



Round 1 – 23/09/16
Round 2 – 04/11/16
Round 3 – 02/12/16
Round 4 – 17/02/17
Round 5 – 24/03/17
Round 6 – 21/04/17

X30 CHALLENGE TECHNICAL REGULATIONS 2016/2017 VER 1.0

NAME OF EVENT: X30 Challenge
ORGANIZER: Ras Al Khaimah Kart Track (RAK TRACK)
PROMOTER: Emirates Karting
TITLE SPONSOR: Emirates Karting

TECHNICAL REGULATIONS PART 1 OF 2 (GENERAL) (ARTICLE 1-5)

The CIK-FIA Technical regulations applies for the X30 CHALLENGE. The English text is the authentic version. The Organizer of the series reserves the right to issue additional statements concerning the Technical Regulations (previously approved by the ASN proposing the Challenge) from time to time following the agreement of the ASN presenting all such statements will be issued to all registered competitors by way of Competitors' Bulletins at the race meeting, posted to the address detailed on the Event Registration Form or by E-mail.

1. CLASSIFICATION AND DEFINITION

- 1.1 Classification: Article 1.1 of the CIK-FIA Technical Regulations.
- 1.2 Definition: Article 1.2 of the CIK-FIA Technical Regulations.

2. GENERAL PRESCRIPTION

- 2.1 General: Article 2.1 of the CIK-FIA Technical Regulations

3. KART AND EQUIPMENT SAFETY

- 3.1 Kart Safety: Article 3.1 of the CIK-FIA Technical Regulations
- 3.2 Equipment Safety: Article 3.2 of the CIK-FIA Technical Regulations

4. GENERAL PRESCRIPTION FOR GROUP 2 KARTS

- 4.1 Chassis: Article 5.1 of the CIK-FIA Technical Regulations

5. ORGANIZER'S SUPPLEMENTARY PROVISIONS

5.1 Scrutineering

A mandatory check will be carried out before the start of Practice at every Round. It must be possible to identify the homologated equipment using the technical descriptions (drawings, dimensions, etc.) on the homologation form. For any used equipment, which has been homologated, each competitor shall be able to submit the relative homologation forms to identify the homologated equipment. For identification and control it must be possible to identify the homologated equipment.

5.1.1 Each Driver will be entitled to submit to Scrutineering the following equipment:

- 5.1.1.1 One (1) chassis with a valid 2010 or newer CIK-Homologation.
- 5.1.1.2 Two (2) engines of the same type per driver and category for the event.

Title Sponsor: Emirates Karting
Organizer: Ras Al Khaimah Kart Track (RAK TRACK)
Promoter: Emirates Karting

info@raktrack.ae



5.2 Chassis Homologation

Chassis must have a valid 2010 or newer CIK-Homologation.

No front brakes are allowed in the Junior Category. (Senior and Master allowed).

Any (wheel base chassis : min 850 mm, max 950mm "±5mm" and as proposed on the manufacturers catalogue) valid form of homologation with homologation plate presented is accepted for Rookie & Cadet Category.

- 5.2.1 The use of homologated Front Fairing & Front Fairing Mounting Kit and the use of a homologated bodywork homologation period 2015 – 2020 are mandatory. (not applicable for Cadet & Rookie classes)

5.3 Amount of Equipment (Chassis)

Drivers will be allowed one (1) chassis only. However if damage occurs to a chassis previously scrutinized for the Event, and if in the opinion of the Scrutineer it is not practical to repair in time, one alternative chassis of the same make and model as the damaged chassis may be scrutinized, in order to continue the Event.

5.4 Amount of Equipment (Engines)

Only 2 (two) engine are allowed for each driver and category for Scrutineering and use per event.

5.5 Fuel and Oil

5.5.1 Fuel will be non "Parc Ferme" status.

5.5.2 It will be each competitor's responsibility to purchase their own petrol from UAE petrol stations for free practice until the end of the race weekend. No racing fuels or additives are allowed.

5.5.3 The octane ratio will be stated in the Supplementary Regulations of the event. It is mandatory to employ only the indicated fuel in all Official sessions.

5.5.4 The requirements specified in these regulations are intended to ensure the use of fuels predominantly composed of compounds normally found in commercial fuel, and to forbid the use of specific power-boosting chemical compounds.

5.5.5 At any time the volume of fuel in the tank must be over or equal to 1.5 litres.

5.5.6 The petrol must be unleaded, maximum 98 octane.

5.5.7 The oil mixture ratio for X30 Classes Junior and above shall be 4% and for Rookie 3% .

5.5.8 It is forbidden to add any liquid and/or power-boosting chemicals in the petrol.

5.5.9 The Scrutineer/Organizer, following a decision of the Stewards, has the right to change/replace any Entrant or Driver's petrol at his/her discretion and at any time.

5.5.9.1 Case 1 - Should this be the case, the Entrant / Drivers will be asked to enter servicing park without petrol in his/hers petrol tank, here the fuel will be added, at no cost for the driver.

5.5.9.2 Case 2 - Petrol will be changed without warning, at no cost for the driver. Changed/Replaced petrol will be the petrol as stated in the supplementary regulations of the event. It is recommended that evaluation of fuels at the racetrack be conducted using one or all of the following tests:

5.5.9.2.1 Digatron DT- 47 Fuel Meter Test.

5.5.9.2.2 Specific Gravity Test

5.5.9.2.3 Water Solubility Test

5.6 Lubricant

The official oil for the X30 CHALLENGE is the CIK-Homologated Wladoil K-2T.

5.7 Tyres

5.7.1 Dry Tyres – Junior Category and above

Komet Racing Tyres Model K1H Sizes: Front: 10 x 4.60-5 / Rear: 11 x 7.10-5

5.7.2 Dry tyres – for Rookie and Cadet Category

Komet R.T. K1D-H size: Front 10 x 4.00-5 / Rear size: 11 x 5.00-5

5.7.3 Tyres Availability

Tyres needed for free practice are available through RAK TRACK.

5.8 Racing Number

Racing numbers must comply with the provisions of Article 2.24 of the CIK-FIA Technical Regulations. The numbers shall be black (without shadow and colored stripes) on a clear yellow background, and they shall be at least 15 cm high and have a 2 cm thick stroke and represented with an Arial type or similar font. The competition number shall be bordered by a yellow background of 1 cm minimum. They must be fitted before free practice and must be clearly visible during the whole race event on both front and rear and on both sides towards the rear of the bodywork. Damaged numbers and I.D must be replaced regularly.

Rookie:	20 to 99
Cadet:	100 to 199
Junior:	200 to 299
Senior:	300 to 399
Master:	400 to 499
Shifter:	500 to 599
Veteran:	600 to 699

5.9 Driver Name and Nationality (Optional)

Display of Driver Name is optional. Should the driver wish to display his name and nationality on the kart, the Driver's name and the flag of his nationality (The flag displayed must be as per the nationality of the License) shall be in the fore part of the lateral bodywork. The minimum height of the flag and the letters of the name shall be 3 cm.

5.10 Novice Drivers

A competitor will be considered as a „Novice“ and must carry Novice plates until he/she has obtained four kart race signatures from the Clerk of the Course.

Novice drivers will occupy the rearmost grid positions in all races (Heats, Pre-Finals, Final) notwithstanding his/her qualifying performance.

The novice plate must be a 22cm square yellow sticker or yellow plastic plate (plastic plate must have rounded off corners as per CIK regulations) with a black „X“ running from corner to corner (2-3cm stroke width). It must be displayed on the rear bumper alongside the regular race number plate.

TECHNICAL REGULATIONS PART 2 OF 2 (ENGINES) (ARTICLE 6-10)

6. ENGINES

The CIK-FIA Technical regulation also applies for the X30 CHALLENGE. The English text is the authentic version. RAK TRACK reserve the right to issue additional statements concerning the Technical Regulations (previously approved by the ASN proposing the series and the CIK-FIA) from time to time following the agreement of the ASN presenting the series, all such statements will be issued to

all registered competitors by way of Competitors Bulletins at the race meeting, and/or posted to the email address detailed on the Event registration Form.

6.1 Technical Regulations

All Technical Regulations are available on: www.raktrack.ae.

7. IAME X30 125cc RL TaG – SENIOR AND MASTER CATEGORIES

Any modification or adjunction on the engine and its accessories, if not expressly authorized, is forbidden. IAME considers as modifications any action changing the initial aspect and dimensions of an original part. Any modification and/or installation having as a consequence to alter a dimension and/or its control possibility is strictly forbidden. The Entrant is liable for the conformity of their equipment.

7.1 The following original homologation forms of the engine:

- 7.1.1 «254Q» Parilla 125cc X30 LIMIT. 16000
- 7.1.2 «293E» Carburetor TRYTON HB27-C

Are the integral part of the technical regulations.

- 7.2 Only the IAME X30 125cc-RL-TaG, original and strictly in compliance with the manufacturer's technical form (technical features, sizes, weights, diagrams with the tolerances prescribed by the manufacturer) is admitted. The pictures on the original homologation forms are as well valid to identify the engine and the parts.
- 7.3 The engines must be provided with their original serial number. No modification, improvement, polishing, addition or removal of material of any engine part is allowed. Each engine internal or external part has to be installed in its original position and functioning according to the original design specs.
- 7.4 **IMPORTANT:** The tolerances reported on homologation form are necessary to comprise all the machining, assembling and settling tolerances. Nevertheless, the Entrant is absolutely not allowed to make any intervention on the engine, even if the characteristic dimensions after his intervention will still be within the prescribed tolerances.

- 7.4.1 Any tuning is forbidden: the maximum and minimum allowed values and the volume of the combustion chamber have to be measured according to the CIK Technical Regulations.

7.5 Diagrams and Volume Chart: IAME X30

EXHAUST 177.5° Maximum
TT TRANSFER 127° ±
2° SIDE TRANSFERS
126° ± 2°
COMBUSTION CHAMBER VOLUME 9,7cc Minimum with CIK insert
Homologation form « 254Q » - angular reading by inserting a 0.2x5mm gauge

7.6 Cylinder Head

- 7.6.1 The cylinder head has to be strictly original. Only the thread repairing by means of an M14 x1,25 helicoil of the same length as the original thread is allowed. The sparkplug body tightened on the cylinder head must not protrude from the upper part of the combustion chamber dome.
- 7.6.2 The squish (distance between piston and the cylinder head) must be minimum 0.9mm at all points. The thickness of the tin wire (50% tin minimum.) used for the squish measurement must have a 1,5mm diameter. Measurements must be taken with the engine in racing conditions at any time during the event. The original IAME gauge n. ATT-025/1 is the reference to measure the cylinder head profile. The gauge shape must match with the dome profile, the squish area and the gasket plane.

7.7 Cylinder

Only the original cylinder can be employed. Polishing, sandblasting, trimming or adjustments are not allowed. Only re-boring is allowed. In case of doubt, the shape and the height of the transfers have to be compared to the cylinder of the sample engine. No heat treatment or surface treatment are allowed. The diagram adjustment is allowed only by means of the cylinder gasket replacement. Only one cylinder gasket, identical to the original one (0.40mm or 0.20mm +/- 0.05 mm) is admitted. No head gasket is admitted. The original IAME gauge n. ATT-025/2 is the reference to measure the cylinder transfers profile. Starting from the serial n. M3521/B3059 the X30 engines are equipped with a marked cylinder, as shown on the homologation form:

- 7.7.1 Engines with serial number previous to M3521/B3059 can be equipped with the marked cylinder.
- 7.7.2 Engines with serial number subsequent to M3521/B3059 cannot be equipped with the non marked older cylinder.

7.8 Crankcase, Crankshaft, Con-Rod, Crankpin

Strictly original and without any modification. Only original big end cage (X30125431), original washers (X30125436) and original small end cage (E-10440) are allowed.

7.9 Bearings

Steel and plastic cages are allowed. Only the strictly original crankshaft ball bearings (6206, C3 or C4) and counter balancing shaft ball bearings (6202, C3 or C4 and 6005, C3 or C4) are admitted. Ball-bearing with oblique contacts are forbidden. Only bearings with steel balls and rings are authorized. (Ceramic is forbidden).

7.10 Piston, Ring and Pin

Strictly original without any modification and in compliance with the engine technical form.

7.11 Reed Block

Strictly original without any modification. No gasket planes machining is allowed. Free screws. Original reed valve cover without any modification is allowed.

7.12 Reed Petals

Only fiberglass or carbon original IAME marked reed petals (min. 0.24mm thickness) are allowed. Mixing of carbon fibre and fiberglass petals is forbidden.

7.13 Carburetor

Only the Tryton HB27-C carburetor (Venturi max. diam. 26mm) 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 carburetor are allowed.

The inlet silencer must be identical to the original one supplied together with the engine (same brand, same model, same reference) with max. 22mm diameter intake tubes. Protective grids are optional. The rubber manifold with air filter connecting the inlet silencer to the carburetor is mandatory and must be installed and in compliance with the Homologation form.

Any injection and/or spraying system is forbidden. In case of doubt the carburetor must be compared to the sample carburetor.

7.14 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. Each driver will be responsible for the wear status of the clutch padding material and friction parts cleaning, since the proper clutch operation might be checked at any moment of the event, and even after each phase.

7.15 Ignition

7.15.1 Only original ignitions, either Digital "K" Selettra or Selettra "S" or Digital PVL systems are allowed, without any modification. Scrutineers, following a decision of the Stewards have the right to ask for the replacement of the whole ignition system or part at any moment before starting the race. The organizer will not be liable for any eventual breakdown occurred after the replacement.

7.15.2 Only the electronic CDI box type "C" (16000 RPM) is allowed and must be fixed on the chassis or on the engine or on the engine (plant Digital S) The markings on the electronic box are compulsory and must be clearly visible without disassembling the electronic box. Covering with adhesive or masking tape is forbidden. Modifications on the stator fixing, the shape and thickness of the rotor key and the rotor and crankshaft slots are forbidden. The battery must be fixed to the chassis and always connected to the ignition system.

7.16 Sparkplug

7.16.1 Only the following NGK sparkplugs, strictly original and without any modification, are allowed: BR9EG - BR10EG

7.16.2 The sparkplug must be installed with its original gasket.

7.16.3 The insulator must not exceed the sparkplug body and the length of the sparkplug body itself must be max. 18,5 mm.

7.16.4 Original spark plug cap, as delivered with the engine (IAME p.n. 10544)

7.17 Exhaust

7.17.1 Only the original muffler and header are allowed as supplied with the engine and must be kept strictly original and in compliance with the homologation form, therefore no modification in structure or in dimensions is allowed. Drilling and welding operations on the header are allowed only to install a temperature probe.

7.17.2 To modify the exhaust length only the flexible hose length can be modified. In any case the exhaust system must be in compliance with the phonometric measurement.

7.18 Cooling

The cooling system must be in its original configuration: only one IAME original radiator (p.n. T-8000B), only one simple water pump is allowed and in compliance with the homologation form. The number of radiator support brackets is not limited.

Only simple or by pass original IAME thermostats are allowed and their use is optional. Only water with no other additives is allowed for cooling. No additives are allowed. Radiators shields, either adhesive or mechanic are allowed but should not be removable when the kart is in motion. Only original water cooling tubes, as delivered with the engine.

7.19 Starting

The engine is provided with an on board electric starter. The original on board starting system has to be installed with all its components and properly connected.

7.20 Sprockets

Only IAME original Z10 – Z12 sprockets are admitted.

7.21 Inspections

- 7.21.1 The engine technical inspection is performed by Scrutineers. The Scrutineers have the right to inspect any part to the point that it can no longer be employed. If this is the event, the inspected part that comes out to be regular will be replaced to the driver at no cost. Any part found out irregular, will not be refunded.
- 7.21.2 In any moment, the Scrutineers, following a decision of the Stewards, have the right to replace any part, any accessory or even the entire engine.
- 7.21.3 The technical forms are the main comparison reference for Scrutineers. In case of doubts on the engine parts conformity, the comparison with the sample engine will be the definitive probating element.

8. IAME X30 125cc RL TaG – JUNIOR CATEGORY

Any modification or adjunction on the engine and its accessories, if not expressly authorized, is forbidden. IAME considers as modifications any action changing the initial aspect and dimensions of an original part. Any modification and/or installation having as a consequence to alter a dimension and/or its control possibility is strictly forbidden. The Entrant is liable for the conformity of their equipment.

8.1 The following original homologation forms of the engine:

- 8.1.1 «254Q» Parilla 125cc X30 LIMIT. 16000
- 8.1.2 «254Q» Parilla 125cc X30 LIMIT. 16000 Junior 29 mm restricted header
- 8.1.3 «293E» Carburetor TRYTON HB27-C

are the integral part of the technical regulations.

- 8.2 Only the IAME X30 125cc-RL-TaG, original and strictly in compliance with the manufacturer's technical form (technical features, sizes, weights, diagrams with the tolerances prescribed by the manufacturer) is admitted. The pictures on the original homologation forms are as well valid to identify the engine and the parts.
- 8.3 The engines must be provided with their original serial number. No modification, improvement, polishing, addition or removal of material of any engine part is allowed. Each engine internal or external part has to be installed in its original position and functioning according to the original design specs.
- 8.4 **IMPORTANT:** The tolerances reported on homologation form are necessary to comprise all the machining, assembling and settling tolerances. Nevertheless, the Entrant is absolutely not allowed to make any intervention on the engine, even if the characteristic dimensions after his intervention will still be within the prescribed tolerances.

8.4.1 Any tuning is forbidden: the maximum and minimum allowed values and the volume of the combustion chamber have to be measured according to the CIK Technical Regulations.

8.5 Diagrams and Volume Chart: X30

EXHAUST 177,5° Maximum

TT TRANSFER 127° ±

2° SIDE TRANSFERS

126° ± 2°

COMBUSTION CHAMBER VOLUME 9,7cc Minimum with CIK insert

Homologation form «254Q» - angular reading by inserting a 0.2x5mm gauge

8.6 Cylinder Head

- 8.6.1 The cylinder head has to be strictly original. Only the thread repairing by means of an M14x1,25 helicoil of the same length as the original thread is allowed. The sparkplug body tightened on the cylinder head must not protrude from the upper part of the combustion chamber dome.
- 8.6.2 The squish (distance between piston and the cylinder head) must be minimum 0.9mm at all points. The thickness of the tin wire (50% minimum tin) used for the squish measurement must have a 1,5mm diameter. Measurements must be taken with the engine in racing conditions at any time during the event. The original IAME gauge n. ATT-025/1 is the reference to measure the cylinder head profile. The gauge shape must match with the dome profile, the squish area and the gasket plane.

8.7 Cylinder

Only the original cylinder can be employed. Polishing, sandblasting, trimming or adjustments are not allowed. Only re-boring is allowed. In case of doubt, the shape and the height of the transfers have to be compared to the cylinder of the sample engine. No heat treatment or surface treatment are allowed. The diagram adjustment is allowed only by means of the cylinder gasket replacement. Only one cylinder gasket, identical to the original one (0.40mm or 0.20mm +/- 0.05 mm) is admitted. No head gasket is admitted. The original IAME gauge n. ATT-025/2 is the reference to measure the cylinder transfers profile. Starting from the serial n. M3521/B3059 the X30 engines are equipped with a marked cylinder, as shown on the homologation form:

- 8.7.1 Engines with serial number previous to M3521/B3059 can be equipped with the marked cylinder.
- 8.7.2 Engines with serial number subsequent to M3521/B3059 cannot be equipped with the non-marked older cylinder.

8.8 Crankcase, Crankshaft, Con-rod, Crankpin

Strictly original and without any modification. Only original big end cage (X30125431), original washers (X30125436) and original small end cage (E-10440) are allowed.

8.9 Bearings

Steel and plastic cages are allowed. Only the strictly original crankshaft ball bearings (6206, C3 or C4) and counter balancing shaft ball bearings (6202, C3 or C4 and 6005, C3 or C4) are admitted. Ball-bearing with oblique contacts are forbidden. Only bearings with steel balls and rings are authorized. (Ceramic is forbidden).

8.10 Piston, Ring and Pin

Strictly original without any modification, and in compliance with the engine technical form.

8.11 Reed Block

Strictly original without any modification. No gasket planes machining is allowed. Free screws. Original reed valve cover without any modification is allowed.

8.12 Reed Petals

Only fiberglass or carbon original IAME marked reed petals (min. 0.24mm thickness) are allowed. Mixing of carbon fibre and fiberglass petals is forbidden.

8.13 Carburetor

Only the Tryton HB27-C carburetor (Venturi max. diam. 26mm) 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 carburetor are allowed. The inlet silencer must be identical to the original one supplied together with the engine (same brand, same model, same reference) with max. 22mm diameter intake tubes. Protective grids are optional. The rubber manifold with air filter connecting the inlet silencer to the carburetor is mandatory and must be installed and in compliance with the homologation form. Any injection and/or spraying system is forbidden. In case of doubt the carburetor must be compared to the sample carburetor.

8.14 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. Each driver will be responsible for the wear status of the clutch padding material and friction parts cleaning, since the proper clutch operation might be checked at any moment of the event, and even after each phase.

8.15 Ignition

8.15.1 Only original ignitions, either Digital "K" Selettra or Selettra "S" or Digital PVL systems are allowed, without any modification. Scrutineers, following a decision of the Stewards have the right to ask for the replacement of the whole ignition system or part at any moment before starting the race. The organizer will not be liable for any eventual breakdown occurred after the replacement.

8.15.2 Only the electronic CDI box type "C" (16000 RPM) is allowed and must be fixed on the chassis or on the engine or on the engine (plant Digital S) The markings on the electronic box are compulsory and must be clearly visible without disassembling the electronic box. Covering with adhesive or masking tape is forbidden. Modifications on the stator fixing, the shape and thickness of the rotor key and the rotor and crankshaft slots are forbidden. The battery must be fixed to the chassis and always connected to the ignition system.

8.16 Sparkplug

- 8.16.1 Only the following NGK sparkplugs, strictly original and without any modification, are allowed: BR9EG - BR10EG
8.16.2 The sparkplug must be installed with its original gasket.
8.16.3 The insulator must not exceed the sparkplug body and the length of the sparkplug body itself must be max. 18.5 mm.
8.16.4 Original spark plug cap, as delivered with the engine (IAME p.n. 10544)

8.17 Exhaust

- 8.17.1 Only the original muffler and header are allowed as supplied with the engine and must be kept in compliance with the homologation form, therefore no modification in structure or in dimensions is allowed. Only the Junior 29 mm restricted header is allowed, in compliance with the homologation form. Drilling and welding operations on the header are allowed only to install a temperature probe.
8.17.2 Only the flexible hose length can be modified in order to modify the exhaust length. In any case the exhaust system must be in compliance with the phonometric measurement.

8.18 Cooling

The cooling system must be in its original configuration: only one IAME original radiator (p.n. T-8000B), only one IAME original simple water pump (p.n. T-8202) are allowed. The number of radiator support brackets is not limited. Only simple or by pass IAME original thermostats are allowed and their use is optional. Only water with no other additives is allowed for cooling. Radiators shields, either mechanic or adhesive are allowed but should not be removed when the kart is in motion. Only original water cooling tubes, as delivered with the engine.

8.19 Starting

The engine is provided with an on board electric starter. The original on board starting system has to be installed with all its components and properly connected.

8.20 Sprockets

Only IAME original Z10 or Z11 or Z12 sprockets are admitted.

8.21 Inspections

8.21.1 The engine technical inspection is performed by the Scrutineers. The Scrutineers have the right to inspect any part to the point that it can no longer be employed. If this is the event, the inspected part that comes out to be regular will be replaced to the driver at no cost. Any part found out irregular, will not be refunded.

8.21.2 In any moment, the Scrutineers, following a decision of the Stewards, have the right to replace any part, any accessory or even the entire engine.

8.21.3 The technical forms are the main comparison reference for Scrutineers. In case of doubts on the engine parts conformity, the comparison with the sample engine will be the definitive probing element.

9. **IAME X30 Shifter 125cc RL TaG – SHIFTER & VETERAN CATEGORY**

Any modification or adjunction on the engine and its accessories, if not expressly authorized, is forbidden. IAME considers as modifications any action changing the initial aspect and dimensions of an original part. Any modification and/or installation having as a consequence to alter a dimension and/or its control possibility is strictly forbidden. The Entrant is liable for the conformity of their equipment.

9.1 The following original homologation forms of the engine:

9.1.1 «303G» IAME X30 Shifter 124cc TaG

are the integral part of the technical regulations.

9.2 Only the IAME X30 SHIFTER 125cc-RL-TaG, original and strictly in compliance with the manufacturer's technical form (technical features, sizes, weights, diagrams with the tolerances prescribed by the manufacturer) is admitted. The pictures on the original homologation forms are as well valid to identify the engine and the parts.

9.3 The engines must be provided with their original serial number. No modification, improvement, polishing, addition or removal of material of any engine part is allowed. Each engine internal or external part has to be installed in its original position and functioning according to the original design specs.

9.4 **IMPORTANT:** The tolerances reported on homologation form are necessary to comprise all the machining, assembling and settling tolerances. Nevertheless, the Entrant is absolutely not allowed to make any intervention on the engine, even if the characteristic dimensions after his intervention will still be within the prescribed tolerances.

9.4.1 Any tuning is forbidden: the maximum and minimum allowed values and the volume of the combustion chamber have to be measured according to the CIK Technical Regulations.

9.5 Diagrams and Volume Chart: X30 SHIFTER

EXHAUST 195,5° ± 2°

BOOSTERS 186,5° ± 2°

TT TRANSFER 127°

± 3°

PRIMARY SIDE TRANSFERS 130° ± 2°

SECONDARY SIDE TRANSFERS 128° ± 2°

COMBUSTION CHAMBER VOLUME 13cc minimum with CIK insert

Homologation form «303G» - angular reading by inserting a 0.2x5mm gauge

9.6 Cylinder Head

- 9.6.1 The cylinder head has to be strictly original. Only the thread repairing by means of an M14x1,25 helicoil of the same length as the original thread is allowed. The sparkplug body tightened on the cylinder head must not protrude from the upper part of the combustion chamber dome. The gauge p.n ATT-046/1 is the reference to check the interior shape of the cylinder head. Only one copper head gasket allowed.
- 9.6.2 The squish (distance between piston and the cylinder head) must be minimum 0.85mm at all points. The thickness of the tin wire (50% minimum tin) used for the squish measurement must have a 1,5mm diameter. Measurements must be taken with the engine in racing conditions at any time during the event.

9.7 Cylinder

Only the original cylinder can be employed. Polishing, sandblasting, trimming or adjustments are not allowed. Only re-boring is allowed. In case of doubt, the shape and the height of the transfers have to be compared to the cylinder of the sample engine. No heat treatment or surface treatment are allowed.

The diagram adjustment is allowed only by means of the cylinder gasket replacement. Only one cylinder gasket, identical to the original one (0.50mm or 0.40mm or 0.30mm or 0.20mm or 0.10mm) are admitted. A +/- 0.05 mm tolerance is admitted taking into account the gasket thickness variation. Only one gasket is admitted.

9.8 Crankcase, Crankshaft, Con-rod, Crankpin

Strictly original and without any modification. Only original big end cage (X30125431), original washers (X30125436) and original small end cage (IFC-50350) are allowed.

9.9 Bearings

Steel and plastic cages are allowed. Only the strictly original crankshaft ball bearings (ball bearing 6205, C4 or roller bearing 6205 BC1 1442B) and gearbox shafts ball bearings (6205 C4 - 6204 C4 - 6202 T1XC4) are allowed. Ball-bearing with oblique contacts are forbidden.

Only bearings with steel balls, steel rollers and steel rings are authorized.

9.10 Piston, Ring and Pin

Strictly original without any modification, No gasket planes machining is allowed. Free screws. Original reed valve cover without any modification is allowed.

9.11 Reed Block

Strictly original without any modification. No gasket planes machining is allowed. Free screws. Original reed valve cover without any modification is allowed.

9.12 Reed Petals

Only original carbon fibre IAME marked (min. 0.03mm thickness) are allowed. Modification to the original petals shape is forbidden.

9.13 Carburetor & FUEL PUMP

Only the carburetor supplied together with the engine in its original configuration (same brand, same model, same reference) is admitted: Dell'Orto VHS30-CS. Only the original Dell'Orto setting elements, provided for the concerned carburetor and summarized on the homologation form, are allowed. The inlet silencer must be selected between the two options reported on the homologation form. The inlet silencer must remain strictly original and in compliance with their homologation form. Any injection and/or spraying system are forbidden.

Only the vacuum fuel pump Paioli 2159063 or Mikuni DF52-176 are allowed and without any modification.

9.14 Clutch

All the clutch components must be strictly IAME original. The clutch must be installed with all its parts in the original number and position.

9.15 Ignition

- 9.15.1 Only original ignitions, either Digital Selettra or Digital PVL systems are allowed, without any modification. Scrutineers, following a decision of the Stewards have the right to ask for the replacement of the whole ignition system or part at any moment before starting the race. The organizer will not be liable for any eventual breakdown occurred after the replacement.
- 9.15.2 Only the electronic **CDI box type "Z1"** is allowed and must be fixed on the chassis. Modifications on the stator fixing, shape and thickness of the rotor key and the rotor and crankshaft slots are forbidden as well as any modification on the ignition system support. The markings on the electronic box are compulsory and must be clearly visible without disassembling the electronic box. Covering with adhesive or masking tape is forbidden. The battery must be fixed to the chassis and always connected to the ignition system.

9.16 Sparkplug

- 9.16.1 Only the following NGK sparkplugs, strictly original and without any modification, are allowed: BR9EG - BR10EG
- 9.16.2 The sparkplug must be installed with its original gasket.
- 9.16.3 The insulator must not exceed the sparkplug body and the length of the sparkplug body itself must be max. 18.5 mm.
- 9.16.4 Original spark plug cap, as delivered with the engine (IAME p.n. 10544)

9.17 Muffler, Manifold and Silencer

- 9.17.1 The original muffler as supplied with the engine must be kept in compliance with the homologation form, therefore no modification in structure or in dimensions are allowed. Drilling and welding operations on the exhaust muffler are only allowed on the support provided for the installation of the temperature probe. Only spacers and gaskets between cylinder and exhaust manifold can be added or removed in order to adjust muffler length.

9.18 Cooling

Cooling system: only one radiator, only one simple, plastic or aluminium, water pump (one inlet, one outlet) are allowed. The number of radiator support brackets is not limited. Only simple or by pass thermostats are admitted and their use is optional. Only water with no other additives is allowed for cooling. Radiators shields, either adhesive or mechanical are allowed but should not be removed when the kart is in motion.

9.19 Starting

The engine is provided with an on board electric starter. The original on board starting system has to be installed with all its components and properly connected.

9.20 Sprockets

Only IAME original Z15, Z16, Z17, Z18, Z19 and Z20 sprockets are admitted.

9.21 Gearbox

- 9.21.1 All the gearbox and selector components must be strictly original.
- 9.21.2 No further heat treatment nor surface treatment are allowed.
- 9.21.3 The gear ratios must be strictly original and according to the list described in the homologation form.

9.22 Inspection

- 9.22.1 The engine technical inspection is performed by the Scrutineers. The Scrutineers have the right to inspect any part to the point that it can no longer be employed. If this is the event, the inspected part that comes out to be regular will be replaced to the driver at no cost. Any part found out irregular, will not be refunded.
- 9.22.2 In any moment, the Scrutineers, following a decision of the Stewards, have the right to replace any part, any accessory or even the entire engine.
- 9.22.3 The technical forms are the main comparison reference for Scrutineers. In case of doubts on the engine parts conformity, the comparison with the sample engine will be the definitive probing element.

10. IAME X30 Rookie 60cc TaG – Rookie & Cadet Category

Any modification or adjunction on the engine and its accessories, if not expressly authorized, is forbidden. X30 Challenge considers as modifications any action changing the initial aspect and dimensions of an original part. Any modification and/or installation having as a consequence to alter a dimension and/or its control possibility is strictly forbidden. The Entrant is liable for the conformity of their equipment.

10.1 The following original homologation forms of the engine:

- 10.1.1 «330B_X30 Rookie 60cc TaG» Cadet.
 10.1.2 «330B_X30 Rookie 60cc TaG» Rookie 16mm restricted exhaust manifold.
 are integral part of the technical regulations.

10.2 Only the IAME X30 Rookie 60cc TaG, original and strictly in compliance with the manufacturer's technical form (technical features, sizes, weights, diagrams with the tolerances prescribed by the manufacturer) is admitted. The pictures on the original homologation forms are as well valid to identify the engine and the parts.

10.3 The engines must be provided with their original serial number. No modification, improvement, polishing, addition or removal of material of any engine part is allowed. Each engine internal or external part has to be installed in its original position and functioning according to the original design specs. The pictures reported on the technical form identify the engine and its accessories

10.4 **IMPORTANT:** The tolerances reported on homologation form are necessary to comprise all the machining, assembling and settling tolerances. Nevertheless, the Entrant is absolutely not allowed to make any intervention on the engine, even if the characteristic dimensions after his intervention will still be within the prescribed tolerances.

10.4.1 Any tuning is forbidden: the maximum and minimum allowed values and the volume of the combustion chamber have to be measured according to the CIK Technical Regulations.

10.5 DIAGRAMS TABLE:

	IAME X30 Rookie 60cc TaG	Tool
EXHAUST	157° max.	Gauge 0.2x5mm
ADMISSION	144° max.	Gauge 0.2x5mm
SIDE TRANSFERTS	117,5° max.	Gauge 0.2x5mm
COMBUSTION CHAMBER VOLUME	6,2 cc min.	CIK insert

Fiche «330B_X30 Rookie 60cc TaG»

10.6 Cylinder Head

- 10.6.1 The cylinder head has to be strictly original. Only the thread repairing by means of an M14x1,25 helicoil of the same length as the original thread is allowed. The sparkplug body tightened on the cylinder head must not protrude from the upper part of the combustion chamber dome.
- 10.6.2 The squish (distance between piston and the cylinder head) must be minimum 0.55mm at all points. The thickness of the tin wire (50% minimum tin) used for the squish measurement must have a 1,5mm diameter. Measurements must be taken with the engine in racing conditions at any time during the event. The original IAME gauge n. 10215 is the reference to measure the cylinder head profile.

10.7 Cylinder

Only the original cylinder can be employed. Polishing, sandblasting, trimming or adjustments are not allowed. Only re-boring is allowed. In case of doubt, the shape and the height of the transfers have to be compared to the cylinder of the sample engine. No heat treatment or surface treatment are allowed. The diagram adjustment is allowed only by means of the cylinder gasket replacement. Only one cylinder gasket, identical to the original one (0.40mm or 0.20mm +/- 0.05 mm) is admitted. No head gasket is admitted. The original IAME gauge n. ATT-018 and ATT-005 are the reference to check the cylinder ports.

10.8 Crankcase, Crankshaft, Con-rod, Crankpin

Strictly original and without any modification. Only original big end cage (IAME p.n. B-10431) and original small end cage (IAME p.n. A-60440) are allowed.

10.9 Bearings

Steel and plastic cages are allowed. Only the strictly original crankshaft ball bearings (6204 C4) are admitted. Ball-bearing with oblique contacts are forbidden. Only bearings with steel balls and rings are authorized. (Ceramic is forbidden).

10.10 Piston, Ring and Pin

Strictly original without any modification and in compliance with the engine technical form.

10.11 Carburetor

Only the Dell'Orto PHBG 18 BS carburettor supplied together with the engine in its original configuration (same brand, same model, same reference) is admitted.

- 10.11.1 Only the accessories supplied together with the original carburettor and indicated on the technical form are allowed.
- 10.11.2 Only the Dell'Orto P34PB2 (IAME p.n. A-61980) fuel pump supplied together with the engine is allowed.
- 10.11.3 The regulation of the carburetion is limited to the idle and maximum jets replacement.
- 10.11.4 In case of doubt, the carburettor must be compared to the sample carburettor.
- 10.11.5 The inlet silencer must be identical to the original one supplied together with the engine (same brand, same model, same reference) with 22mm (+/- 1mm) diameter intake tube. Protective grids are optional. The rubber manifold (with or without air filter) connecting the inlet silencer to the carburettor is mandatory, it must be installed and in compliance with the homologation form.
- 10.11.6 Both the manifold connecting the carburetor to the intake silencer and the rubber manifold connecting the carburetor to the cylinder must be strictly original as described in the technical form.
- 10.11.7 Any injection and/or spraying system is forbidden.

10.12 Clutch

Strictly original. 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. Each driver will be responsible for the wear status of the clutch padding material and friction parts cleaning, since the proper clutch operation might be checked at any moment of the event, and even after each phase.

10.13 Ignition

Only the original SELETTRA two poles ignition is allowed.

- 10.13.1 The ignition plant must be strictly original and can be partially or totally replaced under specific request of the Scrutineers at any time during the event. The organizer will not be liable for any eventual breakdown occurred after the replacement.
- 10.13.2 Modifications on the stator fixing, on the shape and thickness of the rotor key and on its slots on the crankshaft and on the rotor, are forbidden.

10.14 Sparkplug

- 10.14.1 Only the following NGK sparkplugs, strictly original and without any modification, are allowed: BR9EG - BR10EG
- 10.14.2 The sparkplug must be installed with its original gasket.
- 10.14.3 The insulator must not exceed the sparkplug body and the length of the sparkplug body itself must be max. 18.5 mm.
- 10.14.4 Original spark plug cap, as delivered with the engine (IAME p.n. 10545)

10.15 Exhaust

Only the original exhaust pipe is allowed as supplied with the engine and must be kept strictly original and in compliance with the homologation form.

- 10.15.1 No modifications in structure or in dimensions are allowed.
- 10.15.2 Exhaust manifold strictly in compliance with the homologation form.
- 10.15.3 The use of the original exhaust manifold gasket is mandatory and the sealing of gas between the manifold and the cylinder must be guaranteed at any time.

10.16 Cooling

The cooling system must be in its original configuration; only one IAME original radiator (IAME p.n. T-8602), only one IAME original simple water pump (IAME p.n. T-8202) are allowed and in compliance with the homologation form.

- 10.16.1 Only simple or by pass original IAME thermostats are allowed and their use is optional.
- 10.16.2 Cooling only by water, no other additives allowed.
- 10.16.3 Radiators shields, either adhesive or mechanic are allowed but should not be removable when the kart is in motion.

10.17 Starting

The engine is provided with an on board electric starter. The original on board starting system can be installed with or without all its components.

- 10.17.1 The use of the pull start system can be exceptionally authorized only in the event that the starter does not crank the engine.

10.18 Sprockets

Only IAME original clutch drums with built-in Z10 or Z11 sprockets are allowed.

10.19 Inspections

- 10.19.1 The engine technical inspection is performed by the Scrutineers. The Scrutineers have the right to inspect any part to the point that it can no longer be employed. If this is the event, the inspected part that comes out to be regular will be replaced to the driver at no cost. Any part found out irregular, will not be refunded
- 10.19.2 In any moment, the Scrutineers, following a decision of the Stewards, have the right to replace any part, any accessory or even the entire engine
- 10.19.3 The technical forms are the main comparison reference for Scrutineers. In case of doubts on the engine parts conformity, the comparison with the sample engine will be the definitive probating element.

