

# Outlaw F2 Stock Car Specification

## Definition

An Outlaw stock car shall be front engined, open wheeled, single seat car with a steel space framed chassis. The centre line of the car will be determined as the centre of the two main chassis rails (when viewed from above) and the engine, gear box, seat, and rear axle will be fitted along the centre line of the car within the tolerances of 1 inch. Minimum weight is 650kg and the maximum weight is 750kg. Cars will be weighed in race trim but without the driver.

## Type of Construction

Car construction is to comply with rules and regulations of Brisca and Speedworth F2 cars from 2009 onwards.

## Chassis and cab.

All cars must have a steel chassis of welded construction, the chassis rails must be constructed of RHS with a minimum wall thickness of 3mm. They must be of a minimum size of 40mm x 40mm or a maximum of 70mm x 70mm. The chassis shall have an integral 6 pillar roll cage welded to the main rails, consisting of 2 longitudinal roll bars, above the height of the drivers head joined together by two cross bars, one at the front of the roof and one at the rear of the roof above the height of the drivers head. A further two cross bars must be welded to, and connecting the longitudinal roll bars, one at the front to also mount/support the steering column and one at the rear, both at the same height as the side bars, approximately elbow height. This makes a four point roll cage. In addition, a fifth and sixth bar must be welded between the longitudinal bars and the chassis rails approximately in line with the seat and must measure a minimum of 750mm at the driver's seat/shoulder position. These bars must not rely on any other component as part of their construction. This makes the six point roll cage and this structure shall be constructed of 30 x 30mm RHS or 30mm round tube minimum of 3mm wall thickness. In addition, a minimum of one vertical bar the same size and gauge as the main roll cage, must be welded between the rearmost rollcage top bar and the rear rollcage cross bar (the rear window aperture) to stop a bumper contacting the drivers head. Two vertical bars or two bars forming a cross will be acceptable

if the driver feels this is safer. The remainder of the roll cage must be constructed of 25mm x 25mm RHS or 25mm round tube minimum, 2.5mm wall thickness, and must consist of side bars that must be welded to the roll cage pillars, at approximately elbow height and running between the front and 5<sup>th</sup>/6<sup>th</sup> pillars and continue from these pillars to the rear pillars. These bars must measure a minimum of 750mm wide at the driver's seat and must be joined to the main chassis rail by 2 vertical tubes of 25mm x 2.5mm minimum welded at both ends between the chassis and side bars, equally spaced between the front and the front 5<sup>th</sup>/6<sup>th</sup> pillars. The steering wheel must be well inside the front roll cage pillars, and there must be a 100mm (4") difference between the driver's legs and the steering support cross member when seated in the driving position. A sheet of steel plate no less than 3mm thick must be welded continuously to the top of the roll cage on all 4 sides. The plate must measure a minimum of 500mm long x 400mm wide.

The roll cage must be constructed so that the drivers head and body remains within the confines of the cage at all times. When the driver is strapped and wearing a helmet there must be AT LEAST 1" clearance between the top of the helmet and the roof plate.

### Bumpers and Armouring

Front and rear bumpers must be steel and have a flat surface of 100mm deep and be 30mm thick maximum with both the bumpers permitted to extend out past the tyre. Front and rear bumpers must measure between 400mm and 450mm (15 ¾ inches and 17 ¾ inches) from the ground, at the centre of the car, without the driver. Bolt on bumpers must have a secondary securing chain (2 front and 2 rear) Front bumper hoops / under run bars must follow the pattern in appendix A.

Front bumpers must incorporate a 'crumple zone' between the main chassis and bumper to eliminate the bumper being mounted strait onto the chassis main rails. The mounting, (welded or bolted), must conform to appendix B. This is the minimum approved mounting and more mounting members may be incorporated if the driver prefers. However, any extra strengthening must be angled in a similar manner to the minimum approved mounting, as detailed in appendix B.

Side rails must extend around the rear wheels, joining the rear bumper. The side rails must not extend more than height of the wheel rim. The wheel guards must be securely fitted and be capable of sustaining heavy

impact. The side rails must measure between 400mm and 450mm (15 ¾ inches and 17 ¾ inches) from the ground, without the driver.

### Safety Harness

The safety harness MUST consist of two separate shoulder straps, two separate lap straps, and an “anti-submarine” crotch strap (sometimes referred to as a sub-strap). The safety harness MUST be of either a 5-point or 6-point design. 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 crossmembers 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.

### SPECIFICATION OF FORD PINTO 2 LITRE OR FORD 2 LITRE ZETEC ENGINE

A Ford 2 litre SOHC NE type engine or a Ford 2 litre Zetec engine must be used.

### PINTO TWO LITRE

All parts appertaining to the engine must be standard Ford 2ltr SOHC items fitted as fitted to the original engine type and production engine tolerances are allowed. The removal or addition of any material to combustion chamber or ports is not allowed unless specified below. The engine may be painted inside and out except in the aforementioned areas and internal painting does not change the surface from matt to smooth.

Blocks: Blocks maybe over bored to 1.5mm or sleeved back to 90.84mm and rebored back to 1.5mm oversized. Main bearing houses may line bored. Blocks may be skimmed but pistons may not protrude above the face of the block at TDC.

Cranks: A standard crank shaft must be used. Spot machining to achieve

balance is permitted. Tough riding, shot peening and shot blasting is permitted but polishing is not permitted. Crank shaft minimum weight is 28lbs (12.7kg). It is not permitted to alter the number of bearings or fit bearings of less than minimum width. Oversized and undersized bearings of standard or heavy duty material are permitted. Cross drilled crank shafts are not permitted.

Conrods: Spot machining is permitted to achieve balancing using the pad on the big end cap only, but the body weight on the small end may be removed, and high tensile bolts may be fitted. Tough riding, shot blasting and shot peening is permitted but polishing is not permitted.

Pistons: Pistons must be of any Ford production type (not power maxed or forged) and unmodified except for balancing as detailed. All 3 ring must be fitted and be of standard type. To achieve balance, material may be removed from the inner surface at any location. To allow the refacing of the cylinder blocks, pistons crowns maybe machined and at least one piston must remain its original manufacturer's markings.

Cylinder Heads: The head face may be skimmed. Ports and chambers must be of original cast as by Ford. No fettling is permitted except in the areas between the valve seat and the valve guide. The ports must have original casting 20mm in on the exhaust ports and the inlet ports. It is permitted to use 3 angle valve seats and valve seat inserts may be used to repair damaged heads, but these must be accompany the exact position of the original seats. No additional metals or materials to the ports or chambers is permitted. Valves must be of standard type with head diameters IN 42mm +- 0.2mm EX36mm +- 0.2mm, and no lightening is permitted. Valve guides may be replaced but must occupy their normal position. Only 8 valve springs per engine are permitted, spring seats maybe machined and shims maybe used to achieve correct fitted length. Steel valve spring caps may be used. 2 camshaft centre main bearing caps maybe strapped.

Camshafts: Camshafts profile is free providing no other part of the engine have to be machined to allow fitting. Ford pattern cam followers of any manufacturer of the slipper type, made of steel or iron are permitted, including those produced with hardened inserts. No roller or alloy followers are permitted. Standard camshafts bearings maybe used but centre drilling is allowed to improve lubrication. A Vernier timing wheel is permitted.

Gaskets: Any standard non competition head gasket maybe used.

Carburettor: Only the standard Webber 32/36 DGV or DGVA carburettor maybe used with a maximum of 26mm and 27mm size chokes. No polishing or porting is allowed.

Inlet Manifolds: Inlet manifolds must be of standard with no matching or porting.

Exhaust: Exhaust manifold systems are free but silencers are compulsory.

Fly Wheels: Fly wheel and clutch must be standard 2ltr components, but fly wheels maybe machined down to a total minimum weight of 12.31kg including cover, drive plate and all mounting bolts.

### ZeTec 2 litre ENGINE

The Ford ZeTec 2 litre engine may be used, but must be the same standard configuration / tolerances as the production engine as supplied by Ford for use in a standard road car. The only exceptions are the specialist parts which allow the engine to be used in a Stock Car. The same Carburettor as outlined in the Pinto regulations must be used. It is stressed that standard Ford road cams must be used, but cam timing is free. Engine checks will be carried out at unannounced events

### Axle, Wheel and Transmissions

The car shall have 4 wheels. Steel or alloy wheels maybe used up to a maximum of 6 inch wide fronts and a maximum of 10inch wide on the rear.

Rear Axle: Rear wheel drive only is permitted with locked differential of any ratio. Both halfshafts must be of equal length. Limited slip differentials are not permitted to be used at Outlaw race meetings. However, cars being raced on a day licence at tracks whose rules permit such devices, (for instance Grimley and Standlake & Barford 'Open Meetings') will be allowed to use one, on a one off basis. Locked differential checks will be carried out randomly, throughout the season. Anti roll bars of any kind are not permitted at Outlaw sanctioned meetings. Any braking system may be used but must be in full working order.

### Windscreen

Windscreen mesh must be fitted with a minimum mess of 40mm square x 2.4mm thickness.



### Driver's Seat

A 3mm steel plate must be fitted to the bottom of the seat covering the full width and length and a prop shaft loop must be fitted minimum of 25mm x 3mm flat steel. The driver's seat may be of metal construction or fibreglass/Kevlar (rally type/spec)

### Head Rest

A head rest must be fitted behind the driver's seat with a steel plate minimum thickness of 3mm

### Head Restraints

Unless a 'Hans Device' is worn, a head restraint/window net must be fitted to the right side of the cab to stop the drivers head making contact with the roll cage in the event of a side impact.

### Fuel Tanks

Fuel tanks must be of steel or aluminium construction with a minimum of 2mm thickness and no more than 3 gallon capacity. If tank is fitted behind the driver's seat it must have a full firewall in place. If the tank is mounted outside of the cab, a steel plate not less than 3mm thick must be fitted securely underneath it.

### Car Weight

Car must weigh minimum of 650kg to a maximum of 750kg without the driver at any one time. Cars must be presented to the scales with enough fuel to allow the car to be driven from the scales & for a locked diff check, if required.

### Steel Floor

Steel floor and ankle side plates made from 3 mm steel plates must be securely welded from the fire wall to the front of the driver's seat.

### Roof Wings and Grade Colours

Roof wings are optional and if fitted must be fitted securely. The forward mountings, if from the windscreen pillars, must be mounted on the outside of the pillars so as to minimise the risk of the mountings entering the cab in the event of a roll over. The roof wing must be painted completely in the current grading colour. Any sign writing on top of the grading colour may be as you desire but must not interfere with official racing numbers. In the case of cars with no roof wing, the car roof must be painted in the current grading colour down to the waist line of the car.

## Numbering

The driver's registered number must be painted on both sides of the tallest side panel of the roof wing. They must be neatly shown in black, a minimum of 12" high and 2" wide (larger if possible) on a white background. If a roof wing is not fitted, a number board must be fitted, large enough to accommodate the correct size numbers, again, black numbers on a white roof board. It would be helpful to the lap scorers if the numbers/white background be painted in matt so as not to reflect under the track lights and to be kept clean and visible prior to each race. To assist lap scoring, and cars lining up for re starts, the driver's number should appear on the rear of the car, recommended inside the rear window aperture, to keep it clean. It should be black on white, minimum size 9" high and 1" thick.

## Safety Wear

Overalls, gloves must be worn at all times and must all be fireproof and clearly marked so. Shatterproof goggles/ visors must be worn. A fireproof balaclava must be worn when racing. FIRE PROOF UNDERWEAR AND FIREPROOF RACE BOOTS IS ENTIRELY AT THE DRIVERS DISCRETION.

## Helmets

Helmets must meet or exceed the minimum standards set by BORSE (British Oval Racing Safety Executive) As of January 27<sup>th</sup> 2018 these were..

FIA 8860-2004. FIA 8860-2010. Snell SA2005 (This standard will be reviewed at the end of the 2018 season) Snell SA2010. Snell SA2015 Snell EA2016.

SFI Foundation 31.1A.

SFI Foundation 31.2A

ECE R22.05 (In Fibreglass, Carbon or Tri-Composite form ONLY)

**ALL HELMETS MUST BE FIBREGLASS, CARBON OR TRI-COMPOSITE ONLY. NO EXCEPTIONS.**

It is important that the helmet fits the driver correctly.

These Helmet rules may be changed by BORSE, and/or IOPD. This is not within the control of the Outlaws or any officials concerned with the organisation of race meetings.

POLITE REQUEST.. Please can helmets be reasonably clean when presented for scrutineering. Clean enough to be able to check for damage. Thank you..

### Wheels / Tyres

Outlaw Stock Cars must use 13” wheels at Outlaw sanctioned events. D Mack Grabber Pattern tyres must be fitted to all four wheels.

### Scrutineering

Presentation of a vehicle for scrutineering is a declaration by the entrant that the vehicle is eligible for that event.

It is recommended that drivers arrive at the meeting at least 1 hour before the meeting. The cars must be presented for scrutineering, at the designated scrutineering bay, ready to race, with seat belts and wing fitted and accompanied by the designated driver. The driver must have his licence, helmet and overalls with him and be prepared to be measured, sitting in the car if required to do so.

### Race procedure.

Outlaw Stock Cars use a ‘Raceciever system’ in which the race director can talk directly to the drivers at all times. He/She will start the race by calling for a rolling lap with instructions on spacing and speed. The instruction to start racing is GREEN GREEN GO GO. The instruction to stop racing (either at the end of the race or due to a dangerous incident on track) is RED RED STOP RACING. ALL drivers MUST come to a stop as quickly and safely as possible, and await instructions from either race control or track officials on track and care must be taken. Continuing at racing speed for a race suspension will gain nothing as the re start order is taken from the previous lap. Continuing at high speed will be dealt with robustly by officials. If you are the cause of the stoppage you must retire from the race, even if you are uninjured and the car is fit to continue. If you win a race you must start at the rear of YOUR GRADE for the remainder of the meeting.



### Drivers briefing.

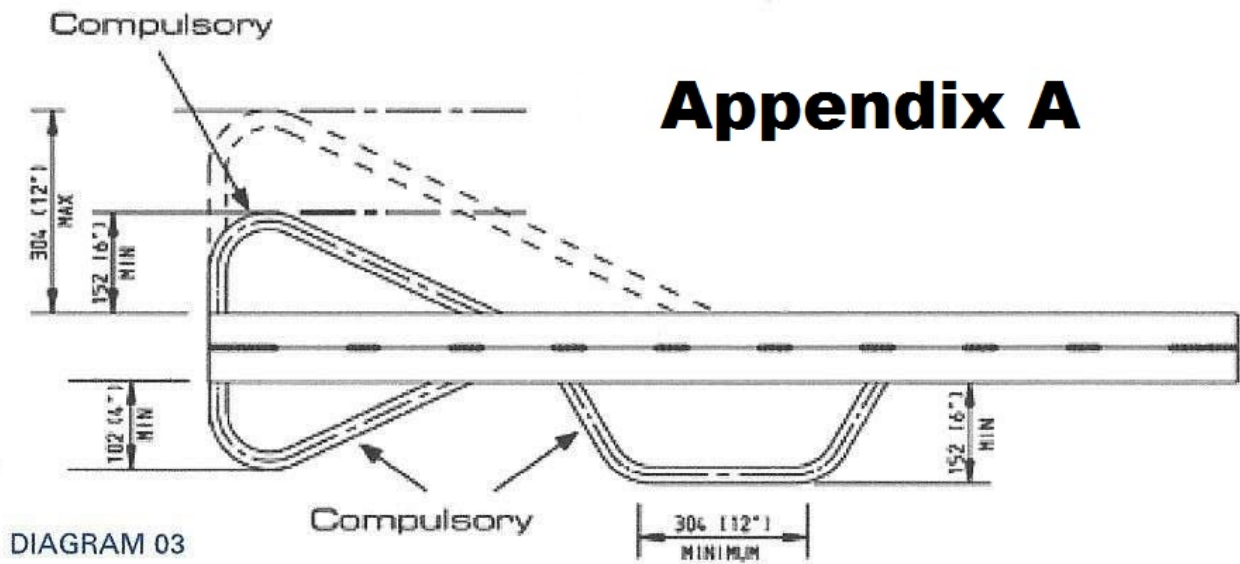
Approximately 30 minutes before the first outlaw race, a Drivers Briefing will take place close to the Outlaw van. This briefing will cover race and general safety procedures. All drivers MUST attend this briefing and must also sign to prove their attendance and understanding of the points highlighted. This is mandated by both the track and Outlaw insurance companies.

### Conduct in the pits and during a race.

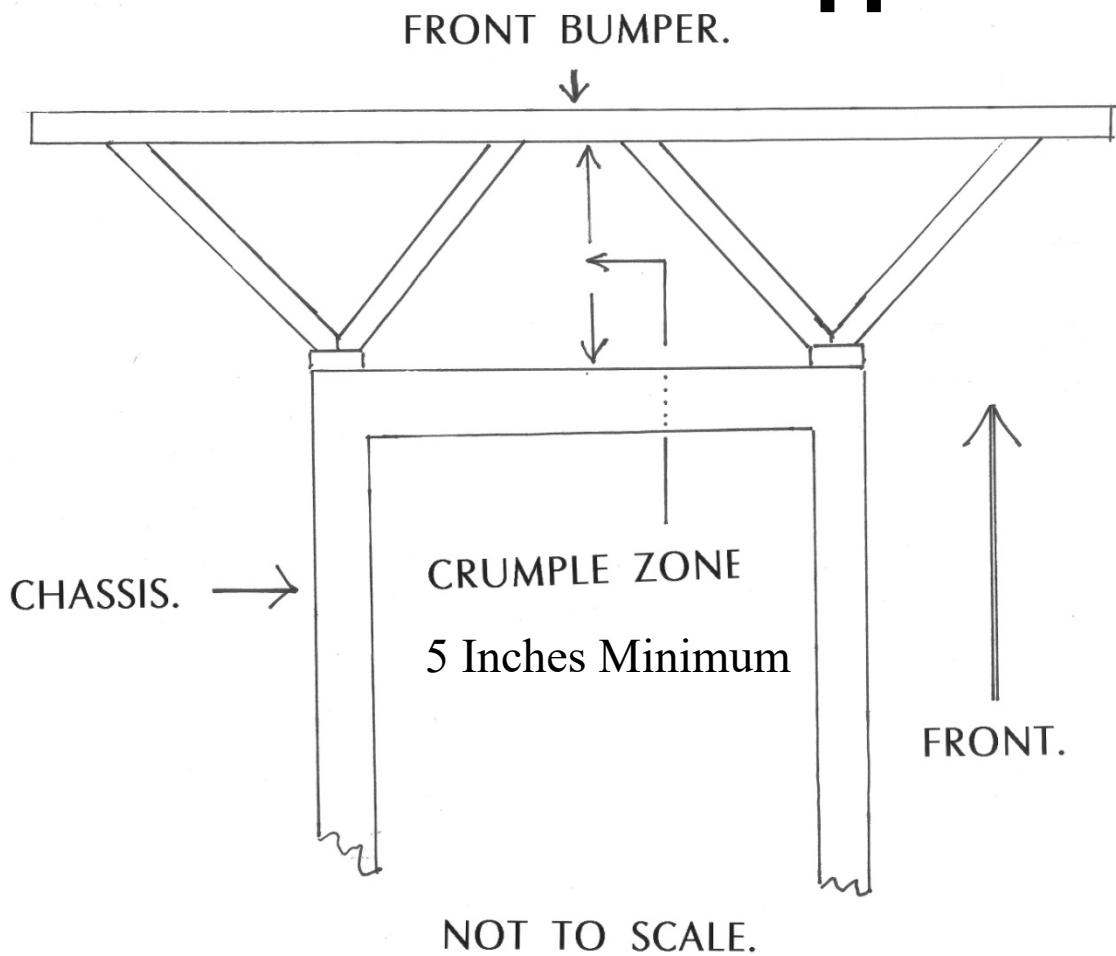
The driver must be aware of the risk to pedestrians in the pit area (which extends to the track/pit gate entrance) and also officials/photographers on the track and infield. The speed limit in the pits is 5 MPH at all times. During a race, If rejoining the track after an incident, utmost care must be exercised to safeguard any one on the infield. Speeding in the pits or excessive speed/dangerous driving on the infield, doughnuts etc, will be dealt with robustly by officials. The driver must leave the track at the regulation 5 MPH and be very aware of spectators and race officials.

The driver is fully responsible for his own conduct and also that of the members of his team, his family and his friends and anyone connected with his racing. No passengers are allowed to ride in or on Outlaw Stock Cars, unless they are involved in official parades, victory laps, for applause from spectators or after specific direction from the meeting director or clerk of the course.

# Appendix A



# Appendix B



# Outlaws: Conduct and Behaviour.

1. Drivers are responsible for their own conduct as well as the conduct of their mechanics, friends, family and all people at the meeting connected with the driver in any way. Drivers and mechanics/helpers are also reminded that when driving in the pits or to and from the track, they are driving in a public place and have a 'Duty Of Care' towards members of the public and fellow competitors and their property.
2. No driver, or anyone connected with him shall bring the sport into disrepute. This includes obscene language or obscene or lewd gestures.
3. No physical violence towards any person attending an Outlaw race meeting will be tolerated. No threats of violence towards any person attending an Outlaw race meeting will be tolerated. The Committee will take swift and robust disciplinary action towards reported offenders.
4. All drivers and officials must not consume alcohol, illegal drugs or substances at any time during an Outlaw race meeting.

## Disciplinary Penalties.

Speeding in the pits. (The speed limit in the pits is **5MPH**. This includes the road entering and leaving the track/between the track and the pits)

1<sup>st</sup> Offence will incur exclusion from competing at the remainder of the meeting.

2<sup>nd</sup> Offence will incur exclusion from the current and **following three** consecutive Outlaw race meetings.

3<sup>rd</sup> Offence will incur exclusion from the current and **following twelve** consecutive Outlaw race meetings.

**Verbal Abuse to other drivers or members of the public.**

1<sup>st</sup> Offence will incur a recorded verbal warning.

2<sup>nd</sup> Offence will incur exclusion from competing for the remainder of the meeting.

3<sup>rd</sup> Offence will incur exclusion from competing in the remainder of the meeting and the **following three** Outlaw race meetings.

Subsequent offences will incur **additional exclusions** from Outlaw race meetings.

**Verbal Abuse to Race day officials / helpers.**

1<sup>st</sup> Offence will incur exclusion from competing at the remainder of the meeting.

2<sup>nd</sup> Offence will incur exclusion from the current and **following three** consecutive Outlaw race meetings.

3<sup>rd</sup> Offence will incur exclusion from the current and **following twelve** consecutive Outlaw race meetings.

**Physical Abuse to Race day officials / helpers.**

1<sup>st</sup> Offence will incur exclusion from competing at the remainder of the meeting and **following seven** consecutive Outlaw race meetings.

2<sup>nd</sup> Offence will incur exclusion from the current and following **twenty one** consecutive Outlaw race meetings.

3<sup>rd</sup> Offence will incur **permanent exclusion** from Outlaw race meetings.

**Deliberate ‘fencing’ or deliberate ‘ramming’ of a stationary car.**

1<sup>st</sup> Offence will incur exclusion from competing at the remainder of the meeting and **seven consecutive** Outlaw race meetings.

2<sup>nd</sup> Offence will incur exclusion from the current and following **twenty one consecutive** Outlaw race meetings.

3<sup>rd</sup> Offence will incur **permanent exclusion** from Outlaw race meetings.

**Deliberate fencing/ramming followed by Physical abuse will count as two offences.**