



Technical Car Construction Regulations

Changes for 2018 and Beyond

Version 2.0 (Published) – 27th November 2017

Summary

- Following publication of the “*Technical Car Construction Regulations, Changes for 2018 and Beyond*” document, on 9th October 2017, BriSCA F2 has received extensive feedback that was not raised during the initial consultation period. Additional questions of clarification have also been submitted.
- Having listened to the feedback, and discussed it with BDF representatives, agreement has been reached on a few amendments to some rule changes listed in the original document.
- This document details those amendments, and answers the questions of clarification raised.
- This document is divided in to a number of sections, in line with the original, as follows:
 - Changes to be implemented in 2018 (in green)
 - Clarifications of existing rules (in green)
 - Changes to be implemented in 2019 (in blue)
 - Deferred Rule Change Proposals (in purple)
 - Ongoing Engine Discussions/Issues (in black)
- The heading numbers in this document relate to the original proposal numbers published back in July 2017.
- Text in red highlights an amendment from the original document, or the answer to a question of clarification.
- This document is NOT necessarily the exact wording that will go in the rulebook for each change, but at this stage provides the appropriate information to drivers/constructors as to what will require changing for 2018 (or beyond) and allow them to commence winter projects. The full rule wording will be provided in the near future.
- Consultation is still ongoing regarding a number of engine rules/issues and further details will be published as soon as practically possible (but well in advance of the 2018 season).

Rule Changes for 2018

The following rule changes will be implemented for the **2018** season, effective 1st January 2018:

Chassis

(1.) Chassis – Main Rails

- All cars **MUST** be constructed with two main chassis rails running longitudinally from the front to the rear of the car.
- The main rails **MUST** start/terminate forward of the front axle, and rearwards of the rear axle.
- Both main rails **MUST** be installed in the same symmetrical orientation when viewed from the front/rear, e.g. both with edges parallel/perpendicular to the ground, or at 45 deg.
- **The centreline of the chassis must be perpendicular to the front and rear bumpers, with the main rails equidistant from it at all points along its length.**
- **The lower chassis-rails/undercarriage must NOT extend beyond the footprint of the main chassis-rails and their cross-members.**

Note: From research, it is not believed that this affects any current cars, but this is a tidy-up for consistency (as a number of other rules assume/imply such) and to prevent any future excessively-complex chassis development. If you believe this would affect your car then please contact BriSCA F2.

(2.) Chassis – Main Rails Height

- The vertical centreline along the entire length of the main chassis rails and the vertical centreline of all transverse cross-bracing between the two main chassis-rails **MUST NOT** be lower than the vertical centre of the bumpers
- In simple terms, the main chassis rails and transverse cross-bracing must be level with, or above the level of the bumpers at all points.
- **The seat mounting cross-member(s) between the main chassis rails may be bent down or profiled to the seat, to allow for correct fitment.**

Note: From research, it is not believed that this affects any current cars, but this is a tidy-up for consistency and to prevent excessively complex future chassis development with lowered chassis rails. If you believe this would affect your car then please contact BriSCA F2.

(5.) Ballast (2)

- The lamination of steel plates in the construction of ANY part of the car, or the installation/construction of multiple steel plates in close proximity to each other, which can be construed as ballast, will **NOT** be permitted.

Cab / Roll-Cage

(13.) Roll-cage Height

- The current rule 203.3.3 which states: *“The roll-cage **MUST** be constructed from two main hoops running up from the main chassis rails, **over the height of the driver’s head**, and back down to the chassis rails again.”* is **NOT** changing.
- Additional wording will be added to the existing rule to ensure compliance and provide an easy method of checking.
- Therefore, a flat bar, **MINIMUM** 2mm in thickness (e.g. a steel/aluminium rule), **MUST** be able to pass straight through the cab from side to side, under the level of the roll-cage hoops **AND above the driver’s helmet** (when the driver is sat in the car in the racing position) without bending/deflection.
- **The integrity of the roll-cage structure is of paramount importance, and therefore ANY changes to the roll-cage to ensure that the car complies with the current rule, must be undertaken only by a competent person to a standard equal to or better than the original roll-cage construction.**
- Seat manufacturers’ installation instructions **MUST** be followed when installing the seat, and simply changing the seat position in order to comply with the existing rule might not be safe or in the driver’s interests.
- Rule 210.6.2 will be changed to state that the differential must **NOT** be able to contact the driver’s seat if the rear shock absorbers are disconnected – see below. This is to help prevent dangerous seat installation in order to meet roll-cage height rules.

(14.) Roof Plate Construction

- The roof plate **MUST** be constructed from a single sheet steel plate only – curved, bent or folded as required, subject to other current roll-cage height and roof width rules.
- The welding together of multiple sections of plate will **NOT** be permitted.

Rear Axle**(New) Differential**

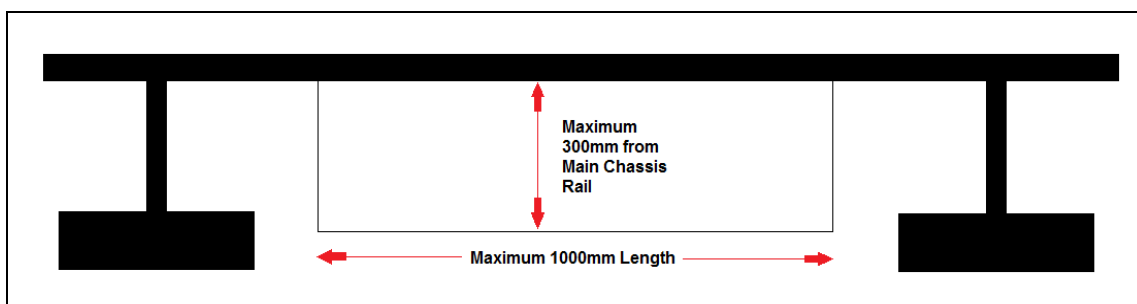
- Rule 210.6.2 will be changed, for safety, to state that the differential **MUST NOT** be able to contact the driver's seat if the rear shock absorbers are disconnected, or at their maximum compression.
- It **IS** permitted to add additional material (e.g. a piece of RHS, a dense rubber block) to the underside of the chassis rail, or the top of the axle casing, to ensure the differential does not contact the seat.

Front Suspension**(New) Suspension Component Mounting**

- **Independent Front Suspension** – All front suspension mounting components, including bottom arms, compression struts, wishbones, and shock-absorber rockers, must **ONLY** be mounted to the chassis (at the component's pivot point) on the same side of the chassis centreline as the wheel they are supporting.
- **Front Beam-Axle** – The radius arms mounting the beam-axle to the chassis must **NOT** cross the centre-line of the chassis.
- **Note:** *From research, it is not believed that this affects any current cars, but this is a tidy-up to prevent any future excessively-complex chassis development.*

Floor / Side-Pod / Sump-Guard**(21.) Side-pods / Floors**

- The installation of any floor/side-pod section, outside of the main/lower chassis rails will **ONLY** be permitted for the purpose of mounting/protecting any fuel-tank and/or battery.
- Only a **SINGLE** side-pod/floor section, outside the main/lower chassis rails, will be permitted on each side of the car.
- The permitted length of any floor/side-pod section outside of the main/lower chassis rails will be a **MAXIMUM** of 1000mm (front to rear) at all points, such that the entire pod fits within a 1000mm long imaginary rectangular box (see diagram below). The outer edge of any pod must **NOT** be any more than a **MAXIMUM** of 300mm in distance from the vertical plane of the edge of the main chassis rail at any and all points.
- Any side-pod/floor must **ONLY** sit between the front & rear wheels when viewed from the side/above.
- Any side-pod/floor section outside of the main/lower chassis rails...
 - **MUST NOT** be constructed any further forward than the vertical plane of the rear-most point of the front wheel/tyre (when pointed straight ahead).
 - **MUST NOT** be constructed any further rearward than the vertical plane of the front-most point of the rear wheel/tyre.
- Any side-pod/floor section outside the main/lower chassis rails must be constructed with no more than a **SINGLE** floor section, and no more than a **SINGLE** outer wall section.
- The zig-zagging or multiple folding of plate, or construction using multiple sections of plate, to form channels, "walls", or floor sections, or additional internal "wall" or floor sections, or any other sections not for the purpose of supporting or protecting the fuel tank and/or battery will **NOT** be permitted.



(22.) Additional Floor Sections

- The construction/installation of any floor section outside of the footprint of the main/lower chassis rails and cross-members, other than as specified above (see 21.), will NOT be permitted. For example, steel plate around the left-front wheel area.

Bumpers / Nerf-Rails**(24.) Bumper Blades**

- Bumper blades (front and rear) MUST be constructed from material with a MINIMUM wall thickness of 2.5mm, e.g. 50mm x 25mm x 2.5mm RHS, or 25mm x 25mm x 2.5mm SHS.

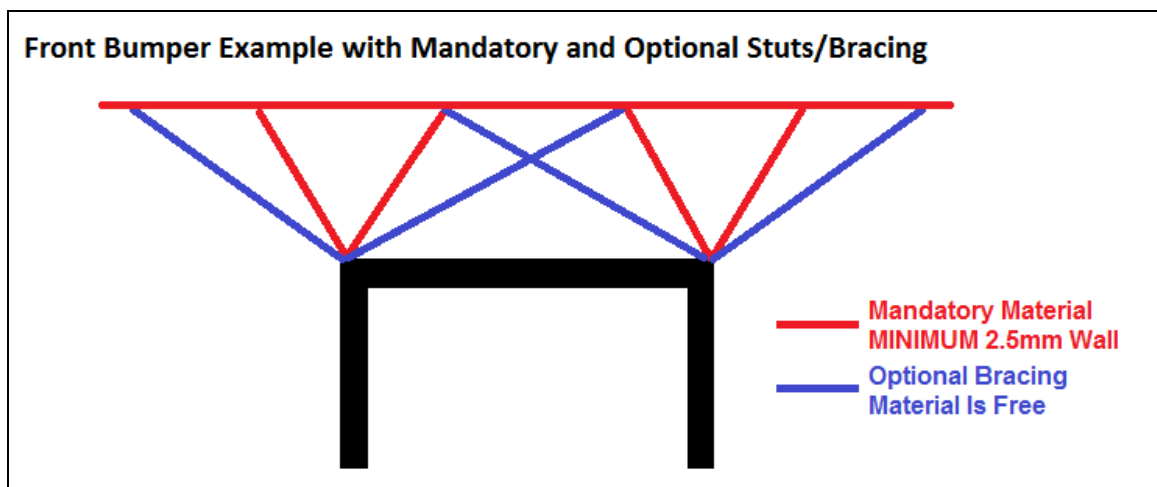
(25.) Rear Bumper Hoops

- Optional hoops will be permitted on the rear bumper for the purpose of protecting the rear of the roll-cage, and/or preventing another car from riding up and over the rear wheel(s).

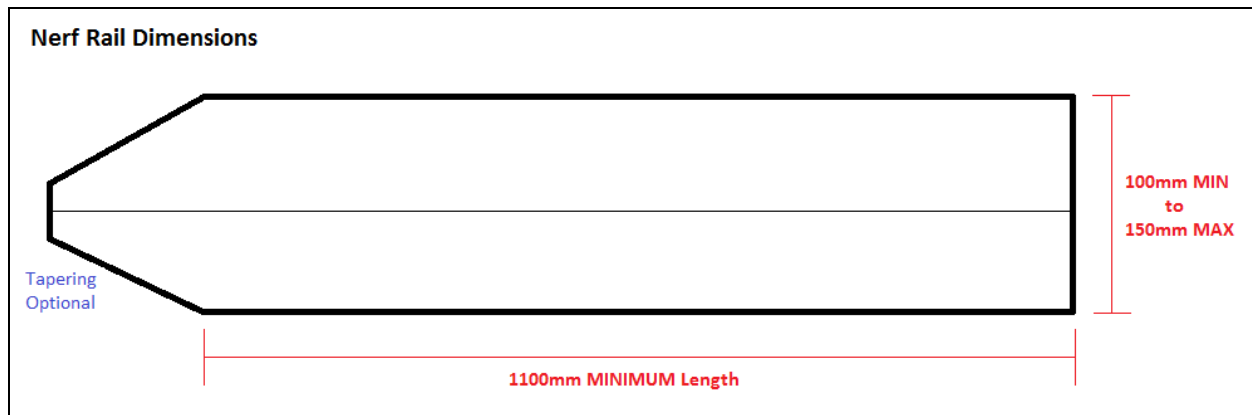
Note: Such a practice is currently accepted, however, there is no specific provision for it in the current rulebook. Hoops over the rear and/or left-front wheels are NOT permitted.

(26.) All Bumper Hoops/Supports

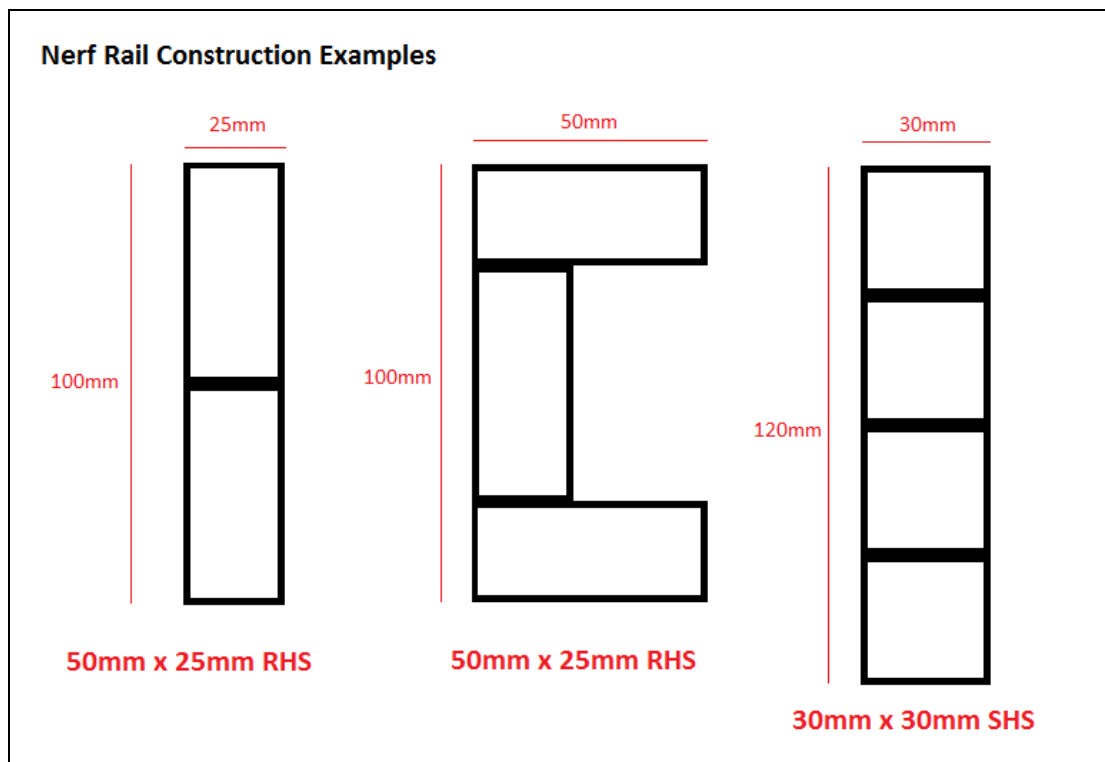
- All bumper hoops, front and rear**, and their mandated bracing/supports MUST be constructed from a MINIMUM material specification of 25mm CHS/SHS x 2.5mm wall thickness.
- Front Bumper** – A MINIMUM of four angled mounting bars/brackets, connecting the front bumper blade to the chassis main chassis (via bolt-on brackets, or directly welded), with two on each side of the chassis, MUST be fitted and constructed from a MINIMUM material specification of 30mm SHS, 30mm CHS, or 25mm x 50mm RHS, all with a MINIMUM wall thickness of 2.5mm.
- Front Bumper** – Additional bracing/mounting bars (other than those mandated above) are free.
- Rear Bumper** – The mounting brackets/bracing for the rear bumper blade are free.
- The lightening of ANY/ALL mandated specification material is NOT permitted.

**(28.) Nerf-Rails Outer Section (Blade) (2)**

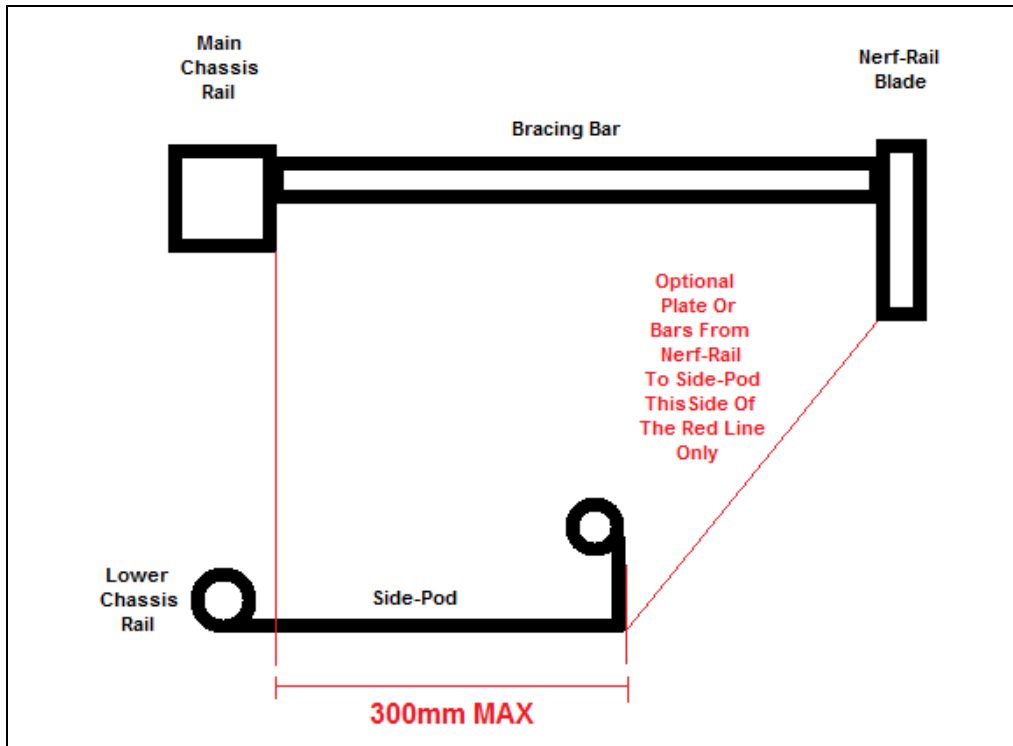
- The nerf-rails MUST be constructed with an outer “blade” configuration similar in appearance to the front and rear bumpers (subject to dimensions specified below).
- The nerf-rail outer blades MUST be constructed from a MINIMUM material specification of 50mm x 25mm x 2.5mm wall RHS, or 30mm SHS. The use of CHS in the construction of nerf-rail blades is NOT permitted.
- The lengths of SHS/RHS must be welded together to form a vertical “blade” with a flat outer face, subject to the min/max dimensions specified below.
- Nerf-rail blades MUST be no smaller than a MINIMUM of 25mm in thickness, and 100mm in depth.
- Nerf-rails blades MUST be no larger than a MAXIMUM of 50mm in thickness, and 150mm in depth.
- Nerf-rails blades MUST run for a MINIMUM length of 1100mm, from front to rear, at the minimum depth specified above (see diagram below).
- Tapering the ends of the nerf-rail blades is permitted, but the tapering must NOT form part of the minimum 1100x100mm specification. Sharp-pointed tapers are NOT permitted.



- Any additional brackets required for the mandated wheel-guard **MUST** be in addition to the mandated minimum material dimensions above.
- The requirement for an additional under hoop at the rear of the nerf-rail will be removed.
- The ends of the nerf rail blades must be capped as per existing rules.
- The nerf rails and bracing (see 29. below) **MUST** be symmetrical in appearance when viewed from above.
- The vertical centre of the nerf-rail **MUST** be level with, or lower, than the vertical centre of the main chassis rail (to prevent the nerf-rail from being too high).
- The top edge of the nerf rail **MUST** be level with, or within 25mm below, the level of the top of the front and rear bumpers (to prevent the nerf-rail being too low, but still permitting the bracing to be installed from the centre of the main chassis rail to the centre of a top piece of 50x25mm RHS used in its construction).
- The drilling and sleeving of a single circular hole at the rear of the nerf rail, with a **MAXIMUM** diameter of 35mm, for the express purpose of socket access to a wheel-guard mounting bolt is permitted.
- The cutting and sleeving of a square/rectangular hole within the nerf-rail face, for the purpose of mounting the wheel-guard through, is permitted. The **MAXIMUM** dimensions of any such hole are 75mm tall (the maximum permitted height of a wheel-guard), and 100mm in length.
- The lightening of the nerf-rail, or the drilling of holes (other than those expressly permitted above), is **NOT** permitted.

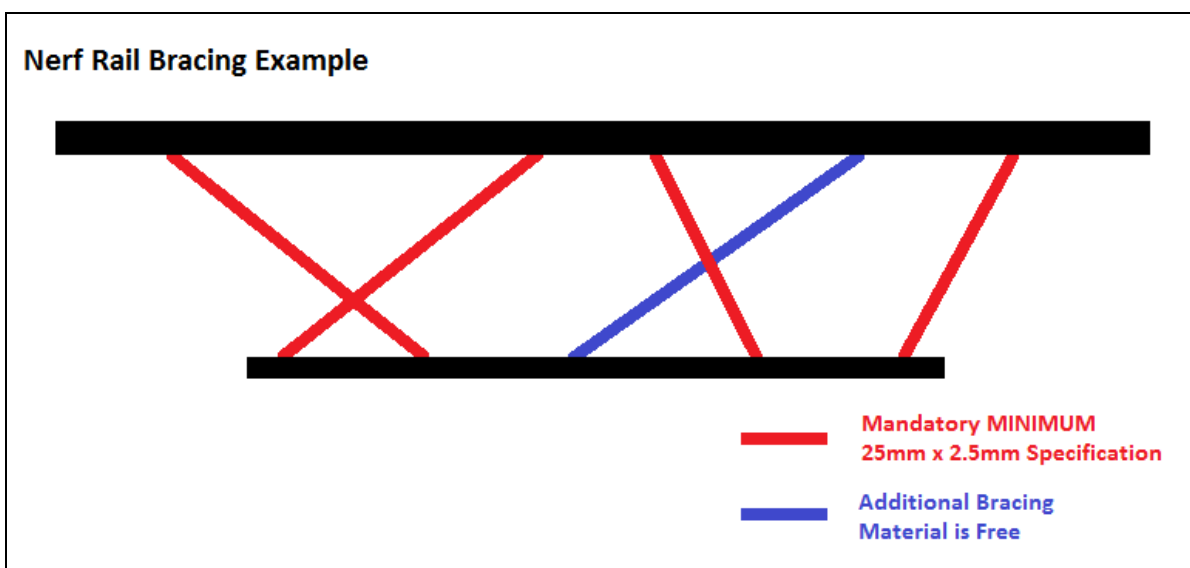


- Any additional optional material attached to the nerf-rail, e.g. a fuel tank protection plate or protection bars, must only be constructed within an area bordered by the main/lower chassis rails, the side-pod, the nerf-rail, the nerf-rail bracing to the main chassis, and a straight line linking the lower outermost point of the side-pod to the lower innermost point of the nerf-rail (see diagram below).



(29.) Nerf-Rail Bracing To Main Chassis

- The nerf rails MUST be connected/braced to the main chassis rails, by a MINIMUM of 4 braces on each side of the car, each of the 4 with a MINIMUM material specification of 25mm CHS/SHS x 2.5mm wall thickness.
- It IS permitted for the 4 mandated braces to cross.
- Additional nerf-rail to main chassis-rail bracing (over and above the 4 mandated braces) is free in both quantity and material specification.
- The lightening of the nerf-rail braces, or the drilling of holes in them, is NOT permitted.



(30.) Nerf-Rail Bracing To Under Chassis

- The nerf rails **MUST** be connected/braced to the lower under-chassis rails, diagonally, by a **MINIMUM** of 2 braces on each side of the car, each of the two with a **MINIMUM** material specification of 25mm CHS/SHS x 2.5mm wall thickness
- Additional nerf-rail to lower/under-chassis rail bracing (over and above the 2 mandated braces) is free in both quantity and material specification.
- Where a side-pod is installed, it **IS** permitted to brace the nerf rail to the side-pod construction material, rather than the lower chassis rail on that side of the car.
- The lightening of the nerf-rail braces, or the drilling of holes in them, is **NOT** permitted.

(31.) Nerf-Rail Width

- Rule 205.10 will be changed to state that nerf rails must not extend past the wheels, on the axle with the widest track width, by more than 50mm.

Note: This is purely a clarification and will not require any currently legal car to be changed to comply.

(New) Bolt-On Bumpers

- Bolt-on bumpers **MUST** be bolted to the chassis by a **MINIMUM** of 4 in number (2 on each side of the chassis), 12mm diameter high-tensile bolts with lock-nuts.

Wheels / Tyres

(42.) Tyres (1)

- Testing of an alternate tyre is ongoing as a number of drivers are still providing valuable input to a final decision on this component.
- Mandating the use of an alternate tyre is the “first-step” on a journey, and not the “final destination”. Such a change to the current mandated tyre facilitates that first step without rendering existing stocks of tyres useless.
- BriSCA F2 reserves the right to mandate a change to the location (on the car) of any alternate tyre during the course of the season, with an appropriate notice period of at least 14 days.
- Any alternate tyre would **NOT** be regularly moved around the car. This wording would permit a change mid-season (if so desired) to allow it to be evaluated in a different position on the car (something that would require a significant period of time to do), not a switch back and forth from one meeting to the next.

Electrical

(50.) Electric Cut-off Pull-cord

- A mechanical electric cut-off pull-cord, as currently required in all formulas at all tracks in the Netherlands, **MUST** be installed in **ALL** BriSCA F2 cars.
- The handle of the pull-cord **MUST** be securely mounted in the **left-rear** section of the driver's cab area, behind the driver's seat, and face rearwards, such that it can be pulled backwards away from the car, not upwards.
- Refer to details published on the briscaf2.com website in the technical statement 10th March 2017: http://briscaf2.com/_assets/documents/2017/2017-03-10%20-%20technical%20statement%20-%20electrical%20cut-off%20pull-cord%20-%20netherlands%20-%20v1.0%20final.pdf

(51.) Battery

- The use of a single “075” battery (245mm x 175mm x 175mm), as an alternative to one or two “063” batteries will be permitted.

Brakes

(New) Master Cylinder

- Only a **SINGLE** braking system master cylinder, with a single bore/piston, and single outlet will be permitted.
- The installation/use of multiple master cylinders is **NOT** permitted.
- The installation/use of a single master cylinder unit with multiple circuits is **NOT** permitted.
- The installation/use of a single master cylinder unit with multiple or differential bores/pistons is **NOT** permitted.

- The MAXIMUM permitted master-cylinder bore size is 1¹/₈ inches (28.58mm).

(New) Brakes – Bias Valves/Levers/Reducers

- Only a SINGLE brake-bias/pressure-reducer/fluid-pressure adjustment device, valve, or lever, with a single input and single output will be permitted.
- The installation/use of multiple reducers, bias adjusters, or other brake performance altering devices will NOT be permitted.
- The installation/use of adjusters with multiple input/output connections is NOT permitted.
- The installation/use of adjusters with multiple bores is NOT permitted.
- The installation/use of on/off brake taps is NOT permitted anywhere on the car.
- The installation/use of electrically operated bias/shut-off/reduction valves is NOT permitted.
- The installation/use of in-line (residual) pressure valves is NOT permitted.

Fuel

(55.) Fuel Tank Mounting

- As an augmentation to the current rule 222.2.11, where the fuel tank is fitted outside of the main chassis rail, then one side of the fuel tank MUST be parallel to the main chassis rail. Existing gap/measurement rules still apply.

Note: The existing rule implies this to be the case, but this is not explicitly stated. It is expected that this additional wording will not affect any current cars.

(56.) Fuel Supply

- Where BriSCA F2 or a promotion exercises the right to supply fuel to a driver for a race or meeting (as per current rule 222.4.3) then, if required/requested to, the driver MUST pay for the fuel to be used PRIOR to racing at the meeting (or the individual race).
 - The initial fee WITHOUT CVL will be set at £20 for an entire “normal” format meeting, or £10 for a single race (as the entire tank will be drained and completely refilled)
 - The initial fee WITH CVL will be set at £30 and £15 respectively.
 - These figures will be reviewed regularly to ensure the driver is paying only to cover the cost of the fuel/CVL fuel supplied and nothing more. This is NOT a profit making exercise.
 - Where a driver suffers early race damage and is unable to compete in more than half his/her scheduled races at an event then an appropriate partial refund may be made at the conclusion of the meeting.
 - Any refusal to pay for the fuel, or use the fuel provided, will be treated as a refusal of a technical check, resulting in an immediate suspension and a technical disciplinary process being invoked (a process that could lead to a racing ban).
 - Where a driver is required to pay for his/her fuel, then any fuel drained from their tank will be returned to them (a small sample may be taken). The driver is responsible for providing an appropriate container for the drained fuel.

Bodywork

(57.) Engine Cover (2018)

- The use of ventilation holes at the rear sides of the engine cover ONLY (above the main chassis rails) to allow sufficient air-flow through the engine compartment to provide adequate engine cooling will be formally permitted.
- The use of open holes drilled in the sides or top of the engine cover will NOT be permitted.
- Where a ventilation hole is employed, the engine cover/side MUST overlap with subsequent panel-work.
- Ventilation holes on the top of the engine cover will NOT be permitted.

Note: Many existing shale car examples of such ventilation holes are already compliant and will not require modification. In some cases, illegal holes will require sealing up or modification.

Engine – Duratec

(63.) Duratec Permitted Use (1)

- Permitted use of the 1.8-litre Duratec engine will be restricted, with only drivers currently using such an engine on a regular basis being permitted to continue to run it.

- The currently permitted drivers are: #362 Dave Harley, #729 Richard Ellis, #935 Nathan Maidment, and #942 Gareth Hamer.
- Use of the 2.0-litre Duratec engine will be withdrawn after the end of the 2017 season, as per the current rulebook.

Engine – All Engine Types

(58.) Rev. Limit / Restriction.

- The 2-litre Pinto engine WILL be restricted for the 2018 season.
- A number of driver volunteers are currently providing valuable input to this decision by testing restriction methods, and the preferred method will be announced in a timely manner in due course.

(65.) Alternator

- The use of a single standard alternator, driven from the front of the engine as per the original production cars to which the engine was fitted, will be formally permitted.

Exhaust – All Engine Types

(66.) Prohibit 4-to-2-to-1 and Multi-Collector Exhaust Systems

- As per the note on page 56 of the 2017 rulebook, the use of “multi-collector” and “4-to-2-to-1” exhaust systems will NOT be permitted.
- ALL exhaust systems MUST be constructed to a “4 in to 1” design with only a single collector permitted to merge the header pipes in to a single main pipe.

Bell-Housing – All Engine Types

(68.) Specification (1)

- Original Ford specification bell-housings, or commercially available after-market direct replacements will be permitted, in their original manufactured specification, subject to any other permitted modification specified in the rulebook (e.g. the mandated 25mm inspection hole) and coverage rules below.

(69.) Specification (2)

- The bell-housing MUST fully enclose the clutch/flywheel assembly around its entire circumference, from the vertical plane of the rear of the engine block to the face of the gearbox, subject to any other permitted modification specified in the rulebook (e.g. the mandated 25mm inspection hole, or clutch cable access).
- The use of “open-bottomed” bell-housings that do not completely encircle/enclose the flywheel/clutch (e.g. to allow the engine to be mounted lower in the chassis) will NOT be permitted.

(70.) Specification (3)

- The removal of material from the bottom of any bell-housing in order to lower the bell-housing/engine in the car, or the removal of any material for any other purpose (other than the mandated 25mm inspection hole, and/or clutch cable access, as separately specified), is NOT be permitted. This is NOT a change to current rules, merely a re-emphasis.

Grading Colours

(72.) Roof Colours – Silver/Grey/Gold

- The use of ANY shade of grey, silver, or gold for the roll-cage and/or “ear” panels above the waistline of the car will NOT be permitted, other than by the National Series Champion (Silver), or World Champion (Gold).

Note: All other roof colour rules remain the same. Grey will NOT be classed as a neutral colour.

Illegal Components

(75.) **Component Retention Car Components**

- The meeting promoter or a senior BriSCA F2 official will retain any component suspected of being illegal (for example, an underweight flywheel, or an illegally modified engine component). The driver will be subject to a technical investigation/disciplinary process as appropriate.
- In the case of engines, only the suspected component will generally be retained, however, should the allegation be sufficiently serious (e.g. the crank, rods and pistons), then the entire engine may be retained during the investigation/disciplinary process.
- Any retained component deemed to be legal and within the rules will be returned to the driver.
- BriSCA F2 will retain any component deemed illegal.

Personal Safety Equipment

- Any personal safety equipment presented for a safety check (e.g. helmet, gloves, balaclava or race-suit), that does not conform to the current rules, or is determined to be unsafe (e.g. gloves with holes in them) may be retained during the meeting by the scrutineer, promoter or appointed official.

Helmets

- Any helmet presented for a safety check that does not conform to the current standards will be labelled with an ORCi “Failed” sticker and only returned to the driver at the end of the meeting.

Gloves

- Any gloves presented for a safety check, which are deemed beyond repair, will be retained by the promoter, senior BriSCA F2 official, or their appointed representative.
- Any gloves that fail a safety check, but that are deemed repairable, will be returned to the driver at the end of the meeting.

Clarifications

The following clarifications will be added to existing rules in the current rulebook for the avoidance of any doubt.

-
- 208.4 Floor**
- A floor which folds or curves up at the rear, e.g. to meet the seat-mounting or another cross-member is permitted.
 - Any such floor **MUST** meet the mandated 600mm length in the horizontal plane (i.e. from the vertical plane of the firewall to the vertical plane at the rear-most point of any such a floor where it meets the cross-member).
- 219.5.1/2 Floor**
- A folded-up/curved-up floor, that comes up to meet the seat-mounting or another cross-member, does **NOT** count as a mandated prop-shaft hoop.
- 213.2/3 Coil/Leaf Springs**
- Only a single spring is permitted on each corner of the car, either a coil spring, or a leaf spring. **The use of both on the same corner is NOT permitted.**
- 213.1.6 Shock Absorber / Coil-Spring Mounting**
- Each individual shock absorber must be predominantly mounted below the level of the main chassis rail.
 - At least half the length of each shock absorber (measured between the centre of the top and bottom mounting bolts/bearings), when the car is at rest, must be below the top of the main chassis rail adjacent to where the shock absorber is mounted.
 - **Where a coil spring is installed independently of a shock absorber, then it must be predominantly mounted below the level of the main chassis rail.**
 - **At least half the length of each independently mounted coil spring(s), when the car is at rest, must be below the top of the main chassis rail adjacent to where the spring is mounted.**
- 220.1 Battery**
- The use of AGM (Absorbed Glass Mat) type batteries, which are often mistakenly referred to as gel-type batteries, e.g. Varley Red-Top, and Odyssey Extreme, is permitted.
- 222.2.10 Fuel Tank Protection**
- The current rule specifies a minimum thickness for the fuel tank protection plate/bars, but not a minimum tube size.
 - A **MINIMUM** tube size of 25mm CHS/SHS x 2mm wall thickness **MUST** be used in the construction of any fuel-tank protection bars.
- 231.15.3 Pinto Flywheel**
- The bare flywheel weight rule (minimum 6.2Kg) includes the ring-gear.
- 233.9.7 Zetec Front Pulley**
- The crankshaft pulley and damper is a single unit.
- New Update Pinto Cylinder-Head Bolts**
- The rulebook will be updated to reflect the accepted practice of shortening standard original cylinder-head bolts, use of a spacer washer, or deepening the threaded hole in the block, when both the head and block are skimmed as per existing rules.
 - The use of 2 studs, of equal or lower tensile strength than the original Ford cylinder-head bolts, to replace the two centre cylinder-head bolts to facilitate the use of a bolted-on strap over the camshaft centre-post, will be explicitly permitted. The other 8 cylinder-head bolts **MUST** be standard (as above/below).
 - The original Ford pattern cylinder-head bolts (6-point Torx late stretch type, or 12-point spline early non-stretch type) **MUST** be used (subject to the two permitted studs as above). There is **NO** provision in the current rulebook for the use of non-standard/non-original cylinder head bolts, but this clarification will explicitly state that.

New Update Pinto Camshaft Follower Springs

- Heavy-duty camshaft follower retaining springs are NOT permitted.
- There is no provision in the current rulebook for such items (they are non-standard), and therefore an update for 2018 will explicitly state this.

New Update Pinto Valve Springs

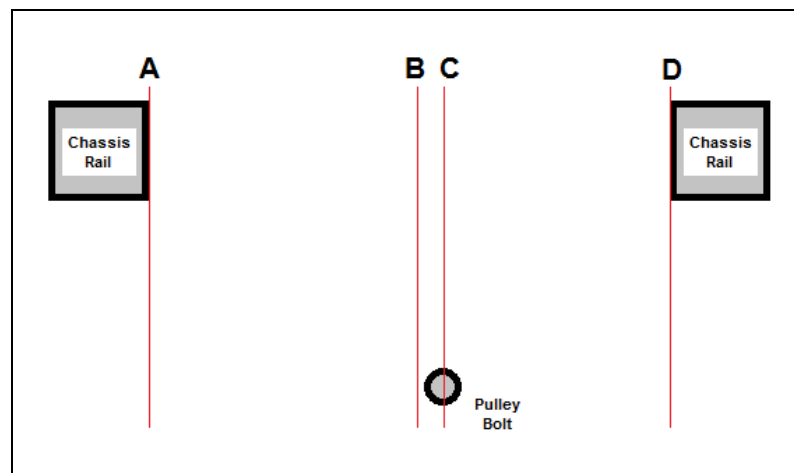
- The rulebook will be updated to reflect the accepted/permitted use of competition valve-springs, subject to existing valve-spring rules.

New Update Pinto Sump

- The rulebook wording will be updated to reflect the accepted/permitted use of modified/enlarged sumps.

New Update Engine Offset

- A diagram will be included in the rulebook to clarify the method of measurement for engine offset (similar to below).
- The existing wording will be updated to specify that...
 - Measurement is to be taken horizontally from the vertical plane of the centre of the crank pulley bolt (C) to the vertical plane of the inner edge of each chassis rail (A) and (D) when the chassis is sat level. *[These planes will only be vertical if the chassis is sat level, so raising up one side of the chassis to make the chassis rails level may be required. Alternatively measurements can be taken using a square/straight-edge, from a straight-edge placed across the chassis rails, thus removing the effect of the ground/surface not being level.]*
 - The two measurements (C to D, and C to A, in the example diagram below) MUST NOT differ by more than 50mm.
 - Halving the difference between the two measurements (C to D, and C to A in the diagram below) will give the offset from the vertical plane of the centreline of the chassis (C to B).
 - The distance from the centreline of the chassis to the centre of the crank pulley bolt MUST NOT be more than 25mm.



Changes for 2019

The following rule changes will be implemented for the **2019** season, effective **1st January 2019**:

(4.) Ballast (1)

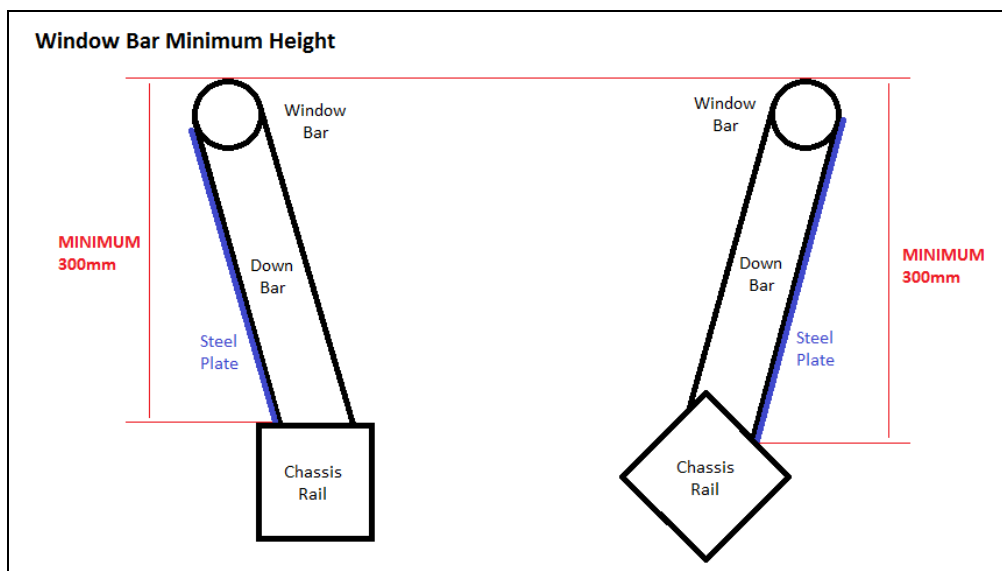
- The **MAXIMUM** permitted steel plate thickness, in **ANY** part of the car, will be reduced to a **MAXIMUM of 3mm** (unless specifically permitted elsewhere in the rules, e.g. the cab floor).
- This change will cover plate such as the side-pods, fuel protection, and cab sides/rear.
- This change will **NOT** include plate used in the construction of items such as wishbone brackets or rear-axle link bar mounting brackets.
- The “stacking” of more than two lengths of tube (e.g. RHS, SHS, CHS) in the construction of the chassis, side-pod, fuel-tank/battery protection, or other parts of the car will be reviewed during 2018, with limitations potentially being put in place for 2019, e.g. a minimum gap between tubes.

(10.) 30mm Minimum Roll-cage Material (DEFERRED)

- The implementation of a minimum 30mm CHS/SHS x 3mm wall specification for all roll-cage material (window-bars, down-bars, etc.) **has been deferred**.
- **The roll-cage construction rules for 2019 will remain the same as 2017/18, subject to any other changes noted elsewhere in this document** (e.g. minimum window-bar heights, cab side-plating).
- The installation of the 2mm cab side plates (see below) will provide an increase in strength over current rule requirements to the safety structure around the driver. Data shows that the majority of drivers will simply be able to have the side-plates welded on to existing roll-cage structures to meet the new requirements.
- **However... a FULL formal roll-cage review will now take place over the next couple of years**, taking a longer-term holistic view of the entire safety structure around the driver.
 - Drivers, constructors, and promoters will all be invited to provide input to the review, along with any professional advice as required.
 - Areas to be reviewed include, but are not limited to, material specifications, roof dimensions, roll-hoop pillar angles, sideways strength, structural design, driver access, & seat installation.
 - Any conclusions/recommendations, especially if major and affecting all drivers, will be implemented over an appropriate time-frame, balancing the number of affected cars, workloads of constructors, and run-out of current specifications, with requirements for the continued/improved safety of competitors, officials, and fans, and the ever changing requirements of insurers and Health & Safety legislation.

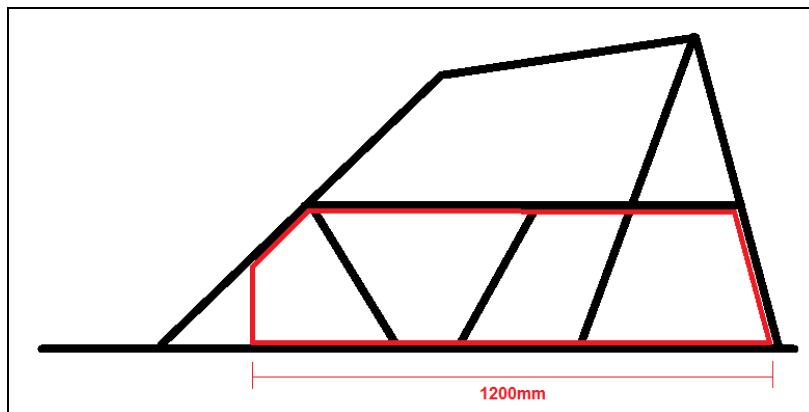
(11.) Side-Window Bar Minimum Height – (in conjunction with 15. below)

- Side window bars **MUST** measure a **MINIMUM height of 300mm** vertically from the top of the bar (excluding bodywork panels) to the point at which the steel side-plates are welded to the main rails.
- The minimum measurement applies to all points along the length of the window bar, from the front roll-cage pillar to the rear roll-cage pillar.



(15.) Roll-cage Plating – (in conjunction with 11. above)

- BOTH sides of the roll-cage MUST be plated in steel plate (with a MINIMUM thickness of 2mm) to fully enclose the area bordered by the main chassis rail, the rear roll-cage pillar, the side window bar, and the front roll-cage pillar (or an additional down-bar as necessary to meet dimensional requirements).
- The plate MUST be fitted as either a single piece (formed as required), or up to a MAXIMUM of 3 pieces on each side of the car (for easier fitment on non-flat cab sides).
- The plate MUST be fitted to the outside of the roll-cage/window-bar/down-bars, or inset NO MORE than a MAXIMUM of 5mm from the outer edge of the tube.
- The plate (each plate section) MUST be fully welded to the roll-cage structure along the full length of each of its sides (in the same manner as the existing rear panel).
- The area covered by the plate MUST measure at least a MINIMUM of 1200mm in length, from the rearmost point where the rear roll-cage pillar meets the chassis rail, horizontally, to the vertical plane where its front-most point meets the chassis rail.
 - Should the roll-cage be less than 1200mm in length, i.e. the 1200mm measurement extends forward of the front roll-cage pillar, then an additional steel bar (minimum 25mm CHS/SHS x 2.5mm wall), MUST be welded around the exposed forward/upper edges of the plate, and link the chassis rail to the front roll-cage pillar.
- As the plate must be welded to the window-bar along its top edge and chassis rail along the bottom edge, then the plate height is determined by the height of the window-bar (see above).
- The front edge of the plate must be vertical, or angled forward, from the point at which it meets the main chassis rail, up to the front roll-cage pillar, the window bar, or the required additional bar (depending on the size of the cab).

**(20.) Cab Floor (2) – (in conjunction with 4. above)**

- The MAXIMUM permitted thickness of the cab floor will be **4mm**.

(21.) Side-Pod – (in conjunction with 4. above)

- The MAXIMUM permitted thickness of the side-pod floor/wall will be 3mm.

(22.) Additional Floor Sections

- The construction/installation of any steel floor section between the main chassis rails forward of the driver/engine firewall or reward of the driver's seat, will NOT be permitted.
- The use of thin aluminium plates (on the sides, or underneath the chassis) to prevent ingress of shale/dirt in to the engine bay that may clog up the radiator or other moving components will still be permitted.

(23.) Sump-Guard (in conjunction with 4. above)

- The MAXIMUM permitted thickness of any sump guard will be 3mm (steel plate), or 5mm (aluminium chequer-plate). A MAXIMUM width may also be specified (Further research is required during the 2018 season).

(67.) Exhausts - Standardised Rules

- Exhaust rules will be standardised for ALL engine types, and based on the current Zetec rules (tube size, header length, collector length, etc.).

Deferred Rule Change Proposals

The following change proposals have been deferred, either to permit more time for research, or to monitor the effects of the 2018/2019 changes before making a decision. **No dates have been set for any possible implementation.**

(3.) Ground Clearance

- Introduce a MINIMUM ground clearance (e.g. 50mm, 75mm, 100mm) at all points under the chassis and any side pod(s).

(10.) 30mm Minimum Roll-cage Material (Formal roll-cage/safety-structure review to take place – see above)

- All external sections of the protective roll-cage MUST be constructed from a MINIMUM tube specification of 30mm CHS/SHS x 3mm wall thickness. This includes, but is not limited to:
 - Main hoops (No change from current spec.)
 - Additional 5th/6th pillars (middle pillar on each side) (No change from current spec.)
 - 7th pillar (in the rear window) (No change from current spec.)
 - Roof cross-members (No change from current spec.)
 - Cross-member at the base of the rear window aperture (Currently 25 x 2.5mm min spec.)
 - Cross-member at the base of the front windscreen aperture (Currently 25 x 2.5mm min spec.)
 - Side window bars (sometimes referred to as “chicken-bars”) (Currently 25 x 2.5mm min spec.)
 - Down-bars (from the side-window bars to the main chassis) (Currently 25 x 2.5mm min spec.)
 - ANY and ALL other parts of the outer roll-cage that could be impacted by another car.

(19.) Cab Floor (1)

- Restrict the length of the cab/driver-compartment floor.
- The floor should not be permitted to extend rearwards of the front edge of the driver’s seat by any more than a fixed distance (e.g. 50mm, 75mm, 100mm), while still conforming to the minimum 600mm length from the firewall.
- Alternatively, mandate a maximum floor length (e.g. 750mm), so long as the rear edge is level with, or behind the front edge of the driver’s seat.

(53.) Fuel Cut-off (Further research required)

- Mandate a single fixed location for the mandatory fuel cut-off switch/tap/pull-cord.

(54.) Electric Fuel Pump (Further research required)

- Mandate that electric fuel pumps MUST cut out, if the engine stops running.

(64.) Duratec Permitted Use (2)

- Withdraw the permitted use of the Duratec engine, from the start of the 2019 season (or maybe 2020), for those already running such an engine on a regular basis.
- **A 2-year run-out period will be given if/when any such decision is implemented.**

Ongoing Engine Discussions/Issues

A number of rules regarding Pinto engines are still being discussed.

It is expected that interested parties will conclude discussions in the near future, with any changes notified to drivers/engine-builders shortly thereafter.

Engine – Pinto

(59.) Water Pump Pulleys

Proposal: Mandate that the water pump pulleys (on the crankshaft and the water pump) must be a standard original size.

Reason(s):

- **Performance** – To avoid performance gains from experimenting with speeding-up/slowing down the water pump to minimise loss of horsepower.

(61.) Ignition Module

Proposal: Mandate the use of the standard Ford/Motorcraft ignition module, designed for the Pinto engine, only. Smaller ignition modules bolted to distributors, or those manufactured for other makes, e.g. Peugeot should not be permitted.

Reason(s):

- **Standard Ford Components.**

(New) Ignition

- Coils
- Lumenition devices

(New) Carburettor

- Gaskets
- Modifications

(New) Cylinder-head gaskets

(New) Lubrication

(New) Plastic Fuel Pumps