

**C4.0 Group Junior – Non-Gearbox**

**C4.1 Class Rotax Mini Max**

**Affiliation** Commercial: J.A.G. Engineering and ABkC

**C4.2 Introduction.** A restricted version of the FR 125 Junior Max to give the younger driver the opportunity to race Rotax Max. The promoters reserve the right, with the agreement of the MSA, to alter the technical regulations to ensure safety of drivers, fairness of competition, economy and the wishes of competitors and changes of specifications from Rotax agreed by the MSA. Enquiries to J.A.G. Engineering, Unit 6 Mid Sussex Business Park, Folders Lane East, Ditchling, Hassocks, Sussex BN6 8SE. Tel. 01444 243112.

**C4.3 Chassis.** Any chassis conforming to MSA Yearbook regulations.

**C4.4 Engine.** The only engine permitted in this class is the Rotax FR125 JUNIOR MAX with restrictors. The Junior Max adheres to the Senior Rotax FR125 Max fiche plus extensions for the Junior including the cylinder. The cylinder is to be of non-Power Valve type. The engine is a single cylinder, liquid cooled, reed valve two stroke. All engines must be sealed between cylinder, crankcases, cylinder head and the reed valve block with an official seal to prevent modification. All engines are issued with an official identity card. It is the competitor's responsibility to ensure the numbers inscribed on the engine and seal correspond with those on the identity card at all times. Only authorised dealers will be issued with seals for use during maintenance of the engines. The identity card must be filled in and signed by an authorised dealer. The engine must be presented at scrutineering with the official class seal intact and the identity card lodged with the scrutineer. The card must be collected by the competitor at the end of the race meeting. (At club race meetings it is not compulsory for competitors to lodge the identity card with the scrutineers. The identity card must be available for inspection by the scrutineers at any time during the race meeting.)

Should a seal become damaged, loose or lost during racing it must be reported to the meeting's scrutineer before leaving parc ferme. To allow the competitor to continue racing the scrutineer may at their discretion re-seal the engine with an official MSA seal. The new seal No. Must be entered in the engine's identity card and signed by the scrutineer. The engine must be taken to an official dealer with MSA seal intact to be re-sealed with an official class seal before competing at the next race meeting.

**C4.4.1 Modifications.** Neither the engine nor any of its ancillaries may be modified in any way. "Modified" is defined as any change in form, content or function that represents a condition of difference from that originally designed. This is to include the addition and/or omission of parts and/or material from the engine package assembly unless specifically allowed within these regulations or the official MSA fiche. The adjustment of elements specifically designed for that purpose shall not be classified as modifications, i.e. carburettor and exhaust valve adjustment screws

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

The engine must be raced in standard form as manufactured and supplied by Rotax unless otherwise stated. Filing, grinding, polishing, surface treating, machining or lightening of any component is forbidden unless otherwise stated. The addition of material to any component is not allowed unless otherwise stated. All parts used in or on this engine must be of original manufacture or source as supplied by Rotax for the FR125 Max unless otherwise stated. The engine is to be used with air box, carburettor, fuel pump, radiator, wiring loom, ignition system and exhaust system as supplied by Rotax unless otherwise stated. Position and method of mounting the battery, wiring loom, exhaust system are free providing they are securely fixed to the satisfaction of the meeting's scrutineers and in accordance with MSA Yearbook regulations. Filing of crankcase to allow easy fitting of water connection is allowed. Fitting of helicoils and inserts to repair damaged threads is allowed, except for the spark plug thread in the cylinder head insert, providing such repairs are not used to derive any benefit other than rectification of damage.

Minor damage to the cylinder or crankcase may be repaired by welding but only to restore the component to the original specification.

The use of thermal barrier coatings/ceramic coatings on or in the engine or exhaust system is not allowed. Replacement connectors to repair wiring loom are permitted. Repairs to starter motor are also allowed.

**C4.4.1.1 Exhaust and Inlet Throttle Restrictors.** Exhaust restrictor must be in place at all times. Restrictor must be as supplied by J.A.G. and comply with the official fiche, no modifications allowed. Exhaust flange restrictor, 20.3mm maximum round bore, all exhaust gases must pass through this restrictor.

Inlet throttle restrictor must be in place at all times. Restrictor must be as supplied by J.A.G. and comply with the official fiche, no modifications allowed.

**C4.4.2 Carburettor.** Dell'orto VHSB 34 QD or QS.

All parts of the carburettor including the body are to be unmodified and run as supplied by Rotax. The carburettor must have VHSB 34 (cast in body) QD or QS (stamped on body). All parts must comply with the official fiche. The only adjustments allowed are the main jet, external air screw, throttle stop adjustment screw, and needle position on the five grooves provided. Needle jet atomiser FN 266. Choke jet 60. Idle jet 30, idle jet emulsion tube 30. Needle K27 or K98. Float needle valve 150. Slide 40. Floats 5.2gr. Atomiser Type 2. Alternative idle jet 60, idle jet emulsion tube 60, and 3.6gr floats may be used. Idle jets, idle jet emulsion tubes and floats may not be mixed and only used in one of the two following combinations:- Combination 1: Idle jet 30, idle jet emulsion tube 30, floats 5.2gr; Combination 2: idle jet 60, idle jet emulsion tube 60, floats 3.6gr. The venturi must have 34 cast and 12.5 or 8.5 stamped on the top of the venturi. Throttle cable and adjusters are free. It is permitted to use a single length of vent tube looped across the two air vents of the carburettor with a hole or slot cut in the side of the vent tube at the top of the loop.

FLOAT LEVER ARM HEIGHT: Using the ROTAX gauge (Part No:277 400), the float arms must both fit between the gauge slot without touching. The carburettor must be upside down on a horizontal flat surface. The gauge must sit on the metal body of the carburettor without gasket.

**C4.4.3 Fuel Pump.** Only Mikuni – Fuel Pump DF 44-210 may be used. The fuel pump must be fitted to the bottom or side of the standard air box bracket. Only a single length of pulse tube from crankcase connector to fuel pump may be used. Only a single length of fuel line from fuel pump to carburettor may be used. It is permitted to use an in-line fuel filter as supplied by Rotax between the fuel tank and fuel pump. An Internal fuel tank filter is also permitted. No restrictors, fuel returns or additional reservoirs are permitted.

**C4.4.4 Intake Silencer.** Only Type 2 may be used.

The Intake Silencer/Airbox must be used unmodified as supplied by Rotax for the FR125 Max engine with its filter and all component parts including support bracket in place.

The two halves of the airbox must be securely screwed together using 4 M6 screws. All 4 screws must be sufficiently tightened to securely clamp the two halves of the airbox together.

Intake silencer tube and airbox-to-carburettor socket must be marked with "ROTAX".

In all conditions the air box MUST be positioned with inlet trumpets to the bottom of the box. The air box must be securely fitted in a manner to prevent rotation.

**C4.4.5 Exhaust System.** Only Type B or EVO exhaust may be used. The exhaust system and silencer may not be modified in any way except for the pop rivets securing the silencer end plate may be replaced with screws. The use of a jubilee clip to secure the end plate pop rivets or screws is allowed. It is permitted to paint the exhaust system with black paint. The use of any other coating or plating is not allowed. It is permitted to make minor repairs by welding or brazing to the exhaust system providing there are no alterations to the original dimensions.

EVO exhaust system with separate silencer with 90° elbow outlet. EVO silencer must use perforated silencer tube and end plate with 90° elbow outlet. Gasket ring must be fitted between exhaust system and silencer. Type B exhaust system must use perforated silencer tube and end plate with straight outlet.

**C4.4.6 Radiator.** The radiator must be fitted to the right hand side of the engine using standard hoses and connections as supplied by Rotax. Engines using the thermostat cooling system must use the system in its entirety which comprises of thermostat head cover, radiator, radiator cap, radiator hoses, steel crankcase water hose connecting tube and radiator bracket. It is permitted to use the thermostat cooling system with or without the thermostat in place. The use of alternative hose clips and screw fixings are permitted. Blanking of the radiator is free providing it does not necessitate the modification of the original components other than simple attachment. Minor repairs to the radiator are allowed.

**C4.4.7 Ignition Unit.** DENSO digital battery ignition, variable timing with no adjustment. Ignition coil must have "129000-" and "DENSO" moulded on the case. The ignition coil must have three pin connection. The ignition coil must be mounted by means of two original rubber mounting blocks or equivalent to the gearbox cover. In the case of chassis component interference with the original mounting position it is permitted to relocate the ignition coil by the use of an extension bracket. The extension bracket must be attached to the original gearbox cover mounting holes. The minimum length of HT lead permitted is 210 mm from outlet of cable at ignition coil to outlet of cable at spark plug connector (= the visible length of wire). **Spark plug cap must be marked with "NGK TB05EMA" or alternative red rubber version marked "NGK", as described on the official MSA fiche.** Ignition switch can be either On-Off type or Automatic fuse type. Any make of lead acid battery is permitted provided it is of the same specification as supplied by Rotax for the FR125MAX 12v/6.5Ah, 12V/7.2Ah or 12v/9Ah. FIAMM-GS type FG20651, FG20722, FGHL20722, FGH20902, YUASA YT7B-BS and ROTAX BATTERY FX7-12B. ONLY the ROTAX lithium iron phosphate battery RX7-12L or RX-12B may be used as an alternative to lead acid batteries. The ignition pick up must be marked with the numbers 029600-0710, followed by a variable production code on the 2nd line.

**C4.4.8 Spark Plug.** The only spark plugs permitted are as listed and must be unmodified with sealing washer in place. The list of spark plugs is as follows:

Denso IW24, IW27, IW29, IW31

NGK BR8 EG, BR9 EG, BR10 EG, B8 EG, B9 EG, B10 EG, B8 EGV, B9 EGV, B10 EGV, BR8 EIX, BR9 EIX, BR10 EIX, GR9D1-8, GR8D1-8.

Other makes/types may be added to this list by J.A.G.; details will be published in official bulletin

**C4.5 Transmission.** Direct from the engine to the rear axle via a single length of chain. The clutch must be as supplied by Rotax for the FR125 MAX. The internal running surface of the clutch must remain dry and free of grease or lubricant or any additional substance. The engine clutch must be triggered at 4000 rpm maximum and make the kart and Driver move forward. The clutch must be in direct drive (and 100% engaged) at 6,500 rpm. See U18.8. A bar test may also be used to test clutch engagement, parameters to be advised.

All sprockets must use a 15 x 19 x 17 needle cage bearing and O-ring seal except in the case of an 11 tooth sprocket. An 11 tooth sprocket must be fitted with a plain bearing with or without an O-ring seal.

**C4.6 Brakes.** Hydraulic disc brake operating on rear wheels only.

**C4.7 Tyres.** Dry: MOJO D1 marked 'CIK-H' or 'CIK-F-O' or 'CIK-F-Option', all with 'YELLOW' barcode  
10.0 x 4.50-5 front. 11.0 x 7.10-5 rear.

Wet: MOJO W2 marked 'CIK' with 'YELLOW' barcode  
10.0 x 4.50-5 front. 11.0 x 6.00-5 rear

Tyres must be fitted to run in the correct direction of rotation, as indicated by the arrow on the sidewall of the tyre.

**C4.8 General.** An ignition kill switch must be fitted and must be identified with a blue triangle to assist marshals in the event of an incident.

**C4.8.1 Retail Price.** Not applicable.

**C4.8.2 Non-Technical Items.** The use of alternative fasteners, washers, hose clips, fuel and pulse line is allowed unless otherwise specified. The use of additional and/or alternative earth straps is allowed. The use of additional air box support brackets, radiator support brackets, coil-mounting brackets, chain and clutch guards is allowed providing the fitting of these does not necessitate modification of the original components.

**C4.8.3 Weight.** Minimum of 135kg including driver at all times. Minimum driver weight as per U17.29.6 is 39kg.

**C4.8.4 Number Plates.** Yellow with black numbers. U17.27 applies.

**C4.8.5 Age.** Year of 12th birthday to 31st December in the year of 15th birthday. As per U15.2.

**C4.9 Data Logging.** Data logging is permitted, data logging systems with or without memory may be used. Global Navigation Satellite System reception is permitted. It is only permitted to take readings of engine rpm, engine water temperature, speed of 1 wheel, an X/Y accelerometer, lap times and split lap times. The engine water temperature sensor may only be fitted in the position provided in the cylinder head cover for this attachment. The rpm, may only be recorded via a sensor on the HT lead to sense spark plug pulses. The HT lead must remain a single length from ignition coil to spark plug cap. The fitting of these sensors is only permitted providing there is no modification to the original engine components.