



## Technical Regulations

### General Regulations

#### 1. Chassis

- 1.1.1. *The Chassis must have been manufactured for use with the engine class chosen. Alternatively, for all classes other than ProKart, a ThunderKart chassis, either of Mk1 or Mk2 design, may be used.*
- 1.1.2. *"Competitors may only scrutineer and compete with one chassis. If damage occurs, chassis and engines may be substituted at the discretion of the chief scrutineer."*
- 1.1.3. *"If a kart suffers a mechanical defect on the circuit which forces the driver to reduce speed, such as a chain or belt failure on a twin engine kart, then the driver may drive back to the pits. The driver must not attempt to complete the race distance."*
- 1.1.4. *"The fitting of side pods is mandatory and they must comply with current MSA side pod regulations but with the following additional provision. Side pods may be cut away on their inner, upper and lower surfaces by the minimum amount to clear an engine and its attachments. The upper and lower surfaces may be cut away up to a maximum of half the width of the surface. The use of Bigfoot nassau is permitted. Side pods should not be filled with any medium."*
- 1.1.5. *"Number plates with numbers must be fitted to the nassau panel and the rear of the kart, and be clearly visible to officials at all times. Numbers and backgrounds will not be supplied by the organisers. Number plate backgrounds to be contrasting. It is possible that Series' sponsor's identification will need to be shown at certain rounds, and the competitor is agreeing to comply with this when signing on."*
- 1.1.6. *"Competitor's sponsors names and other graphics may be applied to the kart making use of the side pods, nose cone etc. There is no restriction on these subject to the numbers being clearly visible. Tobacco advertising must be obscured if TV coverage is present and no graphics are to be offensive."*
- 1.1.7. *"An extended width rear bumper is mandatory. The bumper is to be constructed from a minimum 25 mm nominal diameter 14g magnetic steel tube. The bumper must form an extended loop of 180 mm +/- 10 mm centres with the bottom loop centre 60 mm +/- 10 mm from the ground in dry configuration. The horizontal rails must be wider than the outer chassis rails. The bumper must be supported in a minimum of two places from the chassis and be of such a construction to withstand substantial impact. In side view the bumper will be in the vertical plane. The overall width of the bumper must not exceed the rear width of the kart at any time; The measurement to be taken at the outside of the rear wheel or tyre, whichever is the greater and must cover a minimum of 50% of each rear wheel/tyre at all times. Adjustable width bumpers are not permitted. (illustration available from organisers)."*
- 1.1.8. *"The front bumper must also be of strong construction. A front fairing / spoiler of suitable construction and fixing must be attached."*
- 1.1.9. *"The type and construction of the seat is free so long as it is mounted in the originally intended position, of sound and rigid construction and securely mounted."*
- 1.1.10. *"Steering wheel type and size is free, however it must have a continuous rim. It must be made of a material, which will not constitute a danger in the event of an accident."*
- 1.1.11. *"Special modifications will be permitted to allow use of hand controls to enable disabled drivers to compete."*

#### 2. Axle

- 2.1.1. *"No differential of any type is permitted."*

- 2.1.2. "Unless two securing bolts are fitted to the hubs on the rear axle, a circlip must be fitted on each axle end to prevent accidental loss of the hub. Any hub with an overall length, excluding wheel studs, of less than 60mm must not overhang the rear axle."
- 2.1.3. "One hydraulic or mechanical brake should be fitted to the rear axle only. The brake disc must be made of metal but can be vented and drilled / slotted. A caliper with a maximum of four pistons, two on each side of the disc, may be used. Additional air ducting to the rear brake is permitted but must be securely attached."
- 2.1.4. "Gearing will be open."
- 2.1.5. "Drive is to be by chain or by belt as per the manufacturers instructions."
- 2.1.6. "Only one sprocket may be fitted to the rear axle for each engine. All chains/belts must be adequately protected at all times. The top of the clutch, the chain/belt itself, and axle sprocket and gear must be covered from above down to the centre line at the rear axle sprocket. Sprocket protectors may be used but not have additional teeth."

### 3. Wheels & Tyres

- 3.1.1. *Wheels must be of metal or alloy construction in sizes suitable for the tyres specified. They may be of one or two piece construction. Maximum wheel widths between the beads are:*
  - 3.1.1.1.1. *Front: 130mm*
  - 3.1.1.1.2. *Rear: 200mm*
- 3.1.2. *Tyres for dry and wet conditions are as follows:*
- 3.1.3. Dry
  - 3.1.3.1.1. *All Classes Maxxis HG1*
- 3.1.4. Wet
  - 3.1.4.1.1. *Open, Biland, Swiss Auto, Senior Max & ProMax – Vega W2*
  - 3.1.4.1.2. *ThunderKart, ProKart, ProExtreme, WRK – Bridgestone YDK*
  - 3.1.4.1.3. *One set of New Wet tyres allowed per race. CoC to authorise additional tyres*

### 4. Weight

- 4.1.1. "All classes except Biland, Swiss Auto, Senior Max and Open Class will run at no less than 180kgs. Senior Max, Swiss Auto & Biland will run at no less than 175Kgs. Open Class no less than 170kgs"

### ProKart Regulations

- 1. "It must be stressed that Pro Kart racing is for essentially standard Honda engines and teams should consider the following maxim at all times: Honda (UK) will admit no warranty claims on engines used in any practice or racing. Furthermore, teams should note that the term "standard" refers not only to the components used but also to the number used and the manner in which the engines are assembled. Please remember that save for the changes specifically mentioned in these regulations the engines should be completely standard, unmodified, and that all components should remain in place unless this document specifically states that you are allowed to remove them. No fins should be removed from the engine casting or internal fan, nor should any of the ventilation holes in the outer casing be covered. The dimensions of any component or combination of components must be within the service limits specified in the current Honda Workshop Manual for the relevant engine."
- 2. The only permitted modifications to the engines are:
  - 2.1.1. "Removal of governor mechanism. If completely removed, the hole in the crankcase must be sealed to prevent oil leakage."
  - 2.1.2. It should be noted that no other parts may be removed from the engine and that the counterweight fitted to the camshaft is a decompressor to aid starting and is not part of the governor mechanism.
  - 2.1.3. "Fitting of alternative valve springs from Honda GX140 engine (PN14751-ZE1-000). The inlet valve collet (PN 14771-ZE1-000) may be replaced with an exhaust valve collet (PN 14773-ZE1-000) and an exhaust valve rotator (PN 14781-ZE1-000). If this modification is performed to the inlet valve, it is permissible to additionally fit one 8mm washer between the cylinder head and the base of the valve rocker post to raise the post and ensure that the adjuster locknut sits on a full thread"
  - 2.1.4. Fitting of alternative Honda carburettor jets as follows:
    - 2.1.5. size 68 (PN 99101 -ZF5-0680)
    - 2.1.6. size 70 (PN 99101 -ZF5-0700)
    - size 72 (PN 99101 -ZF5-0720)
    - size 75 (PN 99101 -ZF5-0750)

- 2.1.7. "Use of alternative lightweight Honda flywheel, Honda Part no. 31100-ZE7-811 (This part is being made available to assist heavier drivers who wish to save weight on their kart, it may not improve the engines' performance)."
- 2.1.8. "Substitution or complete removal of the renewable paper/foam air filter, although the plastic outer cover must remain as standard and in place. Any teams that have in the past attached number plates, reflectors, etc. by drilling through this outer cover should find an alternative method of attachment and permanently seal any holes in order to comply with the regulations."
- 2.1.9. Reboring is not permitted. No sleeving or surface material change to the bore is permitted. No other metal removal from any engine component is permitted.
3. "No removal or addition of material from any part of the engine is permitted. No additives or coatings are allowed on any internal or external surface of the engine. No machining of any part by any means is allowed (this includes the use of abrasives). No polishing of the cylinder head, combustion area, inlet tract or exhaust port tract is allowed. Carbon or gasket residue removal must be achieved by use of chemical agents only, to preserve original finishes. However the lapping of the valves is permitted provided that the dimensions are within the service limits in the current Honda Workshop Manual for the relevant engine. We would not expect to see casting marks and/or imperfections removed and the original machining and casting marks must be visible on all surfaces of the engine. Only Honda gaskets must be used. No sealants are required, and none should be used. All components used should correspond to the correct engine number in the current Honda Parts Catalogue (i.e. don't "mix and match" parts from different engine types or numbers)."
4. "Separate return springs must be fitted to each carburettor and to the throttle pedal, each acting independently. A linkage may be manufactured to actuate the standard Honda throttle. This may include fitting additional return springs. "
5. Spark plugs fitted to the engines must be from the recommended list provided by Honda - please see below. NO OTHER SPARK PLUGS MAY BE USED. The plugs used must not be modified in any way whatsoever and should have a reach identical to that of the plugs listed. Resistor plugs should be used. The standard Honda resistor spark plug cap - as supplied with the engine - must be used.
6. "NGK: BPR6ES,BP6ES,BP5ES,BPR5ES"  
"Nippondenso: W20EP-U,W20EPR-U,W16EP-U,W16EPR-U"
7. "It is the teams responsibility to ensure that all plastic, rubber and nylon engine components are in good condition and operating in the manner for which they were designed."
8. The fasteners on the engines may be drilled for the purposes of lock wiring. This includes the fitting of a fuel tank cap security device - though this must not in any way increase the capacity of the standard tank.
9. Replacement of external fasteners with non-Honda fasteners is only permitted when the replacement fastener improves safety or when the standard Honda fastener is not readily available. helicoiling is acceptable providing that the helicoil and replacement bolt used are of no different size or pitch to the original and therefore offered no mechanical advantage over the original fixing.
10. However any fastener changes must not in any way affect or increase engine performance
11. The Organisers reserve the right to exchange any one or both engines with engine(s) from a batch of race prepared engines at any time prior to the commencement of racing. Should such an exchange take place then the team will only be permitted to carry out work on the loan unit with the prior permission of the organisers in order to rectify a fault. Any such work will be overseen by a scrutineer. The team's original engine(s) will be returned to them at the end of the event once it has satisfied scrutineer's inspection if required.
12. "A dry air-cooled centrifugal clutch of Noram, Horstman, Magnum, Maxtorque 1600 or 4000 series type must be used to transmit the drive. The clutch should be in standard form (as supplied), be incapable of adjustment in position and have a maximum engagement speed of no more than 2,500 rpm engine speed."

## WRK Regulations

### 1. Engine.

Twin Subaru sealed EX21 engines are to be fitted. All engines must be complete with their registration documents. These documents must match driver and engine details.

- 1.1.1. The air filter must remain in situation. If a dual element filter is used the paper can be removed the foam rubber must however remain in place
- 1.1.2. Only carburettor jets as listed for the engine in the parts manual can be used.
- 1.1.3. The tab on the slow running jet may be modified to permit adjustment to the jet.
- 1.1.4. Reboring of the engine and regrinding of the crankshaft are not permitted. Replacement of external fasteners with non-Subaru fasteners is only permitted if the replacement fastener saves weight and/or improves safety and/or if the standard Subaru fastener is not readily available. However, any

fastener changes must not compromise the safety or increase performance of the kart. The fifth cylinder head bolt, left hand exhaust stud and CAM pin retaining bolt are all drilled to enable sealing. Fasteners may be drilled and lock-wired to improve safety.

- 1.1.5. No modifications to the Subaru engine(s) are permitted except those specifically covered in these Regulations. No removal of material from, or addition of material to any part of the engine including the induction and exhaust systems, is permitted. No machining or surface treatment of any part by any means, chemical or otherwise, is permitted including the use of abrasives. The original machining and casting marks must be visible on all surfaces of the engine. The dimensions of any component or combination of components must be within the service limits specified in the current Subaru Tolerances Document. No parts other than genuine Subaru parts specified for the engine type used, are to be fitted. Valve clearance dimensions are free. In deciding if an illegal modification has been made, reference should be made to the standard engine(s) held by the MSA and to the current MSA Homologation Form for the relevant engine.
- 1.1.6. The standard Subaru exhaust must be used.
- 1.1.7. Centre Fuel Tank Pump installation is free. The pulse pump must be mechanical and fed from the crankcase, there is an M8 tapped hole already provided for this.
2. The use of all piston rings is mandatory. The rings must always be free in their grooves to function as designed. Competitors must ensure that they use appropriate engine oil so that piston rings do not become restricted by carbon.
3. A dry air cooled centrifugal clutch which cannot be adjusted in position is to be used to transmit drive with maximum engagement speed of no more than 2500 rpm engine speed. Drive is to be by 219 chain. Drive protection must be according to current MSA regulations. Chain protectors may be attached to the sprockets.
4. One mechanical/hydraulic disk brake to be fitted to the rear axle and the disc is to be made of metal only.
5. Robin Subaru, SRT, nor Whilton Mill will not accept warranty claims on engines used in any practice or racing capacity.

### **Senior/ProMax Regulations**

1. The only engines permitted in this class are the Rotax Max FR125. All engines racing in either class will have been sealed by the importer or an agent of the importer.
2. Fuel Pump location. In addition to the fuel pump mounting bracket, the fuel pump may alternatively be located on the drivers seat.

### **ThunderKart**

1. Engines must be sealed 390 Honda units as supplied by BIZ or Brown Power Engineering.
2. Jet sizes may range from 100-115, emulsion tubes must remain as specified by Biz.
3. Clutches as specified by Biz.

### **Biland & Swiss Auto**

Engines must be as supplied by the importer.

"The spirit of the Open Championship is based on the use of "as manufactured" engines and proprietary chassis and is intended to offer each driver competitive racing on equal machinery. Any drivers and entrants wishing to compete with the scrutineer and the regulations rather than their fellow competitors, should not race in these classes."

"Karts will run on unleaded fuel to which additives must not be added. The Organisers reserve the right to take fuel samples at random to ensure conformity with the regulations. No additional or enlarged, tanks may be fitted. All seals & unions must be checked regularly for leaks and replaced as necessary. For Pro Karts, it is strongly urged that the engine's integral fuel tank be removed and the engine fitted with a suitable cover. A standard floor mounted fuel tank should then be used, unmodified and this tank and its mounting must be in accordance with chassis manufacturer's instructions or homologation. The capacity of this tank must not exceed 7.5 litres for all classes except, ThunderKart 8.5liters & Senior Max / Biland 9 litres. Ballast may be added to the tank in order to maintain the maximum capacity. In this instance the kart may be fitted with a pulsed fuel pump(s), which will take a vacuum feed from either the governor rod hole or one drilled in the inlet manifold, tapped to accept a vacuum fitting. Fuel pipes must be of no more than 5.3 mm i.d. and must take a direct route to the carburettor and be safely secured. One engine may have an extra loop of fuel pipe no more than 50cm longer than the direct route and/or a return feed to the tank. One in-line fuel filter of nominal capacity per engine may be fitted. "

