

- 1.0 Group:** Senior Gearbox
1.1 Class: Formula Rotax 125 Max DD2
Affiliation: Commercial: J.A.G. Engineering

1.2 Introduction: The Formula Rotax Max 125 DD2 (previously known as RM-1) class endeavours to provide an introduction to gearbox karting with the benefit of a controlled budget. The use of exotic parts and materials is restricted, the chassis is limited to those approved by BRP-Rotax. The engine and gearbox may only be used in their original standard form; the engine shall be sealed to prevent any modifications being made. It is expected that the class will continue to evolve during its life and the promoters reserve the right to alter the technical regulations at short notice to ensure safety of drivers, fairness of competition and the wishes of competitors. Enquiries should be directed to J.A.G. Engineering, 1 Windsor Business Units, Wealden Business Park, Crowborough, East Sussex TN6 2JJ, Tel: 01892 611805.

1.3 Chassis: The only chassis permitted for use in this class are those approved by BRP-Rotax for this class and which will conform to CIK KZ1 chassis requirements and MSA regulations. The kart must be raced complete with CIK homologated crash-tested bodywork. Where DD2 karts are raced independently of other classes the Max DD2 rear bumper system (Rear Tire Protection System) may be used as supplied. In all other race grid combinations the MSA specification rear bumper or a homologated CIK rear protection system must be used. Width adjustment of the DD2 bumper rear rollers only is permitted provided that these elements do not project outside the width of the rear wheel and tyre. The use of composite materials is not permitted except for the seat and floor tray. A list of approved chassis can be found on www.maxchallenge-rotax.com.

1.4 Engine: The only engine permitted in this class is the Rotax 125 Max DD2. This engine is a single cylinder, liquid cooled, reed valve, 125cc 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 that 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 when requested the identity card lodged with the event 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 competitor's 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 his discretion re-seal the engine with an official MSA seal. The new seal number 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.

1.4.1 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 by BRP-Rotax. 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 BRP-Rotax for the 125 Max DD2 unless otherwise stated. The engine is to be used with airbox, carburettor, fuel pump, radiator, wiring loom, ignition system (Denso) and exhaust system as supplied by BRP-Rotax unless otherwise stated. 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. The use of thermal barrier coatings/ceramic coatings on or in the engine or exhaust system is not allowed.

1.4.2 Carburettor: Dell'orto VHSB 34 QS

All parts of the carburettor including the body are to be unmodified and run as supplied by BRP-Rotax. The carburettor must have VHSB 34 (cast in body) QS (stamped on body). 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 60, idle jet emulsion tube 60. Needle K98 (Rotax Part No 261191). Float needle valve 150. Slide 40. Floats 3.6gr. Atomiser Type 2. The venturi must have 34 cast and 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.

1.4.3 Fuel Pump: Fuel Pump Part No.684200 or Part No.994482 must be used as supplied by Rotax. The fuel pump must be fitted by means of two original rubber mounting blocks or equivalent to the chassis or engine. Centre line of the fuel pump must not be higher than the centre line of the carburettor. 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 BRP-Rotax (Rotax part no.274 160) between the fuel tank and fuel pump. No restrictors, fuel returns or additional reservoirs are permitted.

1.4.4 Intake Silencer: The air box supplied with the engine must be unmodified & used with its filter in place.

1.4.5 Exhaust System: 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. For measuring exhaust gas temperature, it is permitted to weld a socket for the sensor on the top of the exhaust, 50mm from the ball joint. 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.

1.4.6 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 4 or 6 pin connection. The ignition coil must be mounted by means of two original rubber mounting blocks to the gearbox crank cases. Spark plug cap must be marked with "NGK T05EMA".

1.4.7 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, IW34.

Champion QN84, QN86.

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.

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

1.4.8 Cooling system: The name ROTAX must be stamped on the top of the radiator. The radiator must be mounted on the left side of the kart. The highest point of the radiator with cap must not be higher than 400mm above the main chassis rail. It is permitted to remove the thermostat from the cylinder head cover. The use of alternative hose clips is 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.

1.5 Transmission: No modifications are permitted. Two forward operative gears.

Original primary drive gears of the following ratio options must be used. A specific primary gear ratio may be specified in event supplementary regulations.

Drive Gear	Driven Gear	Drive Gear	Driven Gear
32	65	36	61
33	64	37	60
34	63	38	59
35	62		

Primary Shaft: 1st Gear – 19 teeth, 2nd Gear – 24 teeth.

Idle Gear: 1st Gear – 81 teeth, 2nd Gear – 77 teeth.

The clutch must engage at a maximum engine speed of 4000 rpm.

1.5.1 Final drive: Power shall be transmitted to the rear axle by internal gear drive. The drive and driven sprockets must remain as supplied by BRP-Rotax.

1.5.2 Rear Axle: The only permissible rear axle diameter is 40mm, wall thickness in accordance with CIK regulations.

1.6 Brakes: Four wheel simultaneous brake systems only. Brake systems must be CIK homologated and conform to MSA regulations.

1.7 Tyres: Dry: MOJO D2 4.5/10-5 front, 7.1/11.0-5 rear

Wet: MOJO W2 4.5/10.0-5 front, 6.0/11.0-5 rear

1.7.1 Wheels: Free, to CIK and MSA regulations.

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

1.8.1 Weight: Minimum of 175 kg including driver at all times.

1.8.2 Number Plates: White plates with Red numbers, U17.27 applies.

1.8.3 Age: The class is open to any driver aged 16 or over on short or long circuits. On short circuit a junior may transfer to the class at any time during the year that he or she attains their sixteenth birthday, provided they hold a minimum of a National A licence.

1.9 Non-Technical Items: The use of alternative fasteners, washers and hose clips are allowed unless otherwise specified. The use of additional and alternative earth straps are allowed. Replacement connectors are allowed for repairs to the wiring loom. Repairs to the starter motor are allowed.

1.10 Data acquisition: Any data acquisition device for recording and displaying of any data is permitted.

1.11 Component Eligibility: Unless permitted by these regulations all engine and transmission components shall be as manufactured and supplied by BRP-Rotax for the Max DD2 without any modification whatsoever. In order to establish compliance reference may be made to the technical specification issued by BRP-Rotax for the 125 Max DD2 contained within the Rotax Mojo Max Challenge Technical Regulations 2010.

Approved by MSA 28.01.10