

**ROTAX**



**Club2000**

## 2024 Class Rules and Regulations: ROTAX- Senior/ 177

**SR1 Chassis.** Any chassis conforming to Motorsport UK Yearbook regulations.

**SR2 Engine.** The only engine permitted in this class is the Rotax FR125 MAX. This 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 seals must be crimped with the official Rotax crimping tool part no. 276 110. Each end of the sealing wire must only pass through the seal once.

All engines must be sealed between cylinder and crankcases 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 Motorsport UK seal. The new seal No. Must be entered in the engine's identity card and signed by the scrutineer, plus their licence number. The engine must be taken to an official dealer with Motorsport UK seal intact to be re-sealed with an official class seal before competing at the next race meeting.

**SR3 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 Motorsport UK 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 except where expressly allowed. The engine is to be used with air box, carburettor, fuel pump, radiator, wiring loom, ignition system and exhaust system as supplied by Rotax for the FR125 Max unless otherwise stated. Position and method of mounting the battery, wiring loom and exhaust system are free unless otherwise stated providing they are securely fixed to the satisfaction of the meeting's scrutineers and in accordance with Motorsport UK 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.

**SR4 Carburettor.** Dell 'Orto VHSB 34 QD, QS or XS.

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, QS or XS (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.

QD and QS carburettor: 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. XS carburettor: Needle jet DP267. Choke jet 60. Idle jet 60, idle jet emulsion tube 45. Needle K57. Float needle valve 150. Slide 45. Floats 4.0gr. The venturi insert must have 12.5 stamped on the top. 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.

**SR5 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. An in-line fuel filter as supplied by Rotax must be used between the fuel tank and fuel pump. An Internal fuel tank filter is also permitted. No restrictors, fuel returns or additional reservoirs are permitted.

**SR6 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.

**SR7 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 addition of brackets to allow easy fitting. 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. These modifications are allowed providing there is no benefit in performance. 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 braising 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.

It is permitted to weld/braze a socket (at a distance of 50-80mm from the ball joint) on the top of the exhaust system for measuring the exhaust gas temperature.

**SR8 Exhaust valve.** Pneumatic exhaust valve must only be used in conjunction with the Denso ignition system. The EVO electronic exhaust valve must only be used in conjunction with the EVO Dell'orto ignition system.

**SR9 Exhaust valve protection plate.** In accordance with the official fiche.

**SR10 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.

**SR11 Ignition Unit.** Digital battery ignition system. Variable ignition timing. No adjustments possible. As supplied by Rotax. 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" or "ROTAX", as described on the official Motorsport UK 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 or YT7B and ROTAX BATTERY FX7-12B. ONLY the ROTAX lithium iron phosphate battery RX7-12L, RX-12B or LiFePO<sub>4</sub>, or Rotax lithium battery 12V/4Ah 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.

EVO Dell 'Orto ignition system: Ignition coil with separate ECU. The minimum length of HT lead permitted is 210mm 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 Motorsport UK fiche. Engines using the EVO Dell 'Orto ignition system must use the system in its entirety which comprises of ignition coil, ECU, mounting brackets, wiring loom, battery clamp (battery box) and all its components as described in the Motorsport UK fiche. Battery clamp (battery box) must be mounted on the left side of the chassis, next to the seat. Only YUASA YT7B-BS (with and without Rotax branding) or ROTAX RX7-12B, RX7-12L or LiFePO<sub>4</sub> (lithium-ion phosphate type) may be used with EVO Dell 'Orto ignition system.

**SR12 Spark Plug.** The only spark plugs permitted are as listed below and must be unmodified with sealing washer in place:

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,

NGK GR8D1, NGK GR9D1- as per 2024 regulations

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

**SR13 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 and an O-ring seal.

**SR14 Brakes.** Hydraulic disc brake operating on rear wheels only.

**SR15 Tyres.** Dry: MOJO D5 'CIK-Prime' with barcode 10.0 x 4.50-5 front. 11.0 x 7.10-5 rear.  
Wet: MOJO W5 'CIK Rain' with barcode 10 x 4.50-5 front. 11 x 6.00-5 rear

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

**SR16 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.

**SR17 Weight.** Minimum of 162kg including driver at all times. Minimum driver weight for any driver under the age of 16 as per U15.4.1 is 52kg.

**SR18 Number Plates.** Blue with white numbers. U17.27 applies. **E2.8.3 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.

**SR19 Age.** The Class is open to any driver from the year that he/she achieves their 16th birthday, subject to 1.8.2 and U15.4.1. A holder of a Kart National licence may transfer to this Class from their 15th birthday, subject to 1.8.2 and U15.4.1. Exceptionally a holder of an International ITE kart licence may transfer to this Class at any time (U15.4). Having moved into a Motorsport UK Senior Class he/she may not revert to a Junior Class.

**SR20 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, exhaust gas 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.

**SR21 ROTAX SENIOR 177**

Minimum weight limit of 177kg including driver at all times. The driver must, in full racing equipment, weigh a minimum of 80kg at all times, weighed in accordance with U17.29.6. In all other respects the class must follow Formula Rotax 125 Max regulations.

**SR22 Number Plates.** Green plates with white numbers. U17.27 applies.

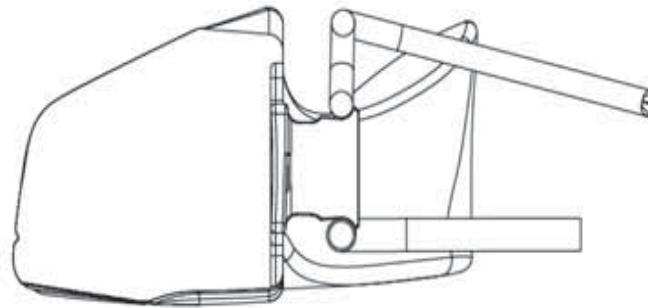
Please use the links below for Rotax Fiches and information about Rotax Evo.

[www.motorsportuk.org/resource-centre/](http://www.motorsportuk.org/resource-centre/)

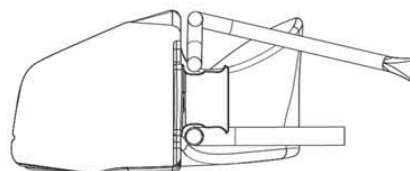
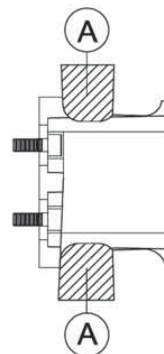
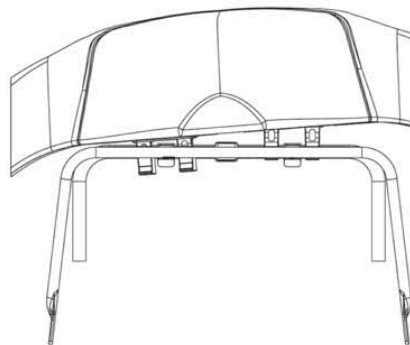
[http://jagrotax.co.uk/product-range/rotax\\_engine\\_range/](http://jagrotax.co.uk/product-range/rotax_engine_range/)

Correct position

<https://jagrotax.co.uk/rotax-technical-regulations-now-available-to-download/> - from 1/09/2023



Unacceptable position - if any part of the front bumper tubes is in an area marked 'A'



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**Quote:** *"Unless it states that you can do it.....Then you cannot!"*

29/01/2024