



MALAYSIAN KARTING FESTIVAL 2021

IAME SERIES MALAYSIA 2021 TECHNICAL REGULATIONS

To be read together with the Supplementary Regulations

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TECHNICAL REGULATIONS

A	GENERAL REQUIREMENTS	
1.	Front Fairing Mounting Kit	<p>The use of a homologated front fairing and mounting kit as per the bodywork homologation period 2015 – 2020 is mandatory.</p> <p>1.1 Clearance Between Minimum</p> <p>(i) Measurement between the top and bottom front bumper tubes, between the mounting brackets: 60 mm</p> <p>(ii) Measurement between the front bumper (upper and lower tubes) and the front fairing. (CIK Technical Drawing No. 2c): 27 mm</p> <p>1.2 From Qualifying until the Final, each kart must enter the Start Servicing Park with the front fairing fully detached. The Mechanic or the Driver himself must mount the front fairing in the Start Servicing Park under the supervision of a Scrutineer.</p> <p>1.3 During each Race it is only allowed to restore the front fairing to the correct position in the Repair Area.</p> <p>1.4 The black flag with an orange disc will not be shown to Drivers with front fairings in an incorrect position.</p>
2.	Petrol and Lubricants	<p>2.1 Two - stroke lubricant. Any brand permitted.</p> <p>2.1 C.I.K. approved fuel or commercial fuel on general sale. By commercial fuel it is meant a motor fuel produced by an oil company and currently distributed at roadside refilling stations throughout the country, on sale commercially and including no other additives. Any infringement of this rule will entail disqualification from the event. The Organisers may specify in the Additional Supplementary Regulations a particular fuel station to purchase all fuel and fuel testing may be conducted using fuel from that station as the base.</p> <p>2.2 <u>Fuel Test procedure</u></p> <p>(a) <u>Digatron DT- 47FT Fuel Meter Test</u></p> <p>(i) The Digatron meter is set to -75 in Cyclohexane (C₆H₁₂).</p> <p>(ii) Test is conducted by immersing the test probe into a sample removed from the competitor's fuel tank.</p> <p>(iii) The result of the test should be zero or a –ve number. Any fuel tested showing any number above 0, (meaning a positive number) will be considered illegal.</p> <p>(b) <u>Ceric Nitrate Reagent Testing</u></p> <p>A fuel sample is taken and ceric nitrate reagent added and the mixture inverted a few times.</p> <p>If the reagent after settling down changes to orange or red, the fuel sample contains alcohol and is considered illegal.</p> <p>Any competitor found to be using illegal fuel and failing either of the above tests will be disqualified from the event and his/her results deleted from the records and no championship points will be awarded.</p>
3.	Scrutineering	<p>All karts shall conform to the C.I.K. Technical Regulations. The eligibility of all karts taking part in the competition will be checked by the duly appointed Scrutineers who shall not be required to give any reason for a decision they may take, but may at their absolute discretion require a driver to comply with their request. Drivers electing not to do so will be excluded from the competition. Drivers must present themselves and their kart, together with protective clothing, equipment and tyres for scrutineering at the scheduled time.</p>
	Protective Clothing	<p>Protective clothing must be CIK approved and must be produced at the time of scrutineering.</p> <p>(i) A helmet with an efficient and unbreakable protection for the eyes. For all classes, helmets must comply with the following prescriptions:</p> <ul style="list-style-type: none"> - Snell Foundation SA2015, SA2010, SAH 2010, K2015, K2010 - FIA-CMS 2016, FIA-CMS 2007, CMR2016, CMR2007 (for under 15 years old) - FIA 8859-2015, 8860-2010, 8860-2010, 8860-2004, 8860-2018-ABP <p>The weight of helmets may be checked at any time during an event and must not be more than 1,300g for Juniors / Cadets. It must be noted that certain types of helmets must not be painted or carry adhesive material. In accordance with Appendix L to the International Sporting Code (Chapter III, Article 1.2), any addition of devices, whether aerodynamic or other, to helmets is forbidden if they have not been homologated with the helmet concerned.</p> <p>After scrutineering, the helmets will have an OK sticker pasted on them. Any driver found using helmets that were not scrutineered will be disqualified.</p> <p>(ii) A pair of gloves covering the hands completely.</p> <p>(iii) Fabric overalls must have a "Level 2" homologation granted by the CIK/FIA bearing in a visible way the CIK/FIA homologation number. They must cover the whole body, legs and arms included. Overalls remain valid 5 years after their date of manufacturing and the homologation (i.e. the period during which they can be produced) is valid for 5 years.</p>

		<p>(iv) Leather overalls complying with the standards defined by the FIM are authorised.</p> <p>(v) Boots must cover and protect the ankles.</p> <p>All Formula Cadet drivers MUST WEAR a proper neck brace. This is compulsory otherwise he/she will not be permitted to take part in the event.</p>	
	Chassis & Engines	<p>Competitors will be allowed to scrutineer a maximum of 2 engines and 1 chassis</p> <p>Tyres: 4 front and 4 rear slicks. Minimum of 2 front and 2 rear wets to a maximum of 4 front and 4 rears is permitted.</p> <p>The driver must submit all sets of tyres during Scrutineering and only these tyres can be used throughout the competition. All tyres must be inspected and marked by the Scrutineers before use.</p> <p>(a) Only 2 engines are allowed to be used throughout the whole meeting. Both engines must be scrutineered and recorded in the Scrutineering sheet.</p> <p>(b) Bodywork in compliance with CIK Art 34 is mandatory. There will be no noise tests but no open exhausts will be allowed. Changing of chassis, engine and engine/chassis unit is forbidden between the start and finish of any race. Any karts involved in an accident at any time must be presented to the Scrutineers for rescrutineering before returning to the circuit. The Scrutineers reserve the right to impound any kart for rescrutineering after a race to verify compliance with the regulations</p> <p>(c) Drivers are allowed only 1 chassis. No changing of chassis will be allowed throughout the meeting. If a chassis is damaged and certified unfit for use by the Chief Scrutineer, a replacement of the same make may be permitted only when authorised by the Stewards.</p>	
	Rear wheel Protection	<p>Please note that CIK Technical Regulation 2.5.3 – “Rear wheel protection” will be implemented in its entirety. Please read it carefully.</p> <p><i>“...The rear protection must be made of hollow plastic moulded in one piece and must not present any danger as regards safety. Furthermore, the structure must be moulded plastic without foam filling, and the wall thickness must be constant in order to provide uniform strength...”</i></p>	
	Chain Guard	<p>Please note that CIK Technical Regulation 2.9 “Chain Guard / Driving Belt” will also be implemented.</p> <p><i>“In all categories without a gearbox, it is compulsory and must be an effective protection over the top and both sides of the exposed chain and sprockets and extend to at least the lower plane of the rear axle.”</i></p>	
	Weighing	<p>(a) Race officials reserve the right to conduct random checks on all engines, chassis, tyres, helmets and any other items deemed necessary at any time during the course of the meeting.</p> <p>All karts and drivers will be weighed during Scrutineering and after Time Trials, all Heats, and the Final. Karts that do not cross the Finish Line at the end of a race may not be required to be weighed.</p> <p>(b) Only Scrutineers and Officials are permitted in the weighing area. No mechanics are permitted anywhere near their karts until after weighing.</p> <p>(c) No solid, liquid or gaseous matter or substance is permitted to be added or given to a kart or driver from the time of the dropping of the chequered flag and the weighing of the kart and driver.</p> <p>(d) No kart or driver is permitted to leave the weighing area without the authorisation of the Chief Scrutineer.</p> <p>(e) It is authorised to adjust the mass of the kart with one or several ballast weights subject to their being solid blocks, fixed to the chassis or to the seat by two bolts for each weight with a minimum diameter of 6 mm.</p> <p>(f) Any infringement of these provisions relating to the weighing procedures may entail the exclusion of the driver and kart concerned.</p>	
4.	Race Numbers	<p>Number plates shall be of plastic and rounded corners with 22 cm. sides. Numbers shall be at least 15 cm. high and 2 cm. wide. The number plates must be fitted to the front and rear and must carry NO advertising except that assigned by the Organiser. Number plates that are part of the bodywork must be rimmed by a 10 mm black line.</p>	
B	ENGINES		
1.	General Regulations	<p>1.1 Category Engine Homologation Forms: Cadet: 364D IAME X30 Water Swift 60cc with Tillotson HW-31A Junior: 254U IAME X30 125cc with Tillotson HW-27A Senior: 254U IAME X30 125cc with Tillotson HW-27A Master: 254U IAME X30 125cc with Tillotson HW-27A</p> <p>1.2 The Entrant / Driver is liable for the conformity of his equipment.</p> <p>1.3 Engines must be provided with their original serial number.</p> <p>1.4 Engines must be original and strictly in compliance with the manufacturer’s technical form (technical features, sizes, weights, diagrams with the tolerances prescribed by the manufacturer).</p> <p>1.5 The relevant homologation form</p> <p>1.6 Tuning, improvement, modification, installation, adjunction, polishing, sandblasting, trimming, adjustment, heat treatment, surface treatment, addition or removal of material, or action having as a consequence the alteration of a dimension, aspect, or control possibility, to or of the original engine or accessories is forbidden unless expressly authorised.</p> <p>1.7 Engines and parts thereof have to be installed in their original positions and functioning</p>	

		<p>according to their original design specifications.</p> <p>1.8 The tolerances reported on the engine homologation forms are necessary in comprising all machining, assembly and settling tolerances. Nevertheless, no intervention is allowed on the engine, regardless of whether the modified dimensions remain within prescribed tolerances.</p> <p>1.9 The maximum and minimum allowed values and volume of the combustion chamber shall be measured according to the CIK Technical Regulations.</p>
2.	Classification of Karts & Engines	
	2.1	Cadet
	(a)	<p><u>Chassis</u> Shall conform to the C.I.K. Technical Regulations except where stated below: The following are banned: Parts made from Kevlar, carbon fibre (other than seats), magnesand titanium.</p>
	(b)	<p><u>Wheelbase</u> Maximum 1010mm</p>
	(c)	<p><u>Transmission</u> Drive must be direct by means of a single length of chain from the clutch sprocket to the rear axle sprocket.</p> <p><u>Rear Axle</u> Solid or hollow, magnetic and parallel with a maximum diameter of 30 mm.</p>
	(d)	<p><u>Engine</u> IAME X30 Water Swift 60cc. with Tillotson HW31A carburettor. Diagrams and Volume Chart - As per homologation form.</p> <p>(i) <u>Cylinder Head</u> The cylinder head must be original. The spark plug body tightened on the cylinder head must not protrude from the upper part of the combustion chamber dome. The squish must be in compliance with the homologation form. The tin wire (minimum 50% tin) used for the squish measurement must have a 1.5mm diameter. Measurements must be taken with the engine in racing condition and at any time during the event. The original IAME gauge no. 10215 is the reference to measure the cylinder head profile conformity. The gauge shape must match with the dome profile, squish area and gasket plane.</p> <p>(iii) <u>Cylinder</u> The cylinder must be original. Only re-boring is allowed. In case of doubt, the shape and height of the transfers shall be compared to a cylinder from the sample engine. A diagram adjustment is allowed only by means of a cylinder gasket replacement. Only one cylinder gasket of 0.40mm +/- 0.05 thickness is admitted. Use without head gasket is not permitted. The original IAME gauge no: ATT-005 is the reference to measure the distance of the upper edge of the ports from the cylinder head plane.</p> <p>(iv) <u>Crankcase, Crankshaft, Con-rod, Crankpin</u> Parts must be original and without any modification. Only the original big end cage (IAME B-10431), original washers (IAME E-38436) and original small end cage (IAME A-60440) are allowed.</p> <p>(v) <u>Bearings</u> Only original crankshaft ball bearings (IAME p.n. 10400-D 6204 C4) are allowed. Ball-bearings with oblique contacts are forbidden. Only bearings with steel balls and rings are allowed. Ceramic is forbidden.</p> <p>(vi) <u>Piston, Ring and Pin</u> Strictly original without any modification and in compliance with the homologation form.</p> <p>(vii) <u>Carburettor</u> Only the Tillotson HW-31A carburettor (Venturi max. diam. 17.15mm) supplied together with the engine in its original configuration (same brand, same model, same reference) is permitted. Only the accessories supplied together with the original carburettor and represented on the homologation forms are allowed; needle valve spring is free. Carburettor positioning (i.e. with pump in upper or in lower position) is free. All carburettor spacers and gaskets are mandatory and must be in compliance and in the same order as indicated on the technical form. The inlet silencer must be original as supplied with the engine (same brand, same model, and same reference - IAME mod. MINI SWIFT with CSAI 01/SA/14 homologation) with max 22mm internal diameter intake tubes. Protective grids are optional. The rubber manifold with air filter connecting the inlet silencer to the carburettor is mandatory and must be installed and in compliance with the homologation form. Any injection and/or spraying system is forbidden.</p> <p>(viii) <u>Clutch</u> The engine is supplied with a dry centrifugal clutch system. Any modification or interference intended to extend the slipping of the clutch hub beyond the prescribed limit is forbidden. The centrifugal clutch must engage at max. 4,500 RPM and moving the kart with driver on board and in racing condition. The clutch must be fully engaged at max. 6,500 RPM under any conditions. This measurement can be checked with proper instruments. The driver is responsible for the wear status of the clutch padding material and cleaning of the friction parts. Proper operation of the clutch may be checked at any time during the event.</p>

	(k)	<u>License</u> Minimum of MAM Novice grade Licence only.
	2.2	Junior, Senior & Master
	(a)	<u>Chassis</u> Shall conform to the C.I.K. Technical Regulations except where stated below: The following are banned: Parts made from Kevlar, carbon fibre (other than seats), magnesand titanium.
	(b)	<u>Wheelbase</u> Maximum 1400 mm
	(c)	<u>Transmission</u> Drive must be direct by means of a single length of chain from the clutch sprocket to the rear axle sprocket. All methods of chain oiling or greasing while the kart is in motion are forbidden. A chain guard is compulsory and must cover the top of the engine sprocket, the chain and the axle sprocket up to the centre line of the rear axle. There must be sufficient side protection to prevent a finger from being caught between the chain and the engine sprocket.
	(d)	<u>Rear Axle</u> Solid or hollow, magnetic and parallel with a maximum diameter of 30 mm.
	(e)	<u>Engine</u> IAME X30 125 cc RL TaG – X30
	(i)	Diagrams and Volume Chart As per homologation form.
	(ii)	Cylinder Head The cylinder head must be original. The spark plug body tightened on the cylinder head must not protrude from the upper part of the combustion chamber dome. The squish must be in compliance with the homologation form. The tin wire (minimum 50% tin) used for the squish measurement must have a 1.5 mm diameter. Measurements must be taken with the engine in racing condition and at any time during the event. The original IAME gauge no. ATT – 025/ is the reference to measure the cylinder head profile conformity. The gauge shape must match with the dome profile, squish area and gasket plane.
	(iii)	Cylinder The cylinder must be original. Only re-boring is allowed. In case of doubt, the shape and height of the transfers shall be compared to a cylinder from the sample engine. A diagram adjustment is allowed only by means of a cylinder gasket replacement. Only one cylinder gasket of 0.40mm +/- 0.05 thickness is admitted. Use without head gasket is not permitted. The original IAME gauge no: ATT- 025/2 is the reference to measure the cylinder ports position. The original IAME gauge no: ATT- 035/1 is the reference for a visual check of the ports. <ul style="list-style-type: none"> • Starting from the serial n. M3521/B3059 the X30 engines are equipped with a marked cylinder, as shown on the homologation form. • Engines with serial numbers prior to M3521/B3059 can be equipped with the marked cylinder. • Engines with serial numbers subsequent to M3521/B3059 cannot be equipped with the non-marked older cylinder.
	(iv)	Crankcase, Crankshaft, Con-rod, Crankpin Parts must be original and without any modification. Only the original big end cage (X30125431), original washers (X300125436) and original small end cage (E - 10440) are allowed. The original IAME gauge ATT-035/3 is the reference to check the reed block housing plane. The original IAME gauge ATT-035/4 is the reference to check the distance between the indexing pins of the cylinder. The original IAME gauge ATT-035/5 is the reference to check the height of the cylinder base plane.
	(v)	Bearings Only original crankshaft ball bearings (6206 C3 or C4) and counter balancing shaft ball bearings (6202 C3 or C4 and 6005 C3 or C4) are allowed Ball-bearings with oblique contacts are forbidden. Only bearings with steel balls and rings are allowed. Ceramic is forbidden. Steel and plastic cages are allowed.
	(vi)	Piston, Ring and Pin Strictly original without any modification and in compliance with the homologation form. The IAME original gauge ATT-035/2 is the reference to check the piston head shape.
	(vii)	Reed Block Must be strictly original without modification. No gasket planes machining is allowed. Free screws. Only original reed valve cover without modification is allowed. Reed block/crankcase gasket thickness is 1mm (admitted tolerance +/- 0.3mm). Conveyor/reed block gasket thickness is 0.8mm (admitted tolerance +/- 0.3mm).
	(viii)	Reed Petals Only fibreglass (min. 0.3mm) or carbon fibre (min 0.24mm) original IAME marked reed petals are allowed. Mixing of fibreglass and carbon fibre petals is forbidden.
	(vix)	Carburettor Only the Tillotson HW-27A carburettor supplied together with the engine in its original configuration (same brand, same model, same reference) is admitted. Only the accessories supplied together with the original carburettor and represented on the homologation forms are allowed; needle valve spring is free.

		<p>Carburettor positioning (i.e. with pump in upper or in lower position) is free. Carburettor gasket thickness is 1 mm (admitted tolerance +/- 0.3mm). Only the new IAME X30 inlet silencer model will be allowed (SKU: X30125740) in dry conditions. In the event of a wet race, both the new IAME X30 inlet silencer (SKU: X30125740) and the IAME X30 inlet silencer (10743-C1) will be allowed. The inlet silencer must be original with max 22mm internal diameter intake tubes. Protective grids are optional. The rubber manifold with air filter connecting the inlet silencer to the carburettor is mandatory and must be installed and in compliance with the homologation form. Any injection and/or spraying system is forbidden. The original IAME gauge n. ATT-035/2 is the reference to check the carburettor inlet duct. The gauge shape must match with the inlet profile.</p> <p>(viii) Clutch The centrifugal clutch must engage at max. 4,000 RPM moving the kart with driver on board and in racing conditions. The clutch must be completely triggered at max. 6,000 RPM in any condition. This measurement can eventually be checked with proper instruments. The driver is responsible for the wear status of the clutch padding material and cleaning of the friction parts. Proper operation of the clutch might be checked at any time during the event or after each phase. The original IAME gauge ATT-047/4 is the reference to check the clutch drum. The tool must not enter into the clutch drum in a perpendicular position respective to the clutch drum axis.</p> <p>(ix) Ignition Only original Selettra Digital K or S ignition systems without modification are allowed. Only the electronic CDI box type C (16000 RPM) is allowed and must be fixed on the chassis or engine. The markings on the electronic box are compulsory and must be clearly visible without disassembly. Obscuring of the markings is forbidden. Modifications to the stator fixing, shape and thickness of the rotor key, and rotor and crankshaft slots are forbidden. The battery must be fixed to the chassis and connected to the ignition system at all times. The IAME original gauge ATT-035/7 is the reference to check the correct position of the phase reference marking on the rotor.</p> <p>(x) Spark plug Only the following NGK spark plugs, strictly original and without any modification, are allowed: B8EG, B9EG, B10EG BR8EG, BR9EG, BR10EG BR8EIX, BR9EIX, BR10EIX BR8ECMIX, BR9ECMIX, BR10ECMIX B8ES, B9ES, B10ES B8EGV, B9EGV, B10EGV The spark plug must be installed with its original gasket. The insulator must not extend beyond the spark plug body and the length of the Spark plug body itself must be max. 18.5 mm. (CIK technical regulations appendix 7). The spark plug cap must be original as delivered with the engine (IAME p.n. 10543 and 10544)</p> <p>(xi) Exhaust Only the original muffler and header as supplied with the engine are allowed and must be kept in compliance with the homologation form, therefore no modification in structure or dimensions is allowed. Only the Junior exhaust manifold is allowed, in compliance with the homologation form. Drilling and welding operations on the header are allowed only for the installation of a temperature probe. The complete sealing of the exhaust gas between the cylinder and the exhaust header must be guaranteed at all times. The control of the sealing of the exhaust gas can be performed at any time through occlusion of the outlet hole of the exhaust manifold, filling of the exhaust manifold with liquid through the exhaust port and checking for leaks. The proper sealing of the exhaust system is at Driver's responsibility. One original gasket only between cylinder and exhaust manifold is allowed, the use of the original exhaust spacer is allowed and not mandatory. In all cases the exhaust system must be in compliance with the phonometric measurement.</p> <p>(xii) Differential Reading Between Exhaust and Transfers Checks will be conducted as follows: Install the graduated disc or encoder onto the crankshaft. Insert the feeler gauge (wedge) 0.2 x 5mm at the centre of the exhaust port. Rotate the crankshaft clockwise (seen from clutch side) and take the piston ring in contact with the feeler gauge. Set the graduated disc or encoder to zero. Rotate the crankshaft counter clockwise to lower the piston until the transfer ports are open. Insert the feeler gauge into one of the transfer ports. Rotate the crankshaft clockwise and take the piston ring in contact with the feeler gauge. Check the disc or encoder reading. To be legal it must be minimum 24° and maximum 25°.</p> <p>(xix) Cooling The cooling system must be in its original configuration. Only one IAME original radiator (p.n. T-8000B or T-8001) is allowed. Only one simple water pump of any make is allowed. The number of radiator support brackets is not limited. Only simple or bypass IAME original thermostats are allowed and their use is optional. Only water with no additives is allowed for cooling. Radiator shields, either adhesive or mechanical are allowed but should not be removable when the kart is in motion. Water pump hoses are free. The belt can operate with or without the water pump pulley. Water pump pulley is free.</p> <p>(xx) Starting The engine is provided with an on-board electric starter. The original on-board starting</p>
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	<p>(xxi) system must be installed and properly connected with all components. Sprockets Only IAME original Z10, Z11, Z12 and Z13 sprockets are admitted.</p> <p>(f) <u>Brakes</u> Hydraulic operation on the rear wheels only using a single disc. The brake linkage must be duplicated.</p> <p>(g) <u>Tyres</u> <u>Dry:</u> Komet K2M Front: 4.6 x 10.0 – 5 Rear: 7.1 x 11.0 – 5 <u>Wet:</u> Komet K1W Front: 4.2 x 10.0 – 5 Rear: 6.0 x 11.0 – 5</p> <p>(h) <u>Weight</u> Minimum weight including the driver: Junior: 145 kg Senior: 158 kg Master: 168 kg</p> <p>(i) <u>Age Limit</u> Junior Between 12 years old 14 years old in the year 2021. Senior 14 years old and above in the year 2021 Master 30 years old and above in the year 2021</p> <p>(j) <u>Number Plates</u> Yellow plates with black numbers. Junior: 100 – 199 Senior: 200 – 299 Master: 300 – 399</p> <p>(k) <u>Licence</u> Minimum of MAM National grade Licence</p>
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Date Issued: 20th January 2021