

B1.0 Group Cadet

B1.1 Class Formula Cadet

Affiliation MSA

B1.2 Introduction. Starter class from 8 years of age with maximum retail prices for basic chassis and engine. Chassis, brakes and engine are homologated with the MSA. Details of homologation requirements are available from the MSA.

B1.3 Chassis. MSA homologated Cadet chassis only. The chassis must remain as homologated in all respects and may only be subject to MSA approved modifications for safety reasons. A chassis manufacturer will be permitted to homologate one chassis model for any three year period and homologations will last for a total of three successive periods (nine years). The current homologation period for chassis and brakes commenced 1.1.2014; the next period will commence 1.1.2017. A full list of current homologated chassis is included in Appendix 1.

B1.3.1 Modifications. The only additions permitted, along with modifications solely concerned with their fitment are: Seats, Nassau Panels, Front Fairing and Ballast to achieve the required weight or for repair purposes. Any non-homologated part, except as stated above, may not be added. Any additional or alternative welded on components not shown on the MSA chassis homologation are not permitted.

B1.3.2 Prohibited Materials. The following materials are specifically prohibited: Kevlar, carbon fibre (except for seats and floor tray), magnesium and titanium.

B1.3.3 Dimensions.

Wheelbase: 900mm ± 5mm

Overall Length: 1700mm (max.)

Overall Width: Min: 2/3 wheelbase

Max: 1200mm

Tubing: 28mm ±0.7mm

Steering: Camber/caster adjustment is permitted by means of a single, solid eccentric on the top face of each yoke. It is permissible to use up to 2 fixing screws per adjuster to maintain its position. The offset of the king pin from its standard position must not exceed 2mm therefore the diameter of the hole in the yoke may not exceed a size 4mm greater than the king pin.

B1.3.4 Floor Tray. There must be a rigid, flat floor from the seat to the front and side chassis members, secured to them so as to prevent the driver's feet from sliding off. The rear-most point of the floor tray must not project beyond the middle of the chassis cross rail located under the front of the seat. Any perforation of the floor other than for the attachment of ballast and other applicable accessories must be a production feature and be homologated as such. If perforated, the holes must not have a diameter exceeding 10mm.

B1.3.5 Bodywork and Bumpers. All Cadet karts must be fitted with bumpers and bodywork providing front, rear and side protection, as detailed in the regulations below and in Drawing Number 6 in Section U of the MSA Yearbook. CSAI homologated Minikart bodywork and bumpers may also be used, with the exception of the Rear Protection System, in lieu of regulations 1.3.6, 1.3.8-1.3.11 as relevant and provided that they comply fully with their homologation. An MSA-registered Rear Protection System may be used in lieu of a rear bumper (1.3.7), an up-to-date list of MSA-registered RPS can be found at www.msauk.org/karttech.

B1.3.6 Front Bumper. Must comply with U17.2.1-17.2.3 and the following:

- Have the four attachment points welded to the chassis-frame. For 2011 and later homologated chassis, these points must be as homologated.
- Have the lower and upper tubes joined by a minimum of one aluminium or steel connecting upright. This requirement does not include over centre clips.

- The lower bar must be constructed from magnetic steel tubing with minimum outside diameter of 18mm and a minimum wall thickness of 1.4mm and comprise a D-shape extension to the chassis-frame. It must be a minimum width of 250mm, and be 80mm ± 30mm above the ground with the kart in dry configuration.
- The upper bar must be constructed from magnetic steel tubing with minimum outside diameter of 15mm and a minimum wall thickness of 1.4mm. It must be a minimum width of 300mm, and be 200mm ± 50mm above the ground with the kart in dry configuration.

B1.3.7 Rear Bumper. Must comply with U17.8.4-17.8.8, and the following:

- Consist of two horizontal tubes. The upper having outer extension forming a closed loop, with two link tubes to the chassis anchorage points (as per Drawing 5, Diagram 2 in Appendix 1 of Section U) at least 450mm apart at any point. The radius of the outer extensions is free but it should not be less than 2.5 times the tube outside diameter.
- Have the upper bar and outer loops constructed from magnetic steel tubing with a minimum outside diameter of 18mm and a minimum wall thickness of 1.4mm.
- Have the lower bar constructed from magnetic steel tubing with a minimum outside diameter of 15mm and a minimum wall thickness of 1.4mm.
- Have the upper tube and uppermost extension element 225mm ± 25mm above the ground in dry configuration.
- Have the lower tube connected between the two uprights and a maximum height of 100mm above the ground in dry configuration and a minimum height level with the centreline of the chassis rail.
- Have the fixings secured at all times.

B1.3.8 Side Bumpers. The side bumpers must (please note U17.9 does not apply):

- Comprise a minimum of a single tube constructed from magnetic steel tubing with minimum outside diameter of 18mm and a minimum wall thickness of 1.4mm (minimum diameter of 20mm recommended).
- Be securely attached to chassis by a minimum of two points on each side of the chassis.
- Allow for the attachment of the mandatory side pods.
- For pre-2011 homologated chassis, where parallel side bumper mounting points are used, have these points a minimum of 375mm apart (measured at the centres). For 2011 and later homologated chassis, these points must be as homologated.
- Side bumpers must be compatible with existing bodywork and include side support.

B1.3.9 Side Pods. Must comply with U17.10 and the following:

- Include on the outer side a vertical surface with a minimum height of 70mm and a minimum length of 250mm located immediately above the ground clearance.
- Not include holes or cuttings except those necessary for their attachment and those in the inside and top plastic face for fitments (maximum M8 diameter). A hole may also be drilled for starter access, even if not in use.
- Not cover any part of the driver seated in their normal driving position.
- Not be designed to hold back water, gravel or any other substance.
- Have a clearance of between 25mm and 60mm above the ground in dry configuration (see Section U, Drawing 6).

B1.3.10 Front Fairing. Must comply with U17.5.1-17.5.3 and the following:

- Have a width of 850mm ± 150mm.
- Have a front overhang of 500mm maximum.
- Have a clearance of between 25mm and 60mm above the ground in dry configuration (see Section U, Drawing 6).
- Comprise on its front face a centrally located vertical surface minimum 250mm x 70mm.

B1.3.11 Front (Nassau) Panel. Must comply with U17.6.1, 17.6.2, 17.6.4, 17.6.5, and the following:

- Have a maximum width of 300mm.
- Be fixed behind the front bumper and must not protrude past the front face of the front fairing.

B1.3.12 Torsion Bars. Karts homologated with rear torsion bars must be raced with the bars in place and locked at all times. Front and side torsion bars are not permitted.

B1.3.13 Seat. Seat is free. Additional bolt on seat stays/mountings are permitted to a maximum of one per side, position is free. Bolt fixings must be used at each end of the seat stays.

B1.3.14 Eligibility. The complete chassis in its homologated form, with accessories and equipment as homologated and the engine as supplied by the manufacturer (or importer where applicable) are the only combination which will be allowed to race. The registered manufacturer may apply for changes to accessories, such as brakes, on the grounds of safety. Such changes will only be acceptable with the written approval of the MSA.

B1.4 Engine. See class specific regulations below.

B1.4.1 Engine Modifications. The use of a single in-line fuel filter is permitted.

B1.4.2 Performance Restrictions. MSA reserves the right at any time to vary any performance restriction in any Cadet Class.

B1.5 Transmission. Direct from the engine to the axle via a single length of chain. All methods of chain oiling and greasing while the kart is in motion are forbidden. A guard must be fitted covering the transmission in compliance with MSA Yearbook regulations (see U18.8.4 and U18.8.5).

B1.5.1 Axle. A solid, magnetic parallel bar of 25mm diameter. Split quick release bearing mountings are not permitted.

B1.5.2 Sprockets. Rear sprockets of 219 pitch. Size is free.

B1.6 Brakes. Mechanical or hydraulic operation, solid disc, operating on the rear axle only. Interruptions on the friction surface (drilling, slots etc.) are permitted on homologated systems only and must be specified on the homologation form. Vented discs are not permitted. The brake linkage must be duplicated. As from 2004 all homologated chassis must use an MSA homologated brake system. Changes may be made to the brake homologation on safety grounds with the written agreement of the MSA.

B1.7 Wheels. Wheels may be of two piece or mono aluminium construction, i.e. spun aluminium, diecast aluminium or sandcast aluminium. Hubs may be separate or integral. In accordance with U16.8.6, any hub with an overall length (excluding wheel studs) of less than 60mm must not overhang the ends of the rear axle, measurement to be taken from the wheel-to-hub mating surface.

B1.7.1 Tyres.

Dry – 'Dunlop SL3' Front 10 x 3.6 x 5, Rear 11 x 5 x 5. RAC moulded on the side wall. Barcoded.

Wet – 'Dunlop KT3' Front 10 x 3.6 x 5, Rear 11 x 4.5 x 5. RAC moulded on the side wall. Barcoded.

B1.8 General. The practice of lifting karts on the dummy grid or start line while the engine is running is prohibited.

B1.8.1 Retail Prices. All prices will be subject to an agreed yearly increase as determined by the MSA Kart Technical Sub-Committee. The retail price of the new assembled kart chassis as homologated, including brake, chain guard, sprocket carrier, axle, sprocket, tank, seat and wheels, but excluding tyres and fairings must not exceed £1,768.50 + VAT. The retail price of a new bare (painted) chassis-frame must not exceed £750 + VAT.

B1.8.2 Weight. See class specific regulations below.

B1.8.3 Number Plates. See class specific regulations below.

B1.8.4 Age. From the 8th birthday to the 31st December of the year of the 13th birthday (see U15.1).

B2.0 IAME GAZELLE UK SPECIFIC REGULATIONS

Affiliation MSA

B2.1 Engine. IAME Parilla Gazelle 60cc U.K. two-stroke engine equipped with recoil starter, ignition, centrifugal clutch, carburettor, inlet silencer and exhaust system. The power unit, as raced must conform in all aspects with the official MSA homologation fiche and must bear the relevant official IAME markings as shown in the MSA homologation fiche. The machining of ANY surface is strictly prohibited. Compliance with the MSA homologation fiche may be checked at any time during an event, with the technical checking tools supplied by IAME. No addition of, or other change of material is permitted. No modification or tuning for whatever purpose is allowed, except for that listed in the following regulations, or where expressly permitted by the MSA. Where specific dimensions are not given for the engine and its supplied accessories in the MSA homologation fiche, the dimensions will be checked against a control engine held by the MSA. Procedures for taking measurements and details of measuring gauges are defined in the 'MSA Measurement Guidelines' document available from the MSA on request. Any engine used must have its individual identification number registered with John Mills Engineering Ltd (JME).

B2.1.1 Engine Replacement Parts. The only replacement parts allowed are those supplied by IAME and listed on their parts list for the MSA homologated engine. Replacement parts must carry the manufacturers part number and/or marking where applicable.

B2.1.2 Spark Plug. The only spark plugs permitted are shown below; they must be unmodified and as supplied by the manufacturer, with sealing washer in place unless a temperature sensor is fitted. Permitted spark plugs:

NGK: B8EG, B9EG, B10EG, BR8EG, BR9EG, BR10EG, BR8EIX, BR9EIX, BR10EIX

DENSO: IW24, IW27, IW29, IW31

B2.1.3 Bearings. Main bearings part number 6204 C4 must be unmodified, complete with 8 steel balls and plastic cage. Only SKF or ORS can be used.

B2.1.4 Engine Lubrication. The only oils permitted are those specified in the current CIK list of homologated lubricants. The current list can be found on the CIK-FIA website at www.cikfia.com.

B2.1.5 Engine Management. Engine management equipment/systems are prohibited.

B2.1.6 Engine Sealing. All engines will remain unsealed in their normal use. However, an MSA licensed scrutineer appointed to the meeting may reserve the right to seal any engine at anytime during an event for further inspection at a later date or at their convenience. Each engine is supplied with a service log and identification card.

B2.1.7 Engine Modifications. The engine must be raced in standard form as manufactured and supplied by IAME unless otherwise stated. Filing, grinding, polishing, surface treating, machining, adding or removal of material or lightening of any component, including for repair purposes, is not permitted unless otherwise stated in these regulations or unless expressly permitted by the MSA.

The following minor repairs/modifications/additions are permitted:

- (i) Repair of damaged threads in the crankcase and/or cylinder with helicoils or timeserts.
- (ii) A wet-box or splash-guard attached to the IAME inlet silencer, provided that it in no way modifies the shape or size of the inlet trumpet or creates a ram effect. The IAME inlet silencer cannot be modified to aid in the attachment of a wet-box or splash-guard and the attachment must be of a non-permanent type, e.g. tape or cable ties.
- (iii) Decals applied on the engine side covers (part no: A-61880-C / A-61881-C) and on the inlet silencer.
- (iv) Modification of the chain guard upper edge to prevent fouling on the chain.
- (v) Use of throttle linkage (part no: 12-1219) with slot.
- (vi) Use of optional O-ring seal (part no: A-60565) and needle cage (part no: B-55598) for the clutch assembly.
- (vii) The addition of protective material to the HT-lead.

(viii) Use of a maximum of two base gaskets (part nos: EBP-85045, EBP-85046 or EBP-85046-A) and/or a maximum of two head shims (part nos: A-61047 or A-61048), in any combination.

The following repairs/modifications/additions are specifically not permitted:

- (i) Painting of the cylinder head or cylinder.
- (ii) Repair of the cylinder head spark plug thread.
- (iii) Repair of any of the fins, however the engine can be used with any fins in their broken form.

B2.1.8 Engine Eligibility. The checking of the combustion chamber volume must be carried out as described in the MSA homologation fiche with TQF oil and using a digital burette. The checking of the squish must be done along the centreline axis of the gudgeon pin, at the smallest point, a maximum of three times.

B2.1.9 Engine Price. The retail price of the engine, when new, including the carburettor, ignition, clutch, engine sprocket and complete exhaust system when sold in the U.K. will be £870 + VAT. The IAME Parilla Gazelle 60cc U.K. engine has a manufacturer's undertaking to be available until the year 2018.

B2.2 Exhaust. Exhaust with part no. A-61715 must be used. The exhaust system and silencer must not be modified in any way and must comply at all times with the MSA homologation fiche. The use of a jubilee clip to secure the end silencer screws is permitted. The use of any coating or plating is not permitted.

B2.2.1 Exhaust Restrictor. The exhaust flange restrictor as defined in the MSA homologation fiche must be in place at all times. The restrictor must be as manufactured by IAME and supplied by JME and must comply with the MSA homologation fiche, no modifications are permitted. One single exhaust restrictor gasket (part no: A-60360) must be used. The use of any additional gasket is prohibited. All exhaust gases must pass through the restrictor. As per B1.4.2, the MSA reserves the right to amend the maximum diameter of the restrictor orifice during the year, with a minimum notice period of 4 weeks.

B2.3 Carburettor. Tillotson HL 394A, laser marked 'IAME'. The carburettor must remain unmodified and conform in all aspects to the official MSA homologation fiche. Two inlet gaskets (part no: A-61822), one on each side of the thermal block, must be used. The use of any additional gasket is prohibited. The jet protector plate (part no: A-10913-P) must be correctly mounted at all times, as shown in the MSA homologation fiche. Any parts fitted must be original parts as shown on the spare parts list in the MSA homologation fiche, and must remain unmodified. The only gasket set permitted is the red type as supplied as new (part no: DG6 HL). The paddle spring is free but must be the original Tillotson part and remain unmodified.

B2.3.1 Inlet Silencer. The inlet silencer (part no: A-61742) must be used unmodified as supplied by IAME for the Parilla Gazelle 60cc U.K. engine. The use of a gauze filter on the inlet trumpet is permitted.

B2.4 Transmission. Direct from the engine to the rear axle via a single length of chain. The clutch must be as supplied by IAME for the Parilla Gazelle 60cc U.K. engine and must comply at all times with the MSA homologation fiche. The internal running surface of the clutch must remain dry and free of grease or lubricant or any additional substance.

B2.5 Weight. Minimum 103kg, including the driver,

B2.6 Plates. Yellow with black numbers (see U17.27). The numbers must be of the 'Classic' type as described in U17.27.3.
