

# Kart Technical Exception Class Approval

Ref: **KTE-2018-358**

The MSA can confirm that John Mills Engineering Ltd. has been granted permission to run the IAME X30 Mini X Class in the UK. Class Regulations will be reviewed by the MSA on a yearly basis.

## Details:

Class Regulations as attached.

**Date Approved:** 02 February 2018

MSA Stamp & Signature:



**Joe Hickerton**  
MSA Technical Manager

- 1.0 Group Junior – Non-Gearbox**
- 1.1 Class IAME X30 Mini X**
- Affiliation Commercial: John Mills Engineering Ltd**

**1.2 Introduction.** This class endeavours to provide performance approaching that of the comparable current non-gearbox classes in the defined category, combined with low running costs and low noise levels, the engine can be changed from Mini to Junior/Senior by the way of a simple exhaust restrictor and different carburettor. It is expected that the class will continue to evolve and the promoters reserve the right, with the agreement of the MSA, to alter the technical regulations to ensure safety of drivers, fairness of competition, economy and the wishes of competitors and changes of specifications from IAME agreed by the MSA. Enquiries to John Mills Engineering Ltd PF International Kart Circuit, Brandon, Grantham, Lincolnshire NG32 2AY Tel:01636 626424 E: sales@iame.co.uk.

**1.3 Chassis.** Any chassis conforming to MSA Yearbook regulations. Must use a currently CIK-homologated Rear Protection System.

**1.4 Engine.** The only engine permitted in this class is the IAME X30. The Mini X30 adheres to the main IAME X30 fiche plus the Mini X supplement. Two-stroke engine equipped with electric starter, 16,000 rpm 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 under the control of the MSA. Any engine used must have its individual identification number registered with John Mills Engineering Ltd (JME).

**1.4.1 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 manufacturer's part number and/or marking where applicable.

**1.4.2 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, R6252K-10, R6252K-105, R6254E-10, R6254E-105.

**1.4.3 Bearings.** All the bearings part numbers X30125396A, IMB-20100 and X30125746A must be unmodified, complete with steel ball, plastic cage and remain the same type as supplied by the manufacturer.

**1.4.4 Engine lubrication.** The only oils permitted are those specified in the current CIK list of homologated lubricants, plus Shell Advance Racing M. The current list can be found on the CIK-FIA website at [www.cikfia.com](http://www.cikfia.com).

**1.4.5 Engine management.** Engine management equipment/systems are prohibited.

**1.4.6 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 any time during an event for further inspection at a later date or at their convenience.

**1.4.7 Modifications.** Neither the engine nor any of its ancillaries may be modified in any way. "Modified" is defined as any change in form, content or function that represents a condition of difference from that originally designed. This is to include the addition and/or omission of parts and/or material from the engine package assembly unless specifically allowed within these regulations or the official MSA fiche. The adjustment of elements specifically designed for that purpose shall not be classified as 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 as supplied by IAME (part no. A-61700) may be attached to the inlet silencer; it may be adapted provided that it in no way modifies the shape or size of the inlet trumpet or creates a ram effect. The 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 and on the inlet silencer.
- (iv) Use of optional O-ring seal (part no. A-60565) and needle cage (part no.: B-55598) for the clutch assembly.
- (v) The addition of protective material to the HT-lead, and the HT-lead may be shortened, **however cutting and re-joining of the lead is not permitted.**
- (vi) Use of a maximum of two base gaskets (part no. EBP-125045, EBP-125046 or EBP-125047) and in any combination.
- (vii) Honing of the cylinder
- (viii) The exhaust manifold may be repaired but must comply at all times with the MSA homologation fiche.
- (ix) Use of a blanket on the front of the cylinder solely to assist in the prevention of freezing.
- (x) Moderate repair to the crankcase due to component failure, this excludes welding or addition of any other material.

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 cylinder, in any form.

**1.4.8 Ignition unit.** All parts must be un-modified original digital Selettra ignition. Scrutineers have at any time during the race meeting the right to request part or full controlled ignition system to be fitted. Only CDI box marked 'C' (16,000) is permitted. The marking on the electronic box 'C' is mandatory and must be clearly visible without disassembling the CDI box. The battery must be fixed to the chassis and connected to the ignition system at all times. **The rotor location key must be unmodified and have minimum thickness of 2.43mm.**

**1.4.9 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. The angular reading of the port is to be carried out by inserting a 0.2 x 5mm wide feeler gauge. For damaged ports the angular reading is max. 125° side transfer, 126° front transfer and 176.5° exhaust port, using a 1mm pin gauge at no more than 4 points in the port.

**1.5 Exhaust.** Exhaust with part no. X30125718 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. Length of the flex pipe between the manifold and system is free but must be a parallel tube inside, painting black on the outside is allowed, however the use of any other coating or plating is not permitted. Removal of the welded tab is permitted to allow fitting of the end can.

**1.5.1 Exhaust end can.** This part is mandatory and must be fitted at all times; it must not be modified in anyway and must comply at all times with the MSA homologation fiche. The use of an additional part to secure the fixing screws is permitted provided it in no way modifies the exhaust system.

**1.5.2 Exhaust restrictor.** The exhaust 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. B-75360) must be used. The use of any additional gasket is prohibited. All exhaust gases must pass through the restrictor. **The minimum thickness for the exhaust manifold mounting flange gasket plane is 6mm.**

**1.6 Carburettor.** Tillotson HW-34A laser marked 'IAME'. The carburettor must remain unmodified and conform in all aspects to the official MSA homologation fiche. One inlet gasket (part no. 10360-A)

must be used between the carburettor and reed block. The use of any additional gasket is prohibited. 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. DG3-HW). The paddle spring is free but must be the original part and remain unmodified. The only permitted needle valve is part no. 233-721P.

**1.6.1 Reed block.** Both the reed block and cover must remain strictly original. Either fiberglass or carbon original IAME marked petals may be fitted, but they may only be used in matching pairs.

**1.6.2 Inlet silencer.** The inlet silencer (part no. 10743-C1) with 22mm trumpets must be used and must remain unmodified as supplied by IAME for the IAME X30 engine. The rubber manifold with air filter is mandatory and must conform to the homologation paper. The use of a gauze filter on the inlet trumpet is permitted.

**1.7 Cooling system.** The radiator must be fitted to the left-hand side of the kart, using standard hoses and connectors. The water pump – plastic or aluminium – must be mounted to the chassis driven via pulley from the rear axle. **The use of the large size radiator as supplied by IAME is permitted.**

The radiator, pump, axle pulley, **radiator support brackets** and thermostat must be as supplied by IAME.

**1.8 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 X30 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. Only IAME original Z10 or Z11 or Z12 sprockets can be used.

**1.9 Brakes.** Hydraulic disc brake operating on rear wheels only.

**1.10 Tyres.** Dry: KOMET K1H 10 x 4.60-5 fronts. 11 x 7.10-5 rear  
Tyres with rounded corner barcodes only are permitted.  
Wet: KOMET K1W 10 x 4.20-5 front. 11 x 6.00-5 rear

Tyres must be fitted with the correct direction of rotation.

**Only tyres with rounded corner barcodes and prefix "K" are permitted.**

**1.11 Weight.** Minimum of 136kg including driver at all times. The minimum driver weight as per U17.29.6 is 39kg.

**1.12 Number plates.** White with black numbers **U17.27.1-4** apply.

**1.13 Age.** From year of 12th birthday to 31st December in the year of 15th birthday.

**1.14 General.** An ignition kill switch must be fitted and must be identified with a blue triangle to assist marshals in the event of an incident.

**1.15 Fasteners and attachments.** The use of alternative fasteners, washers, hose clips, fuel line is allowed unless otherwise specified. The use of an additional earth strap is allowed. The use of additional air box support brackets and/or radiator support brackets is allowed, providing the fitting of these does not necessitate modification of the original components.

**1.16 Data logging.** Data logging is permitted, data logging systems with or without memory may be used. Global Navigation Satellite System reception is permitted. It is only permitted to take readings of engine rpm, engine water temperature, speed of 1 wheel, an X/Y accelerometer, lap times and split lap times. The rpm, may only be recorded via a sensor on the HT-lead to sense spark plug pulses. The HT-lead must remain a single length from ignition coil to spark plug cap. The fitting of these sensors is only permitted providing there is no modification to the original engine components.