FORMULA TKM 2-STROKE
JUNIOR & SENIOR REGULATIONS 2024

Note: All rule amendments/changes from last year to this year are highlighted in YELLOW

D3.0 Group **Junior and Senior – Non-Gearbox**

D3.1 Class **Formula TKM**

Affiliation Commercial – Tal-Ko

D3.2 Introduction. The UK's own unique class catering for drivers of all ages from 9 upwards in Inter through to Juniors and Seniors. A commercial and cost-efficient class with strict technical and cost controls. Motorsport UK British Championship classes.

The TKM brand is unique in enabling young drivers to go from Mini/Inter through to Senior all with one engine which needs only minor upgrades. This is made possible by having weight/restrictor size bands. to enable fair racing across all sizes and weights of drivers. It is intended that normally all bands within a class will race together for the same trophies with same colour number plates. Where a club has sufficient numbers, they may if they wish run different weight/restrictor bands of either class on separate grids. Note minimum weight for drivers in the Junior age class. Where appropriate TKM Junior 2 and 4-stroke classes may race together, and TKM Senior 2 and 4-stroke classes may race together. Full regulations for the TKM 4-stroke class are available at: https://www.tal-ko.com/PDF/FormulaTKM4-StrokeRegulations.pdf

The Clubman and Masters sub-classes may be used by clubs at their discretion where there is sufficient interest either within normal Extreme classes or extra to, according to numbers.

Classic TKM is aimed at the fast-growing number of drivers who wish to race older karts to slightly modified regulations but which fully adopt the ethos of the class.

Note TKM Inter class regulations using the 950mm wheelbase karts have their own unique regulations.

The classes allow optional use of clutches and TAG. All seniors should now be on Extreme 115cc class engines, though any that are not should race within the normal grid. The control of the class regulations rest with Tal-Ko who are the class owners. Further copies of the full regulations are available from Tal-Ko, 54 Sunderland Road, Sandy, Bedfordshire SG19 1QY. Tel. 01767 682020. Email: info@tal-ko.com. Can be downloaded from www.tal-ko.com. Full engine details are contained in the TKM BT82 official fiche also available from Tal-Ko.

While long term stability is at the heart of the classes, in the interests of fairness, clarity, safety, and drivers, Tal-Ko reserves the right to agree with the Motorsport UK clarifications and changes to regulations at short notice if required.

D3.3 Chassis.

D3.3.1 Rule no longer applies.

D3.3.2 Drivers may compete in any chassis conforming to Motorsport UK Yearbook regulations providing it meets all other requirements herein. TKM homologated karts must still display a TKM sequential plate if using modified old-style crash bars.

D3.3.3 Chassis to be constructed from magnetic steel tubing, cross section free. The method of welding/brazing is free but for all main chassis joins welding/brazing is obligatory - i.e. No clamping, sliding members or torsional and stiffness adjustments including additional bolt-in torsion and/or stiffness bars are permitted. The use of any type of hydraulic or similar damping device for any purpose is specifically prohibited.

D3.3.4 Engine must be mounted to the right-hand side, driver seated facing to the front.

D3.3.5 The rear axle must be of parallel magnetic steel up to 50mm nominal diameter. The axle can be either solid or hollow. It must be supported in two bearings only, using any type of metal bearing and retention method including cassette type. Ceramic bearings are not permitted. No other bearings or stiffening devices may be attached to the rear axle for any purpose. It is permitted to use circular collars around the rear axle immediately next to the axle bearings to prevent axle movement. They must not exceed 21mm in width and must be fitted for the sole purpose of axle location. It is permitted to semi-drill the axle for grub screw location. It is permitted to make use of rear axle bearing mounts or bearing adaptors and flanges which allow wheelbase or height adjustment provided that it does not exceed Motorsport UK dimensions permitted. It is permitted to fit internal

inserts positioned in keyway and bearing areas for the specific use of extending life of axle with regards to cracking etc.

D3.3.6 Adjustable rear ride height permitted.

D3.3.8 The steering must have non-adjustable castor and camber angles.

The king pin bolts must be centrally positioned in both the frame stub axle mounts and stub axles. The position of the king pin holes must be non-adjustable and if required central neutral components must be used in place of adjustable ones.

D3.3.9 Front ride height adjustment is permitted.

D3.3.10 All karts must have the steering column mounted in such a way that even if the bottom retaining bolt is removed it cannot pull free from its lower bearing.

D3.3.11 Adjustable or removable rear, front and side torsion and/or stiffness bars are specifically banned. If a kart is manufactured with torsion and/or stiffness bar options each bar must either be removed or welded permanently in place. If welded in place the torsion and/or stiffness bars must be welded directly to the chassis permanently. Welding the clamps is not sufficient and it must be torsion and/or stiffness bar to chassis direct welding. Torsion bar clamps must be removed. Although the exact method of welding is free (mig, tig, braze, etc) tack welds are not sufficient. The welding must be nominally continuous around each joint and at a minimum cover 75 per cent of the circumference allowing for areas which may be difficult to access. The word permanent is stressed. The only additions permitted to chassis are items to meet latest Motorsport UK Yearbook safety regulations.

D3.3.12 Unless listed here for a specific purpose, use of the following materials for chassis/kart parts is specifically prohibited: Components made from Kevlar, Carbon Fibre, Titanium alloys, Magnesium alloys, Cobalt alloys, Tungsten Alloys and Beryllium Alloys, Metal Matrix Composites and Ceramics. The seat, floor tray and chain guard can be made from Plastic or similar materials, Fibre Glass, Aluminium, Kevlar or Carbon Fibre. It is permitted to use Magnesium Alloys for the following specific parts: wheels, front and rear wheel hubs, engine mount, brake disc hub, brake caliper mount, rear axle bearing mounts, sprocket carrier and steering wheel mounting boss. The use of plastic or similar materials for components such as wheels, wheel hubs/bosses, sprockets and brake disc carriers is expressly forbidden. Lubricants on kart only, excluding engine, are free.

D3.3.13 Additional bolt on seat stays/mountings are permitted position and style free.

D3.3.14 Bodywork (A) All karts: Use of CIK-homologated crash tested bodywork consisting Side Pods, a Front Fairing and Nassau Panel is mandatory and must conform to Motorsport UK Yearbook regulations. It is permitted to modify the bodywork mounting points on the chassis to accept CIK-homologated bodywork but it must be undertaken in a professional manner. The combination of homologated bodywork elements of different makes or models is authorised, save and except that the two side bodywork elements must be used together as a set. Components from the same element cannot be mixed, i.e. side bars from one homologation cannot be used with side pods from another homologation. The Front Fairing and Nassau Panel, providing they compatibly connect with each other, may be from different makes and models. Side Pods may incorporate a suitable hole for starter shaft, even when clutch not fitted.

When wet weather tyres are fitted, it is permitted for the wheels and tyres to be inside the Side Pods.

Use of the CIK-homologated detachable front fairing mounting kits is mandatory (U17.1.6). A pre-2015 CIK homologation front fairing CANNOT be used with the CIK detachable front fairing mounting kit. All karts **MUST** attach their dismountable front fairing/spoiler with the CIK approved KG manufactured and homologated Front Fairing Mounting kit.

(B) Clubman karts only: TKM homologated karts for the period up to 2006 inclusive with old style diagonal bar fixing points may use side bumpers with a minimum of one tube with a minimum size of 18mm diameter (19/20mm recommended) and a wall thickness of 1.4mm minimum securely fixed to the chassis by a minimum of two points on each side and must allow for the attachment of mandatory side bodywork. Kart front bumper may be modified to allow fitment of a dismountable front fairing.

D3.3.15 Two types of rear bumper / wheel protection are permitted.

(A) A metal rear bumper which must comply to Motorsport UK Yearbook regulations. It must not incorporate adjustable torsion and/or stiffness by its design and construction. The one-piece main horizontal steel tube element of the rear bumper must be attached to its two bumper mounting points by welding only. The two upright supports of the rear bumper must also be welded to their bumper mounting points but can either be welded to or attached with bushes that can freely move on the one-piece main horizontal steel tube element. No bolted or clamp-like joints permitted.

It is fully permitted to use additional measures to ensure the bumper does not fall off in case of a breakage or failure through use of cable ties and wire type cable. A small bracket with bolts may be used with a maximum of

one bolt on either side of the kart attaching next to or adjoining the mounting points on the bumper itself. This must be for security only.

It is permitted to use rubber pipe type material secured by cable ties or jubilee type clips to guard against the main horizontal steel tube element of the bumper where it meets the two upright supports, fracturing and falling off while on track. If jubilee clips, they must be fitted with their tightening screw heads forward of the main horizontal steel tube element.

(B) An adjustable width CIK plastic rear wheel protection system is also permitted. The width of this rear wheel protection should always be in line with the outside of the rear wheels/tyres. The gap between the front of the rear wheel protection system and the surface of the rear tyres must be between 15mm and 50mm.

D3.3.16 Drivers may make use of tank tape, cable ties, thin wire, or throttle cable type bowden cable in ensuring that items such as exhaust, bumpers, electrical wiring, chain guard, etc. do not come off during the course of racing. One or more fixings may be used, however the item used must only be there for secondary security and reliability purposes and must not be attached in such a manner that it affects torsion and/or stiffness adjustment of the kart or provides any other performance advantage.

D3.3.17 Seat type is free including material, subject to Motorsport UK Yearbook.

D3.3.18 Floor tray shape and material free but must comply to Motorsport UK Yearbook regulations (see U16.6). Must not have any sharp edges exposed.

D3.3.19 The fuel tank must be floor tray mounted beneath the steering column, forward of the driver. Type free. Fuel filter permitted either in-line or within the fuel tank or both. Maximum fuel tank capacity 9.25 litres. An overflow catch-tank must be used.

D3.3.20 The fitting of any device used to manually adjust the flow of fuel from tank to carburettor while on track is not permitted.

D3.3.21 Rule no longer applies.

D3.3.22 On the grounds of safety the use of aluminium nuts and bolts is prohibited throughout the whole of the kart including the engine.

D3.3.23 Brake and throttle foot pedal position and type free.

D3.3.24 Rule no longer applies.

D3.3.25 Rule no longer applies.

D3.4 Engine. – See also TKM BT82 Engine Fiche

D3.4.1 TKM BT82 Piston Port two stroke engine fitted with a standard Walbro WB19 carburettor stamped TKM, carb spacer block marked TKM, ignition Motoplat 9600903-1 or PVL system marked TKM, TKM exhaust system complete with flex and standard TKM Carburettor induction box complete with original filter. The engine as raced, including induction box and ancillaries, must conform, in all respects with the 2024 TKM BT82 Homologation Fiche with its Extension and Amendments, as clarified and elaborated within these regulations and any official TKM technical bulletins.

D3.4.2 The engine and ancillary components such as carburettor, ignition, exhaust, and noise induction box must be raced in standard condition as manufactured and/or supplied by Tal-Ko with no other brand or tuner identity added. Filing, grinding, machining, polishing, surface treating, surface coating, plasma metal spraying and lightening of any component including bearings is expressly forbidden unless specifically authorised in these regulations and/or the official TKM BT82 fiche. This expressly includes any chemical or other treatments intended to smooth the flow of air/fuel within the carburettor.

D3.4.3 The addition of materials to any component is not allowed. Black anodising of the head and barrel must remain, subject to fiche requirements. It is permitted to mark engine measurements and engine number on the barrel/head. Where components are found to be in breach of regulations and not capable of being rectified, they may be marked prominently and permanently as such by Tal-Ko. External wear and tear such as accident damage causing fin breakage, or throttle spring rubbing, will be permitted.

D3.4.4 While it is accepted that a minimal amount of damage is permitted to the exterior of the induction/noise box system including its trumpets, any damage that affects the course of airflow into the engine is prohibited. This particularly applies to the shape of the inlet trumpets.

D3.4.5 Old style noise induction boxes. No longer permitted.

New style noise induction boxes. Mandatory for all classes. For full regulations see official TKM BT82 engine fiche. Note that for wet use it is permitted and recommended to use a protective device to prevent water being sucked into the air box inlet trumpets. Design free and may be fitted externally to the airbox using cable ties, tape etc provided no holes are drilled into the air/mixture internal path. May also be fitted to sidepod. May only be fitted when the official conditions set as wet or open.

D3.4.6 All parts used in or on this engine must be of original TKM manufacture or source, except where expressly allowed.

UNLESS IT STATES THAT YOU CAN DO IT, YOU CANNOT!!!

D3.4.7 The following minor modifications are permitted:

- Drilling of a hole in a head or barrel fin to fit a throttle return spring.
- Modification to, and addition of, a slot in the Carburettor swivel assembly and Carburettor spacer to allow for ease of throttle cable fitment.
- Drilling holes in component mounting nuts and bolts to allow the fitting of locking devices.
- Extension to the high jet to ease adjustment while driving is permissible, providing the original jet is still used and the extension does not exceed 50mm in length. Extension to the low jet is **not** permitted.
- Drilling of scrutineer's sealing wire holes, one per component in the fins of the head, barrel, and two crankcase halves. It is also permitted for authorised scrutineers at a race meeting to mark engines with paint.
- Where spring location holes in the TKM exhaust and manifold bend flex spring flanges have become worn through, it is permissible to re-drill additional holes further around the flanges solely for spring retention purposes. It is also permitted to repair broken spring holes and or cracked flanges with a local weld/braze repair.
- TKM manufactured brass main bearing shims may be used to facilitate correct crankshaft end float clearance.
- As an alternative to the standard black carburettor fuel pump diaphragm, it is permitted to use the beige colour fuel pump diaphragm as supplied in the Walbro WB19 repair kits, part nos. D10-WB and K10-WB.
- The small butterfly adjustment screw and spring screw which sets tick over on the Carburettor can be fitted either way round. It is beneficial to reverse it when setting up tick over on a clutch type engine.
- It is permitted to repair broken ignition wires providing original type connectors are used.
- It is permitted to mark the carburettor with personal identification marks like 1, 2 or A, B etc, but this must not interfere with the TKM logo or the model and batch number or have tuner recognition.

D3.4.8 It is permitted to paint the TKM manufactured exhaust silencer provided that only black paint is used and that the original TKM logo is still visible. It is expressly prohibited to use any other coating or plating or to use any colour other than black. It is also clarified that on all engine types, while the exhaust may be superficially cleaned and/or painted black on the external surface, it is not permitted to carry out extensive polishing and any accompanied weight reduction.

D3.4.9 Junior TKM (using 100cc TKM BT82 engine) must use a single TKM manufactured aluminium anodised carb restrictor plate between the carburettor and engine. This is a flat metal plate with a nominal minimum thickness of 3mm and a central parallel round bore of varying sizes and identifying colour according to driver weight through which all the mixture feeding the engine must pass. No blenders of any configuration are allowed. This part must not be modified or polished in any way and must be as made and supplied by Tal-Ko. It must display the genuine TKM logo. Coloured anodising must be intact. The Junior 100cc 148kg power band does not require a restrictor.

D3.4.10 Senior and Junior weight/restrictor sizes as follows; in each case the weight is total of driver as per U17.29.6 and kart as raced. Restrictor sizes quoted are maximum diameter permitted:

TKM Class	Colour	Restrictor
Junior 123	Black	19.5mm
Junior 128	Gold	20.5mm
Junior 135	Blue	22.0mm
Junior 142	Purple	24.0mm
Junior 148	No restrictor	
Senior Extreme & Clubman 132	Black	19.5mm
Senior Extreme & Clubman 139	Gold	20.5mm
Senior Extreme & Clubman 146	Blue	22.0mm

Senior Extreme & Clubman 153	No restrictor
Senior Extreme Masters 160	No restrictor

Tal-Ko reserves the right, with Motorsport UK approval, to amend restrictor size/minimum weight with one month's notice to correct any apparent advantage/disadvantage.

D3.4.11 Deleted

D3.4.12 Ignition timing is limited as detailed. When it is set it must be locked so that it cannot be adjusted by the driver with the kart in motion or by any mechanical and or vacuum/electronic device.

D3.4.13 On Motoplat Ignition, the timing must be set to between 2.0mm and 3.0mm before Top Dead Centre. On the PVL system, ignition timing must be set to between 1.5mm and 2.1mm BTDC. Ignition timing to be measured statically using a dial indicator on the piston crown and the original ignition timing lines. TAG engine has its own specifications as set out in the official TKM BT82 engine fiche.

D3.4.14 Engine management systems and additional fuel pumps are prohibited.

D3.4.15 Connection between the carburettor and throttle pedal to be of one bowden type cable. No other means of throttle actuation permitted except for hand throttles used as easy-start mechanism.

D3.4.16 For all engines it is mandatory to use the appropriate HT lead, spark plug cap and approved spark plug (with its original sealing gasket washer in place) all in unmodified form. Note for TAG engines the plug cap is PVL and black in colour and for non-TAG it is NGK and red in colour. The HT leads are also different and not interchangeable between TAG and non-TAG engines.

The only spark plugs permitted are:

NGK – B9EG, B10EG, BR9EG, BR10EG, B9EGV, B10EGV, BR9EIX and BR10EIX.

DENSO – IW27 and IW 31 no longer permitted

D3.4.17 A minimal amount of machining is permitted to the cylinder head subject to stringent conditions, primarily intended to allow rectification of engines that have suffered head damage. This must be carried out in line with the drawings laid out in the official TKM BT82 engine fiche. Note that the squish angle face of 12 degrees plus or minus 1 degree must meet and intersect the liner mating face of the cylinder head at that angle, with no intermediary angles or curves throughout their full circumference. Any form of step, recess, groove or similar will render the cylinder head illegal since it will not follow the original shape.

The combustion chamber dome must at all times remain as a concave spherical shape throughout its entire diameter. At the point where it meets the squish band there must be only one nominal radius which must be a maximum of 3mm. Any fundamental shape change to the concave spherical dome introducing convex spherical shaping, more than one intermediary angle or radius at the point of meeting the squish band, or any change which makes its shape outside that stated, will render the cylinder head illegal.

D3.4.18 The cylinder head and/or liner mating face(s) must remain flat. If machining or any other operation is carried out on the cylinder head and/or liner mating face(s), the mating faces must always remain flat over the full extent of their original surface.

D3.4.19 It is permitted to use Helicoil and Timesert type thread replacements to repair all stripped threads on engine fixings on the crankcase and cylinder barrel. On the spark plug thread only a Helicoil type thread repair is permitted. Any other type of repair or insert is prohibited. Such repairs must not be used to derive any benefit other than rectification of damage. In the case of the spark plug thread, no portion of the Helicoil may protrude outside of the normal thread area. The coil must be inserted to the full length of the original thread and only one continuous coil to be used per repaired thread. In all cases the size of the repaired threads must remain as standard. On the carburettor, it is permitted to repair the non-metric threads with M3 or M4 threads providing they do not perform any other function.

D3.4.20 When measuring the inlet and exhaust port timing it is clarified that the maximum contact pressure on the official TKM 0.25mm thick x 6mm parallel nominal width feeler gauge (P/N: TFG025) should be only that achieved through finger and thumb pressure on either one of the crank nuts. The dial gauge and fixture block used for this purpose must be tightened down at 13lb/ft on each of the two nuts. The nuts/studs must have threads in good condition, lubricated, and with nuts which can be easily moved by finger-only pressure at the point of being tightened.

D3.4.21 All gaskets used in or on the engine must be of original TKM supply and must be fitted in accordance with the engine fiche. Only one gasket is permitted on any engine part with the exception of the barrel to crankcase mating face where it is permitted to use up to a total of any three of the standard 3 alternative thickness TKM supplied gaskets. Use of gasket sealer/grease is permitted.

D3.4.22 It is permitted to fit additional silencing where required by Motorsport UK or local club regulations, provided that the original complete TKM equipment is still used in unmodified form.

D3.4.23 Use of an exhaust end can is mandatory and must be that provided by Tal-Ko and marked with the TKM logo. It must be fitted with the three large exhaust exit holes 180 degrees opposite to the main exhaust tailpipe exit.

D3.4.24 When taking measurement of the cylinder head volume, the cylinder head must be fitted to the engine in the manufacturer's normal manner with the standard brass head nuts & TKM sealing nut tightened to 13lb/ft and the two small cap headed bolts tightened to 8lb/ft. The nuts/studs must have threads in good condition, lubricated, and with nuts which can be easily moved by finger & thumb-only pressure at the point of being tightened. If the engine is fitted with the optional EeziStart De-Comp valve, then this must be in the fully closed position and tightened to 13lbs/ft. The digital burette must be used with light grade oil which meets the specification:- Viscosity: 61 Centistokes at 20 Degrees C which is available from Tal-Ko

The engine when measured must be as raced - e.g. with the same gaskets in position and with no carbon removed from the top of the piston, inside of the combustion chamber, etc. The engine can be hot from racing or at cold ambient temperature for measurements to be taken. Definitive sanctioned measurement must be at cold ambient temperature.
The cylinder head may be removed for inspection by an authorised Motorsport UK scrutineer before being replaced for further head volume checks if required. Greasing of top & bottom ring is not permitted and all measuring oil thoroughly removed before a further head volume check is carried out.

Method of taking head volume measurement:-
The engine must be in an upright stable position with the measuring plug in position and fully tightened down on spark plug washer face to 13lbs/ft. Rotate the engine over and lock into place with a wedge or feeler gauge placed between ignition rotor and stator with the piston as close to Top Dead Centre (TDC) as possible. Once the digital burette has been zeroed, insert the measuring oil into the engine to the permitted minimum required cc and then gently rotate the engine clockwise & anticlockwise a small amount to put the piston exactly at TDC. If the oil does not seep out of the measuring plug hole onto its top face surface, then it is legal. It is recommended that the insertion of the oil and TDC test to take no longer than 10 secs. If the oil seems to keep needing topping up, then a suspect illegal stuck top ring will need to be investigated.
CYLINDER HEAD VOLUME: Use of a Digital Burette and the official TKM measuring plug P/N 003 is the only definitive sanctioned method of measuring.

ENGINE	***ENGINE Fitted with EeziStart***	***DIGITAL BURETTE***	***GLASS BURETTE (Comparison Guide Only)***
Jnr 100cc	Jnr 100cc	Digital: 10.6cc Min	Burette: 11.0cc Min
Snr Extreme 115cc	Snr Extreme 115cc	Digital: 11.6cc Min	Burette: 12.0cc Min
TAG Jnr / Inter 100cc	N/A	Digital: 9.6cc Min	Burette: 10.0cc Min
TAG Snr 115cc	N/A	Digital: 10.6cc Min	Burette: 11.0cc Min

D3.4.25 As part of TKM's commitment to noise reduction, it is mandatory to use effective heatproof webbing or similar sleeve material wrapped around the exhaust flex to help reduce noise. Make is free.

D3.4.26 The use of purpose designed TKM fin rubbers is mandatory as a noise reduction method. All new engines are fitted with noise reducing fin rubbers as supplied by Tal-Ko. These comprise 10 special rubbers all with TKM logo and either marked H or B to indicate whether for head or barrel. Competitors must use a full set of these rubbers, which may be fitted to older engines. The use of more than 10 rubbers is allowed but not advised. Only TKM rubbers permitted. Where fins have become broken on an engine it is permitted to remove excess sections of the rubbers at this point. At post race/qualifying scrutineering, loss of one rubber will be accepted provided it is then replaced before the next race.

D3.4.27 The use of one or more TKM manufactured with TKM logo special steel cylinder head retaining nuts with hole for sealing wire is permitted, even if sealing is not required. Use of such nuts may be mandatory at championship meetings as specified in their regulations.

D3.4.28 Piston rings must at all times remain free to operate in the manner in which they were designed and supplied. It is the responsibility of the driver to ensure that the rings are not 'coked' in place with carbon or prevented from their normal 'spring' effect by other methods. The rings must be appropriate to the piston size used and have a maximum ring gap of 0.5mm when measured with the ring placed squarely 5-10mm down from the top of the cylinder bore. Only the standard unmodified earless type piston cir-clips as supplied by Tal-Ko must be used. The Extreme 115cc engine uses one piston ring, the Junior / Inter 100cc engine may use one or two piston rings. The bottom piston ring for the Junior / Inter 100cc engine can be removed for racing if required.

D3.4.29 Where specified, officially sanctioned and part numbered TKM gauges and measurement devices must always be used when checking engine measurements. In the case of any doubt or dispute, only these approved items must be used and the results taken as definitive and final. The engine and other test equipment should be

at a cold (ambient) temperature of between –5°C and +50°C. Any readings taken within this temperature span will be accepted as definitive.
D3.4.30 It is permitted to use the optional TKM manufactured with TKM logo flex ring to help increase the life of the exhaust flex.

D3.4.31 Permitted Re-bore (Extreme Specification Engines Only). It is permitted to re-bore the barrel in order to take new TKM Extreme oversize pistons 54.25 – 54.75mm. This modification may be carried out to any age engine. It is also permissible to carry out minor machining to the cylinder head to match as detailed in the latest official TKM BT82 engine fiche additions. The pistons in these Extreme engines will have only one piston ring. In all other respects normal Formula TKM rules apply.

D3.4.32 A TAG on-board starter system engine and associated equipment may be used as supplied by Tal-Ko and detailed in the official TKM BT82 engine fiche. It is clarified that when using a TAG specification engine it is mandatory to always have the full system in place as applicable and connected to enable the starter to be used to start the engine. An external hand-held starter may be used to start the engine in case of any problem, but at any time before or after a race the driver may be required to demonstrate that the starter system with its on-board battery is fully fitted and functioning. Exceptionally at a race meeting if a fault occurs which means the starter cannot be used, with agreement of a scrutineer the engine may be started externally providing that all the components of the starter, battery etc are in place. No test will then be required.

The only items which must be used on both the old and new style & replacement TAG ignition systems are:

Old Style: PVL Plug Cap, PVL HT Lead, PVL Coil, PVL Rotor, PVL Stator, PVL Relay and the PVL CDI box.

New Style: PVL Plug Cap, PVL HT Lead, PVL Ignition Module or Coil, PVL Rotor & PVL Stator and PVL Relay.

The HT Lead on replacement TAG Coil is the same as used on non-TAG coils.
A cable tie can be used to seal the plug cap to the H/T lead in the plug cap groove provided.
It is **not** permitted to use/mismatch the rotors & stators from the old 682 system with the new 683 system.
It is permitted to use/mismatch the coils, rotors & stators from the 683 system with the replacements as listed.

Various items listed as not mandatory such as Fuses & PVL wiring loom may be completely removed from the kart.

D3.4.33 When measuring and checking for the maximum permitted piston bore size in the cylinder barrel, the bore may be measured at any position within its full length where the circumference is continuous – i.e. not where there are port openings or con rod clearance cut outs. If the maximum permitted bore size is exceeded at any point then the cylinder barrel is illegal.

D3.4.34 The cylinder piston bore must be nominally perpendicular to the cylinder base and central to the cylinder liner. Out of centre and/or angled cylinder piston bores are not permitted.

D3.4.35 For the avoidance of doubt, where dimensions and tolerances are stated in the official TKM BT82 engine fiche these are for information only and it is stressed that unless specifically stated as permissible, it is NOT permitted to alter any component to the fiche dimensions.

D3.4.36 Use of the official TKM supplied EeziStart de-compressor valve is allowed across all engines except TAG in unmodified form with sealing washer in place. See official TKM BT82 Engine Fiche.

D3.4.37 On all clutched karts the on/off switches for the engine must be mounted in a clearly accessible position. The red kill switch MUST be marked as 'OFF'. A blue triangle may also be used to clearly identify to marshals.

D3.4.38 The battery for the starter MUST be mounted to the kart chassis in the correct MSUK specified position placed in a metal mounting tray and cover. Modifications can be carried out to both the mounting tray and its plastic cover to aid fitment to the kart. If the normal TKM mounting tray and cover is used it must be raced complete with the plastic TKM provided cover. The smaller TKM battery mounting tray does not need a cover. It is permissible to seal any connections to aid waterproofing as well as the repairs to broken wiring including replacement connections to suit. It is permissible to drill additional holes both in the battery mounting tray and the plastic cover for the fitment of additional security fittings such as cable ties and water proofing or other.

D3.5 Transmission.

D3.5.1 The drive must be direct, i.e., the crankshaft and rear axle are connected only by a single length of chain. No belt drive, reduction gears, etc., permitted. Engine sprocket to be 9, 10, or 11 tooth. On clutched engines 10 or 11 tooth only.

D3.5.2 Engines may be fitted with the optional Formula TKM Horstman dry clutch or 'V' clutch. If fitted these must carry the TKM markings and be used in unmodified form as manufactured or supplied by Tal-Ko.

D3.5.3 Engines fitted with a Horstman clutch must use the genuine TKM clutch safety cover in unmodified form. An effective and working ignition on/off switch must be fitted to the kart and clearly marked in the off position.

D3.5.4 On TAG engines the only permissible clutch assembly complete is the 'V' clutch as supplied by Tal-Ko with no modification and the TKM logo stamped on all of the three clutch shoe outer faces. It is not permissible to reline the clutch shoes or add substances to either the shoes or drum.

D3.6 Brakes.

D3.6.1 Brakes must be hydraulic disc brake operating on the rear wheels only – no ABS or similar systems.

D3.6.2 The brake disc must be made from cast iron or steel. Type free – may be ventilated floating, etc. The brake to consist of one calliper, with two pads. Twin master cylinders permitted. Disc carrier free. Any brake system may be used. Pads free.

D3.6.4 For the purposes of safety it is mandatory for all karts to make use of a dual connection between the brake pedal and master cylinder. The prime connection may be either solid or cable operated, with a secondary safety cable minimum 1.8mm nominal diameter set slightly looser to act as a backup in the case of failure.

D3.7 Wheels, Bearings and Tyres.

D3.7.1 The only tyres permitted are Maxxis with the word 'TKM' moulded in their sidewalls. Dry slick tyres will have green labels, wet tyres will have red with a white outline label. They must not be modified in any way including hand or machine cutting. Note a new wet tyre has been in use from 01.01.2013. The older style wet tyres with labels in just red are no longer permitted.

Tyre sizes/types as follows:

Dry – TKM	Front 10x4.50-5,	Rear 11x7.10-5
Wet – TKM	Front 10x4.50-5,	Rear 11x6.00-5

D3.7.2 Heating of tyres by any artificial method, or their treatment by any chemical substance, is prohibited.

D3.7.3 Wheels are free but must not be made of plastic type material. Wheels must be of one moulding/casting. The use of wheels which have been cut and joined to increase or reduce width is expressly prohibited. Front wheels may have a separate detachable hub. It is permitted to use wheel balance weights affixed to the wheels. Front wheel bearings must be of metal type. Ceramic not permitted.

D3.7.4 Maximum wheel width should be a nominal 122mm front and 210mm rear as measured across the inside edge of the beads. Maximum permitted width across the outer edges of the rims to be 133mm at the front and 217mm at the rear.

D3.7.5 When wet weather tyres are fitted, it is permitted for the wheels and tyres to be inside the sidepods, so long as the sidepods have closed solid ends and this will apply for both types A and B of permitted rear protection bumpers.

D3.8 General.

D3.8.1 Rule no longer applies.

D3.8.2 **Weight** (on completion of any part of the event). Driver weights subject to U17.29.6.

Junior TKM 123: min 123kg with driver. Minimum driver weight 35kg.

Junior TKM 128: min 128kg with driver. Minimum driver weight 37kg.

Junior TKM 135: min 135kg with driver. Minimum driver weight 39kg.

Junior TKM 142: min 142kg with driver. Minimum driver weight 41kg.

Junior TKM 148: min 148kg with driver. Minimum driver weight 43kg.

Senior TKM Extreme 132 & Extreme Clubman 132: min 132kg with driver. Minimum driver weight for drivers under the age of 16 is 40kg.

Senior TKM Extreme 139 & Extreme Clubman 139: min 139kg with driver. Minimum driver weight for drivers under the age of 16 is 41kg.

Senior TKM Extreme 146 & Extreme Clubman 146: min 146kg with driver. Minimum driver weight for drivers under the age of 16 is 43kg.

Senior TKM Extreme 153 & Extreme Clubman 153: min 153kg with driver. Minimum driver weight for drivers under the age of 16 is 44kg.

Senior TKM Extreme Masters: min 160kg with driver. Drivers must be aged 35 years or over, or the driver must weigh a minimum of 80kg.

D3.8.3 Plates.

U17.25 applies.

Senior TKM Extreme – red with white numbers.

Senior TKM Extreme Clubman – white plates with black numbers.

Senior TKM Extreme Masters – red with white numbers and white line across top or bottom of plate.

Junior TKM – blue with white numbers.

D3.8.4 Ages/Sizes.

Junior TKM – 12 to16 year old. A Competitor may enter the Junior Category from the calendar year of their 13th birthday, or from their 12th birthday with a National licence and, continue until 31st December in the year of their 16th birthday. As per U15.3.1. Minimum weight 35kg.

Senior TKM Extreme – The Class is open to any driver from the calendar year of their 16th birthday, subject to 3.8.2 and U15.3.1. A holder of a Kart National licence may transfer to the Senior class from their 15th birthday, subject to 3.8.2 and U15.4.1. Exceptionally, a junior age holder of an International ITE licence may transfer to the senior class at any time. Having moved into the Senior class he/she may not revert to a Junior class.

TKM Extreme Clubman – A sub class which clubs may use if they wish with the karts either on the same grid as TKM Extreme or separate. It allows a lower cost factor. All current TKM Extreme regulations apply with the following modifications:

TAG engine and any engine with CNC barrel are NOT permitted. All other TKM BT82 engines fitted with cast barrels permitted, with or without clutch.

Any type of kart chassis may be used, but must be a minimum of two years old. Driver must provide confirmation of kart age.

Where an older TKM homologated kart is being used, if it displays the TKM homologation plate it may be used with older style sidebars modified to take new style CIK bodywork, and may have front bumper modified to take approved dismountable front fairing. See rule C3.3.14 (C)

For the removal of uncertainty, it is clarified that TKM homologated karts may be upgraded to current regulations on items such as ackerman steering, brakes, stub axles, 50mm rear axle etc as per full class regulations.

Gearing may be specified by a club

Tyres will be current spec Maxxis slick and wet. Clubs may specify restrictions on tyre age and/or depth.

TKM Extreme Masters – Same as normal senior class technical regulations. Driver must be 35 years and over or weigh a minimum of 80kg in full race gear, subject to U17.29.6.

D3.8.5 Additional Notes.

- While taking part in racing or official practice a revolution counter/data logging device may be fitted provided it meets these criteria. It is permitted that this rev counter or another device may record lap times, split times, speed, revs and length of engine running time. It may be fitted with and make use of GPS technology. If such equipment is fitted with temperature sensing capability/g-force sensors these connections must not be used. The information gathered may be downloaded when the kart is off the track into any type of memory equipment including a PC. It is not permitted to transmit a signal to another receiver whilst the kart is in motion. Any sensors not permitted must be removed from the kart for racing and official practice if this equipment does not comply. The only exception to this rule applies to the fitting of officially sanctioned cameras and other recording devices and to transponders and other equipment required as part of the organiser's requirements for that race meeting. On-board still and motion cameras may be fitted subject to Motorsport UK Yearbook regulations.
- The use of "Easystart" wheels is permitted.

- Only the TKM BT82 name may be used under the heading “engine” in event programmes. No other names permitted.
- As class owners Tal-Ko reserve the right to have an engine complete with carburettor, noise box, exhaust system, etc. sealed by an Motorsport UK scrutineer for the purposes of checking that it conforms to the BT82 engine fiche and TKM rules and if required power testing on the manufacturer’s approved dynamometer. The competitor and a Motorsport UK scrutineer will be invited to be present for such strip down and any required testing, which is carried out at the risk of the competitor.
- Tal-Ko have the right to clearly and permanently mark any component which is found to be in breach of regulations and not able to be rectified.
- In the event of any dispute the regulations and fiche with updates as published within the official Formula TKM Regulations and TKM BT82 engine fiche together with any appropriate Technical Bulletins will be taken as the definitive documents. It is the responsibility of each and every competitor to obtain these regulations and fully implement them. Ignorance of any rule will not be a defence.
- Tal-Ko reserves the right to refuse to serve any trader found to be carrying out modifications not permitted in the class regulations.
- Formation laps for a rolling start must be maintained as per U7.7 at a steady pace, neither too fast nor excessively slow. For the avoidance of doubt that speed relates to engine running between 5000 and 6000rpm once karts are starting to form into grid.
- The eligibility specialist to the TKM class is Paul Klaassen. In addition, Ernie Salmon is also added as a TKM eligibility specialist scrutineer with responsibility for the TKM British Championships.

D3.8.6 Classic TKM – This is a specific fully authorised class for those taking part is historic racing. Karts must be no newer than 2006, tyres are current Maxxis TKM specification and engines must make use of original parts and not have any modifications other than those specified.
Full details of the slightly revised regulations for the class are available from F100UK.
All rules effective January 1, 2024.

A copy of the Formula TKM Regulations and Technical Guide 2024 including the official TKM BT82 engine homologation fiche is available free from Tal-Ko Racing at www.tal-ko.com.