMUM** 560mm length. These dimensions include the diameter of the roll-cage tube to which the plate is welded, and will therefore be measured from two verticals butting against the outside of the roll-cage tube.”

**Additional Clarification:**

- The measurement between the two verticals is taken in the horizontal plane parallel to the ground, and therefore is the straight distance between the two verticals and not simply the dimensions of the physical roof plate whether it be curved or not.

**204.13 - Central Lower Bumper Hoop Bracing (Updated from v1.3)**

The 2015 rulebook states:

- “204.13 - The front bumper MUST be fitted with a central lower hoop to help prevent the car riding up over other cars. This hoop MUST have a horizontal centre section a MINIMUM of 304mm (12in) wide, and be a MINIMUM of 152mm (6in) deep from the underside of the bumper along the entire horizontal section length. This hoop MUST be braced by 2 rear diagonal support struts.”*

**Additional Clarification:**

- The last sentence of 204.13 will be clarified to state that the bottom of the hoop must be braced to the rear by 2 diagonal support struts. This covers current practice and gives constructors flexibility as they see fit to brace the hoop such that it does not bend/fold-under during light impact, but is not so solid that it causes significant bumper or chassis damage under heavy impact.

The bracing of central hoops, along with outlawing the increasingly common practice of double thickness front bumpers, will be monitored during the 2016 season to ensure there are no adverse effects on safety or cost.

**204.14 - Fence-End Lower Bumper Hoop Capping (Updated from v1.3)**

The 2015 rulebook states:

- “204.14 - The front bumper MUST be fitted with a fence-side lower hoop to help prevent intrusion of the bumper end in to another car’s driver’s compartment. This hoop MUST be a MINIMUM of 102mm (4in) deep from the underside of the bumper, smooth on all edges, and the bottom of any tube MUST be capped. Sharp angles, or tapers, of less than 90 degrees that may cause tyre damage are NOT permitted on the bottom of the hoop.”*

**Additional Clarification Change:**

- Where open tube is used in the construction of the lower fence-side hoop, then the following apply to the mandatory capping of this tube:
  - The cap MUST be steel and be fully welded to the tube
  - The use of a plastic cap is NOT permitted
  - The cap MUST be completely closed – holes are NOT permitted
 (Most hoops already meet these requirements, it’s just a few exceptions have been observed)

**Proposed New Rule For 2017:**

- It is **proposed that from the start of 2017**, the capping of the bottom of ALL bumper hoops (on front and rear bumpers), and any open ends of nerf rails will be mandatory.
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**206 - Wheel Guards**

Drivers are reminded that the drilling and lightening of wheel guards, as with any other safety component, is NOT permitted, unless explicitly stated. Therefore an additional statement will be added to the existing rules.

**Additional Clarification Change:**

- All wheel guards **MUST** be constructed from a solid piece of steel. The drilling and/or lightening of wheel guards (except for mounting bolt holes) is **NOT** permitted.
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**206.3 - Wheel Guard Mounting Bolts (Updated from v1.3)**

Following a number of safety related incidents with loose/detached wheel guards, and listening to feedback from drivers, the mounting bolt specification is to be increased for the 2106 season.

**Change:**

- The specification for ALL mounting bolts is raised to a **MINIMUM 12mm** diameter bolt.
  - It is recommended that where possible, drivers/constructors incorporate some kind of protection for any wheel guard mounting-bolt heads to prevent them from being sheared off.
  - Where an original leaf spring, that incorporates a rubber/polyurethane bush at one end, is used as a wheel guard and the bolt is therefore mounted vertically through the bush, a **MINIMUM** diameter bolt of 10mm is still permitted in such cases, but it **MUST** be mounted in double-shear (i.e. a mounting bracket at the top **AND** bottom).
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**210 - Driver Protection**

An observation of in-cab safety has highlighted an area for concern with regard to the driver's legs (shins) impacting chassis cross-members that are mounted between the main chassis rails in the foot-well area of the cab. In a small number of cases the driver sits with their legs in between, and in very close proximity to, one or more chassis cross-members. Further study in to this configuration with a view to the longer-term removal of it will be undertaken; however, for 2016 a new rule is to be introduced with the aim of protecting drivers with such a design.

**New Rule:**

- All chassis cross-members located between the engine firewall and the transverse front edge of the driver's seat that may be impacted by the driver's uncontrolled legs (and especially their shins) during a crash, **MUST** be covered with high-density foam with the intention of preventing injury should the leg(s) come in contact with the bar(s).
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**210.2 - Seat Mount (Addition from v1.3)**

With the removal of the requirement for the headrest plate (see below), where a seat incorporates a headrest in its design, the following addition to rule 210.2 will be made, applying to all seats.

**New Rule:**

- The seat must be supported / protected at the base, back and any integrated headrest to prevent major deformation and movement in a high-energy impact. Any cross-member(s) / support-bar(s) installed for the purpose of mounting / supporting / protecting the seat **MUST** form an integral part of the chassis/roll-cage and be fully welded at all joints.
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## **210.4 - Headrest Plate**

With the almost universal use of full racing seats incorporating the headrest in their construction, and the mandatory installation of the 7<sup>th</sup> pillar in roll-cage construction for 2016 to provide intrusion protection, the fitting of the **headrest plate** (210.4.1) is no longer a mandatory requirement where such a seat is used (especially as its location may interfere with the installation of the new 7<sup>th</sup> pillar). However, the two vertical support bars **MUST** remain/be retained.

### **Change:**

- Where the driver's seat incorporates a headrest, the previously mandated headrest plate (210.4.1) is no longer required.
- **The two vertical bars and associated cross-members**, to which the plate was previously welded, **MUST still be fitted in ALL cars** for the purpose of providing support to the integral headrest and back of racing seats, and providing additional impact protection in the area behind the driver's head.
- The headrest plate **MUST still be fitted** if the driver's seat **does not include** an integral headrest.
- The driver's seat **MUST be supported** so as to prevent major deformation in a heavy impact. This includes support of the headrest section of the seat to prevent it from bending backwards.

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## **210.4.2 - Vertical Bars (Headrest Plate/Seat Support) (Updated from v1.3)**

The 2015 rulebook states:

- *"210.4.2 - The vertical bars MUST be constructed of steel, be an integral part of the roll-cage construction, and be welded to cross-members at the top and bottom."*

Following some constructive driver and car constructor feedback it has become clear that there has been a variety of interpretations and understanding of the rules regarding components that must be an integral part of the roll-cage, but that are not classed as being part of the mandatory cage structure design. Such components include, but are not limited to:

- Cross-members for seat mounting
- The vertical bars incorporating the headrest plate
- Tubes mounted to the roll-cage on to which the steering column is mounted
- Additional bars for the mounting of switches, panels, brake cylinders or other components

It has now become clear that a large number of cars feature such components with a material specification less than that of the "30mm x 3mm" and "25mm x 2.5mm" specifications for the mandated roll-cage structure (despite being an integral part of the roll-cage construction).

**BriSCA F2's intention was not to change this rule for the 2016 season but merely to try and clarify the rulebook for the avoidance of doubt based on information gained through 2015.**

Therefore, based on driver feedback, and for the avoidance of future doubt, the following clarification will now be added.

### **Additional Clarification Change:**

- The vertical bars and associated cross-members, to which any headrest plate is welded, and that form part of the support requirements for fully-integrated seats, must be integral to the roll-cage, in that they must be fully welded to it, as per 2015 rule 210.4.2.
- The vertical seat support bars and associated cross-members (that are not mandated as part of the full roll-cage specification), along with other bars attached to the roll-cage (e.g. the steering column mount, or cross-members used for mounting the seat), **MUST** be designed / constructed according to their intended purpose, and therefore are **NOT** mandated to meet the defined roll-cage structure material specification.

**NOTE:** The design and material specification for the entire roll-cage and various support bars (along with many other topics aiming to simplify the rulebook) are subject to further review by driver representatives, car constructors, and the technical committee as part of BriSCA F2's long-term plan for the future of the sport. Any changes would need to be with the agreement of **ALL** parties, and an appropriate run-in time period given (e.g. like the 2-year run-in for the new 7<sup>th</sup> pillar of the roll-cage).

### **210.5.5 - Safety Harness Installation**

The 2015 rulebook states:

- *"210.5.5 - The safety harness MUST be anchored to the car's chassis by one of the following methods:*
  - *Bolted to an integral part of the chassis using bolts of at least 8mm diameter high-tensile steel.*
  - *Attached to bolt-on or weld-on purpose-made ringed harness eyelets using the harness manufacturer's original components.*
  - *Securely buckled around integral roll-cage or chassis cross-members using the harness manufacturer's original components. Any such cross-member(s) MUST be welded to other fixed chassis/roll-cage bars at both ends such that the safety harness cannot become detached, and MUST conform to the MINIMUM roll-cage material specifications."*

#### **Additional Clarification Change:**

- Safety harnesses should be installed using only standard manufactured hardware designed for this specific purpose, e.g. bolt-in mounting eyes, or manufacturer supplied buckles.
- The use of chain, D-links, karabiners, or other non-approved hardware not originally designed for the installation of safety harnesses is **NOT** permitted.

### **ORCi Safety Specifications - Safety Harness Width**

As per the ORCi safety equipment specifications, the use of safety belts narrower than the 3in (75mm) MINIMUM standard is permitted **ONLY** to enable the correct fitment of any HANS or FHR (Frontal Head Restraint) device.

#### **Additional Clarification:**

- This concession in safety belt width applies **ONLY** to the shoulder straps fitting over the HANS/FHR device.
- The lap straps of the safety harness **MUST** conform to the 3in/75mm minimum width in **ALL** cases.

### **214 - Front Beam Axles**

The 2015 rulebook states:

- *"214.1.1 - It is permitted to use either a solid beam-axle, or an independent design for the front axle/suspension."*
- *"214.3.3 - The alteration of camber angles is permitted."*

#### **Change:**

- In an effort to prevent the formula form heading in an undesirable direction in the future, it is proposed that the wording of 214.1.1 will be changed with effect from **1-Jan-2017** to state, *"It is permitted to use either a solid **1-piece** beam-axle, or an independent **wishbone** design for the front axle/suspension"*.

The alteration of camber angles continues to be permitted. In order to ensure that current permitted designs are not unintentionally outlawed by any additional new rule wording, research will be carried out during 2016 to ensure that any new rule(s) take account of currently acceptable designs/practices.



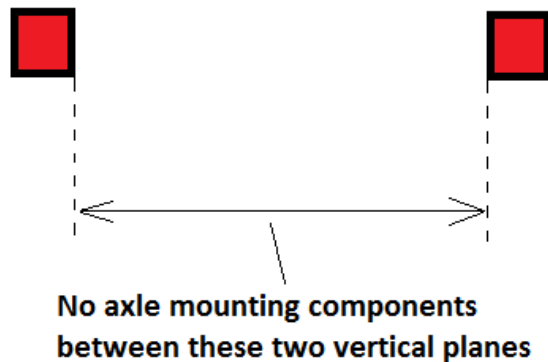
### **215.4.3 - Axle Mounting Components Fitment**

The 2015 rulebook states:

- “215.4.3 - ALL rear axle mounting/location components MUST be fitted OUTSIDE of the chassis rails. NO rear axle mounting/location components may be fitted inside/between the chassis rails with the exception of (i) a Panhard Bar or Watts Linkage (see below), and/or (ii) in-board mounted coil-over shock absorbers (see below).”

#### **Additional Clarification Change:**

- For the implementation of this rule, the vertical planes from the INNER edge of the main chassis rails will be used. Therefore, link bars mounted to posts underneath the main chassis rails, as observed on a number of cars, are permitted.




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### **217.2.1 - Yokohama Tyre Tampering**

The 2015 rulebook states:

- “217.2.1 - Tyre softener and/or treatment of ANY kind is NOT permitted on the Yokohama tyre.”

#### **Change:**

- The wording of this rule will be changed to state: “The use of tyre softener, tyre treatment of ANY kind, and/or tampering with the compound of the tyre in ANY way (chemical, physical, or biological) is NOT permitted on the Yokohama tyre.”

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### **219.3.1 - Bell-Housing Inspection Hole - Duratec**

The 2015 rulebook states:

- “219.3.1 - A single hole of 25mm diameter MUST be drilled in the bell-housing on all 2.0-litre powered cars to allow inspection of the flywheel and clutch by an appointed scrutineer. On Zetec engined cars this hole MUST also allow flywheel sensor inspection.

#### **Change:**

- This rule now applies to ALL engine types, and therefore will be worded so as to include the 1.8-litre Duratec engine in addition to the Pinto and Zetec engines.

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### **221 - Radiators and Cooling**

The following rules will be moved from the “Zetec” section of the rulebook (233) to the “Radiators and Cooling” section (221) as they apply equally to all engine types.

**Change:**

- The following rules apply to ALL engine types:
    - 233.22.1 - “A water-based liquid cooling system MUST be used.”
    - 233.22.2 - “The use of a water coolant additive is permitted.”
    - 233.22.10 - “Any radiator and associated pipes are permitted.”
    - 233.22.11 - “The use of electric fans is permitted.”
    - 233.22.12 - “The use of mechanical fans is permitted.”
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**222.3.3 - Fuel Shut-Off Tap**

The 2015 rulebook states:

- “222.3.3 - A fuel shut-off tap MUST be fitted in the fuel line, and be positioned within easy reach of the driver when strapped in their seat.”

It is recognised that not all drivers wish to route the fuel pipe through the driver’s cab area for no reason other than to allow access to a fuel shut-off tap. A number of cars have been observed with a remote cable operated tap, allowing the fuel feed to be cut without the need to route the fuel pipe through the cab area. While technically in contravention of the existing rule, this is seen as a permitted variation, and therefore the wording of this rule will be changed to permit such installations.

**Change:**

- The use of a remotely operated fuel-tap, utilising a steel cable, is permitted.
  - In all cases, the driver MUST be able to demonstrate that they can operate the fuel shut-off tap when strapped in their seat, and that any operating mechanism fully closes off the fuel-feed line when used.
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**230 - Engines - Performance Ignition Systems**

A new rule regarding ignition systems will be added to the general engine rules section of the rulebook.

**New Rule:**

- The use of performance ignition systems, including, but not limited to, MSD multi-spark and digital ignition control systems is NOT permitted.
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**233 - Zetec Engine Mounts**

A new rule regarding engine mounts will be added to the Zetec engine section of the rulebook.

**New Rule:**

- The engine mount MUST be constructed so as to allow the insertion of a crankshaft-locking pin in to the block as part of the scrutineering inspection process.
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**233 - Zetec Cylinder Head Gaskets**

The 2015 rulebook states:

- “233.15.1 - Cylinder head gaskets are free, but MUST conform to the thickness measurements detailed below.”
  - “233.15.2 - Cylinder head gaskets, as specifically fitted to the permitted 2.0-litre Zetec engine types detailed above, with the Ford part numbers 1071744 or 1105772, are the ONLY genuine original Ford gaskets permitted for use. These are the recommended gaskets for use in BriSCA F2.”
  - “233.15.3 - Original Ford Motor Company Ltd. cylinder head gaskets with part numbers different to those specified above are NOT permitted.”
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- “233.15.4 - The cylinder head gasket MUST measure at least a MINIMUM thickness of 1mm when compressed, and 1.25mm when uncompressed.”

**Change:**

- Ford Motor Company has advised that part number 1105772 has now been superseded by 1308385, and therefore 233.15.2 will be changed to reflect this.
  - Original gaskets supplied by Ford are no longer guaranteed to meet the thickness specification of 233.15.4. Therefore the above rules will be changed to remove the thickness specification.
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**2.0-litre Duratec Engine**

It is noted that the 2.0-litre Duratec engine testing has yielded little in the way of progress or benefit, and the 2.0-litre Zetec unit has now largely superseded it.

**Change:**

BriSCA F2 have therefore decided that the 2.0-litre Duratec engine may be used for the 2016 and 2017 seasons, but from 01-Jan-2018 it will NO LONGER be permitted, thus giving it a 2-year run-out period.

The 2.0-litre Duratec unit may continue to be used by those drivers granted permission by BriSCA F2 to run it, subject to the following:

- The 2.0-litre Duratec MUST conform to the 1.8-litre Duratec rule specifications
  - The 2.0-litre Duratec MUST use standard original 2.0-litre Duratec specification camshafts only
  - The 2.0-litre Duratec may NOT be used in championship events
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# **Previously Published Rules: Effective 1-Jan-16**

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## **203.3 - Roll-cage 7<sup>th</sup> Pillar**

As per the statements in the 2015 rulebook:

- A new “7th roll-cage pillar” will be MANDATORY from the start of the 2016 season with the aim of increasing protection for the driver’s head (effective 01-Jan-2016).
  - The 7th pillar MUST be installed vertically (when viewed from the rear) in the centre of the rear “window” aperture, mid-way between the left and right rear pillars of the roll-cage.
  - The 7th pillar MUST connect the centre of the top transverse bar joining the two rear roll-cage pillars, to the centre of the middle transverse bar joining the two rear roll-cage pillars (to which the top edge of the rear steel plate is currently welded), using a single length of material.
  - The 7th pillar must follow the same profile as the current rear pillars, such that it sits inside of, or level with, a straightedge butted up against the left and right rear roll-cage pillars at any point along their length. Where the centre of the roof and/or rear window transverse cross-member(s) protrude beyond the profile of the left and right rear roll-cage pillars, e.g. a curved out transverse rear-window cross-member, or a curved up transverse roof cross-member, a MAXIMUM distance of 75mm (3in) from the rearmost edge of the 7th pillar to the rearmost edge of the rear roll-cage pillars’ profile will be permitted.
  - There is no mandatory requirement for the 7th pillar to extend right down to the main chassis as it is designed to prevent intrusion through the rear window (whereas the existing steel plate is designed to prevent lower intrusion). However, it is permitted to construct the 7th pillar in this way if so desired.
  - The material specification will be the same as the existing roll-cage pillars - SHS or CHS with a MINIMUM wall thickness of 3mm, and a MINIMUM size of 30mm x 30mm (SHS) or 30mm diameter (CHS).
  - All joints MUST be fully welded.
  - The 7th pillar is required IN ADDITION to the existing vertical bars and cross-members used to support the driver’s seat and to which the mandated headrest plate must be welded.
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## **203.4.6 - Roof Plate**

As per the statement in the 2014 and 2015 rulebooks:

- “203.4.6 - From 2016, ALL cars MUST conform to the MINIMUM 560mm x 400mm dimensions specified in rules 203.4.2 / 203.4.3”
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## **204 - Bumpers**

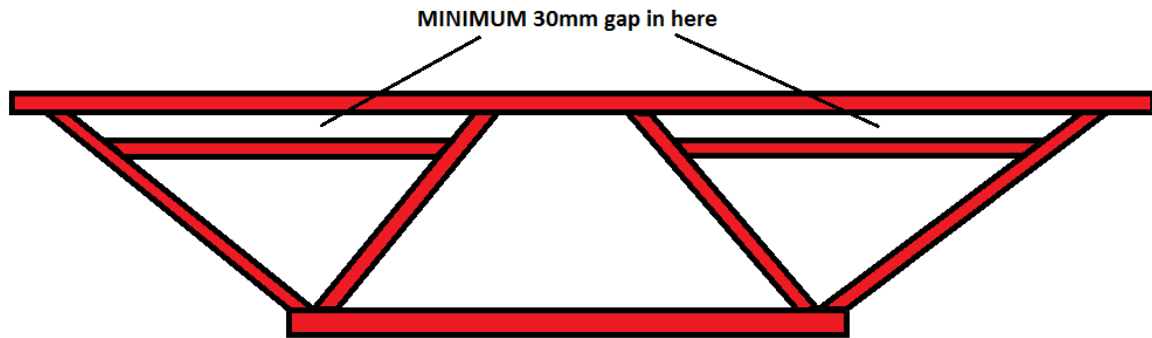
As per the statements in the 2015 rulebook:

- From 2016 onwards the welding of additional transverse material, e.g. SHS or RHS, to the inner side of bumper faces (for strengthening or any other purpose) will NOT be permitted (effective 01-Jan-2016).
- From 2016 onwards double thickness bumpers with additional lengths of box section welded in parallel to the inner face of the bumper will NOT be permitted (effective 01-Jan-2016).
- The use of small sections of steel plate, welded to the inner side of the bumper face, on to which diagonal bracing is welded WILL still be permitted.

To help clarify this rule further, the following changes/additions to the wording of the bumper rules will apply.

### **Change/Addition:**

- A MINIMUM gap of 30mm is required between the bumper face and any additional transverse bracing.



- The use of small sections of plate, welded to the **FRONT** face of the bumper blade, to effect repair, or provide strengthening for bends, **is permitted**, subject to the following:
  - The **MAXIMUM** plate size permitted is 100mm x 100mm.
  - The **MAXIMUM** plate thickness permitted is 5mm.
  - It is **NOT** permitted to double-stack, overlap, or join plates together.
  - When added to the existing bumper blade, the total overall thickness must **NOT** exceed the permitted 30mm (2015 rule 204.4).
- The use of small sections of plate, welded on the **REAR** face of the bumper blade, in to which the diagonal bracing is run, or used to provide strengthening/support for diagonal bracing, **IS** permitted, subject to the following:
  - The **MAXIMUM** plate size permitted is 100mm x 100mm.
  - The **MAXIMUM** plate thickness permitted is 5mm.
  - It is **NOT** permitted to double-stack, overlap, or join plates together.
  - Plates may only be used where a brace runs in to the bumper blade.
  - Such plates are **NOT** included in the total overall thickness measurement for the current rule 204.4 (maximum 30mm).

## **223 - Exhausts Heat Wrap**

As published in a rule statement earlier in 2015:

- For the avoidance of doubt, the use of heat wrap on any part of the exhaust system is **NOT** permitted.

## **226 - Multi-Deck Aerofoils**

As per the statement in the 2015 rulebooks:

- The use of multi-deck aerofoils/wings will **NOT** be permitted from the 2016 season onwards (effective 01-Jan-2016).
- From 2016 any aerofoil/wing **MUST** be constructed with a single centre section, consisting of a single-deck, and a **MAXIMUM** of 1 left-hand side plate, and 1 right-hand side plate (as per the dimensions above).

# **Reminders for Common Non-Conformances**

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## **203.4.10 - Roll-cage Rear Plate**

As stated in the 2015 rulebook:

- *“203.4.10 - The rear plate MUST be FULLY welded along all sides (to the two roll-cage pillars, the chassis cross-member, and the mandated roll-cage cross-member).”*

A significant number of rear plates have still been observed that are not compliant with this rule. Drivers are requested to ensure that these plates are fully welded, as per the rule, prior to the commencement of racing in 2016.

It is noted that in some cases the driver/constructor has made it difficult for the scrutineer to inspect the rear plate by riveting a body panel over the plate. In such cases BriSCA F2 and/or their appointed representatives reserve the right to request that a driver remove any such body panel to allow inspection of the safety plate and its welding.

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## **204.12 - Bumper Chains**

As stated in the 2015 rulebook:

- *“204.12 - Bolt-on bumpers MUST have a MINIMUM of TWO secondary fixings to prevent the bumper leaving the car should the mounting bolts break in an impact. Each secondary fixing MUST comprise of a steel chain made of MINIMUM 8mm thick diameter links, with ends joined together by a MINIMUM 8mm thick diameter steel shackle encompassing a threaded securing mechanism. The use of nuts, bolts and washers to join the ends of the chain is NOT permitted. Each secondary fixing chain MUST be wrapped around BOTH the chassis and suitable section of the bumper.”*

Drivers are specifically reminded that this rule changed a number of years ago and ALL secondary fixings MUST comprise of a steel chain and joining shackle, both of a minimum 8mm diameter material.

Steel cables, nuts & bolts, small diameter chains, etc. are NOT permissible fixings, but drivers still present at scrutineering with such items.

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## **215.5.8 - Rear Axle Mounting Holes Sealing**

As stated in the 2015 rulebook:

- *“215.5.8 It is permitted to seal off any original mounting-holes (over and above those permitted within the above rules) by:*
  - *In-filling with weld.*
  - *Covering with a welded plate.*
  - *Any other permanent method.*

*The use of ANY nuts and bolts (standard or security in design), or non-permanent components, is NOT permitted.*

*Where filled with weld, the hole(s) MUST be FULLY filled; the use of a simple tack-weld is NOT permitted.*

*Where a plate is used, the plate MUST be attached by a MINIMUM of 2 welds on opposite edges of the plate, each a MINIMUM of 10mm in length.”*

Once again it is necessary to remind drivers of the above rules as a significant number of cars are still presented at scrutineering with nuts and bolts filling holes, holes not being blanked off, and/or other non-permanent methods of blanking-off.

This rule has been in place for a number of years and there is no excuse for non-conformance.

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### **220.9/222.3.4 - Ignition Switch and Fuel Shut-Off Markings**

As stated in the 2015 rulebook:

- *“220.9 - A battery isolator switch, in the earth circuit, MUST be fitted to the dashboard of the car at the base of the windscreen in an easily accessible position (from the outside). The On/Off positions of the switch MUST be clearly marked on the dashboard, and the location of the switch MUST be clearly marked on the outside of the car where it can be seen by track marshals.”*
- *“222.3.4 - The location of the fuel shut-off tap MUST be clearly marked on the outside of the car where it can be seen by track marshals.”*

Drivers continue to present at scrutineering without the required markings on key safety components. There is NO excuse for not displaying such simple, but effective markings.

If not a part of any sign-writing, simple stickers are readily available from suppliers like Demon-Tweeks, or various sources on eBay.

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### **222.2.9 - Fuel Tank Protection**

As stated in the 2015 rulebook:

- *“222.2.9 - The fuel tank MUST be protected from intrusion by an additional single steel plate or steel tubes (both MINIMUM 2mm wall thickness). Any steel plate used may be a MAXIMUM of 6mm in thickness.”*

A number of cars were observed in 2015 with minimal protection for the fuel tank. This is a key safety element in the construction of the chassis and scrutineers will be on the lookout in 2016 for cars that do not incorporate sufficient protection.

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### **222.2.10 - Fuel Tank Size**

As stated in the 2015 rulebook:

- *“222.2.10 - If fitted outside of the main chassis rails, the fuel tank MUST be positioned next to the chassis rail with **NO gap** between the outside edge of the rail and the inside edge of the tank. The **outer edge** of the tank may be a **MAXIMUM distance of 9in (228mm) from the outside edge of the main chassis rail**. The **outside edge** of the tank MUST be a **MINIMUM distance of 10in (254mm) from the outside edge of the nerf rail(s)**.”*

A number of cars were observed in 2015 with fuel tanks positioned with gaps between them and the chassis rail, or tanks that were too wide and therefore extended beyond the maximum 9in from the chassis rail.

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### **223.5 - Exhaust Welding**

As stated in the 2015 rulebook:

- *“223.5 - Welding is **NOT** permitted on the silencer unit within 25mm of the silencer box.”*

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### **231.20.3/4 - Pinto Engine Sealing Holes**

As stated in the 2015 rulebook:

- *“231.20.3 - A hole of 3mm diameter MUST be drilled through the camshaft cover and cylinder head above the No.1 cylinder spark plug.”*

- *“231.20.4 - A hole of 3mm diameter MUST be drilled through the opposite side of the camshaft cover and cylinder head from the No.1 cylinder spark plug.”*

A significant number of engines have been noted as not having the required holes to allow BriSCA F2 and/or its appointed representatives to seal them for later inspection as per the above rules.

All drivers MUST ensure that the required holes for sealing are present on their engines.

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### **Rocker Arms - NO Modification**

As stated in the “General Rules Reminder” statement, issued 21<sup>st</sup> August 2015:

- *“The modification of rocker-arms/camshaft-followers to remove material from the standard component for lightening or any other purpose... is NOT permitted.”*

Any modification to rocker arms, as with any other engine components, will be subject to disciplinary proceedings and a mandatory 6-month ban.

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