



الإنزله RACEWAY

UAE ROTAX MAX CHALLENGE 2014-15



Organised by **AL AIN RACEWAY KART CLUB**

In Association With



SERIES TECHNICAL REGULATIONS VERSION 01.10.14

REGULATIONS

The final text of these Technical Regulations shall be the English version, which will be used, should any dispute arise as to their interpretation. Headings in this document are for ease of reference only and do not form part of the regulations.

1 – CATEGORIES

Karts used in the UAE RMC Championship are divided into the following groups:

- ROTAX 125 Micro MAX * (cylinder capacity 125 cc)
- ROTAX 125 Mini MAX * (cylinder capacity 125 cc)
- ROTAX 125 Junior MAX (cylinder capacity 125 cc)
- ROTAX 125 MAX (cylinder capacity 125 cc)
- ROTAX 125 MAX DD2/MASTERS (cylinder capacity 125 cc, 2-speed)

* For ROTAX 125 Mini MAX and 125 Micro MAX please also see Appendix

2 – AMOUNT OF EQUIPMENT

For each race event (from non-qualifying practice to the Final), the maximum amount of equipment is:

- 1 chassis
- 1 sets of dry tyres (total 2 front tyres plus 2 rear tyres)
- 2 engines

3 – KART

3.1 Chassis

For UAE RMC Championship any CIK homologated chassis (according to Article 2.3 of the CIK technical Regulations) is allowed, subject to specific class criteria below.

Please note that chassis' produced by Intrepid Driver Program are NOT permitted for use, with the exceptions of 'Rocket DD2' chassis numbers 0028-0032 and 'Sirius' chassis number 0045.



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125 Micro MAX

Wheel base: min 850mm, max 950mm (± 5 mm)
 Diameter of main tubes 28mm, round tubing only
 Maximum overall width 1200mm
 Eccentrics for the stub axles are allowed
 No front wheel hubs permitted
 Rear axle: 25mm solid or 30mm hollow, minimum wall thickness according to CIK
 Brake system must work on rear wheels only and have a valid CIK-FIA homologation
 Front rims with tyres mounted: maximum 135mm, minimum 125mm
 Rear rims with tyres mounted: maximum 150mm, minimum 140mm

125 Mini MAX

Wheel base: 950mm (± 5 mm)
 Diameter of main tubes 28mm, round tubing only
 Maximum overall width 1200mm
 No front wheel hubs permitted
 Rear axle: 25mm solid or 30mm hollow, minimum wall thickness according to CIK
 Brake system must work on rear wheels only and have a valid CIK-FIA homologation
 Front rims with tyres mounted: maximum 135mm, minimum 125mm
 Rear rims with tyres mounted: maximum 150mm, minimum 140mm

125 Junior MAX and 125 MAX classes

Maximum diameter of chassis tubing = 32 mm, round tubing only
 Maximum diameter of rear axle = 50 mm, minimum wall thickness according to CIK
 Any brake system must have a valid CIK-FIA homologation
 Front brakes are not allowed in the 125 MAX Junior MAX class
 Front brakes are allowed in 125 MAX class. **Please note that front brakes will not be permitted from the 2015-16 season onwards.**

125 MAX DD2 and DD2 Master classes

Chassis must be designed according to CIK-FIA rules for shifter classes (front and rear brakes mandatory).
 Any brake system must have a valid CIK-FIA homologation.
 ROTAX Rear Tyre Protection System is mandatory to be used. Either 2 or 3 tube version (third tube can be mounted above or below the 2 main tubes). No part shall be added or removed from original content. Only orange or red original ROTAX tyre protection rollers are allowed to be used.

3.2 Bodywork

In accordance with CIK-FIA regulations

4 – TYRES

The permitted tyres for each class are detailed below.
 Strictly no modifications or tyre treatment are allowed (max threshold value 4 ppm).
 The marked direction of rotation must be adhered to at all times.

4.1 Dry tyres:

125 Micro MAX	MOJO D1	Front 4.5 x 10.0 - 5	Rear 4.5 x 10.0 - 5
125 Mini MAX	MOJO D1	Front 4.5 x 10.0 - 5	Rear 4.5 x 10.0 - 5
125 Junior MAX	MOJO D1	Front 4.5 x 10.0 - 5	Rear 7.1 x 11.0 - 5
125 MAX	MOJO D2	Front 4.5 x 10.0 - 5	Rear 7.1 x 11.0 - 5
125 MAX DD2/Master	MOJO D3	Front 4.5 x 10.0 - 5	Rear 7.1 x 11.0 - 5

4.2 Wet tyres:

All classes N/A

5 – DATA ACQUISITION

This system, with or without a memory, may permit only (i) the reading/recording of the engine revs (by induction on the sparkplug HT cable), (ii) two indications of temperature, (iii) the speed of one wheel, (iv) X/Y acceleration, (v) lap times and (vi) position (via GPS). Connection of this system to the original ROTAX battery is allowed).

6 – COMPOSITE MATERIALS

Composite materials (carbon fibre, etc.) are banned except for the seat, floor tray and brake disc. Alloys from different metals are not considered composite materials.

7 – SAFETY EQUIPMENT

Race suit, helmet, kart boots, gloves and other items of driver protection must comply with Article 3 of the CIK Technical Regulations (see also UAE RMC Sporting Regulations 2014-15).

8 – PETROL/OIL

Petrol: unleaded commercial quality from petrol station, 95-98 octane.

Oil: XPS-KartTec 2-stroke (CIK homologation no. 112340/02, 112305/01, 112376/01).

9 – ENGINES

9.1 Stickers:

No sponsor stickers, badges, etc. (except ROTAX, MOJO, XPS, Al Ain Raceway and UAE RMC) are allowed on the engine or any of its accessories.

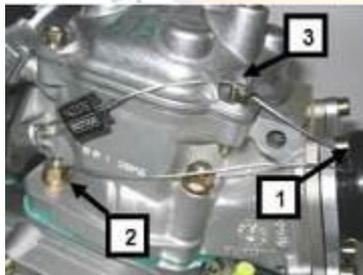
9.2 Technical Specification:

Only engines which have been checked and sealed by Al Ain Raceway (UAE ROTAX Distributor) or one of their official authorised Service Centres are allowed to be used.

By sealing an engine Al Ain Raceway (and their Service Centres) take over the responsibility for the conformity of the engine according to the valid Technical Specification. A brand new engine is always checked according to the Technical Specification before sealing.

The engines must be sealed with specific ROTAX engine seals (black anodised aluminium seal with "ROTAX" logo and 6 digit serial number and bar code - see right picture).

ONLY SEALS WITH BARCODE ARE LEGAL TO BE USED!



By means of the steel cable the engine must be sealed on one allen screw of the intake flange (1), one stud screw of cylinder (2) and one allen screw of the cylinder head cover (3) - see left picture.

It is not allowed to pass the end of the sealing wire through the seal a second time (only as in picture).

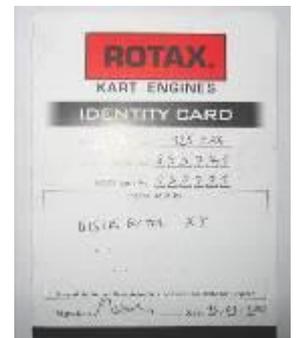
After sealing the engine the seal thread must be squeezed using ROTAX calliper 276110 (above picture).

Upon every new sealing of an engine Al Ain Raceway (or their Service Centres) is responsible for the following amendments of the Engine Identity Card which belongs to the owner of the engine:

- Serial no. of the engine
- Serial no. of the engine seal
- Stamp and signature of the Company to be able to detect at Scrutineering which authority has checked and sealed the engine.

At Scrutineering the driver must present:

- the engine(s) with undamaged engine seal(s)
- the Engine Identity Card(s) showing the matching engine serial no.(s), the matching engine seal no.(s) and the stamp(s) and signature(s) of the authority that has checked and sealed the engine(s).



The sealing of engines helps to reduce the times for Scrutineering at races as during the race event only the accessories (carburettor, exhaust, radiator.....) need to be checked.

Of course, Scrutineers can request to open and re-check an engine according to the Technical Specification before or after a race or in case of a protest. If an engine seal has been broken (for whatever reason), the engine must be checked completely for compliance according to the Technical Specification. Re-sealing may only then be carried out at the discretion of Al Ain Raceway. If Al Ain Raceway suspects that an engine has been tampered with in any way, that engine will be excluded from competition and will not be resealed under any circumstances.

It is the responsibility of the competitor that all components outside the seal are in line with the Technical Regulations.

9.3 Modification:

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 rules. The adjustment of elements specifically designed for that purpose shall not be classified as modifications, i.e. carburettor and exhaust valve adjustment screws.

The repair of a thread on the crankcase (max one per engine) or cylinder using a 'heli-coil' or similar is allowed (except threads of the pick-up fixation). Exception: the threads located under the crankcase to fix the crankcase to the engine mount may be repaired as needed.

Only genuine ROTAX components that are specifically designed and supplied for the 125 Micro MAX, 125 Mini MAX, 125 Junior MAX, 125 MAX and 125 MAX DD2 engine are legal, unless otherwise specified.

ANYTHING WHICH IS NOT EXPRESSLY ALLOWED IN THE UAE RMC TECHNICAL REGULATIONS IS FORBIDDEN.

9.4 Internal Additions:

No additional material may be added except in the case of engine repairs and shall only restore the engine or components to original specifications.

The use of thermal barrier coatings/ceramic coatings on or in the engine and on or in the exhaust system is prohibited.

The use of anti-friction coatings in or on the engine/engine components is prohibited. Customising the cylinder head cover by painting is prohibited.

9.5 Legal Additions:

Chain guard, engine mount, temperature gauge and tachometer/hour meter, inline fuel filter, catch-can mounting brackets and supplemental ignition coil mounting brackets, within the limits specified in these regulations.

Non-tech items:

Non-original fasteners, circlips, washers, throttle cable housing, fuel and pulse line (type and size) as well as lengths of coolant hose are allowed unless otherwise specified.

Note:

When taking any dimensional reading of the following technical regulations, in the order of accuracy of 0.1 mm (or even more precise), the temperature of the part must be between +10°C and +30°C.

To avoid excessive noise and exhaust emissions revving the engine in the servicing park is not permitted (except in the case of a short function test).

It is the responsibility of the competitor to check his/her equipment (all components outside the engine seal and mentioned below), to ensure that his/her equipment is in line with all technical specifications below!

10 - TECHNICAL SPECIFICATION (WITHIN ENGINE SEAL) FOR ROTAX KART ENGINES 125 JUNIOR MAX (15 kW) AND 125 MAX (21 kW)

Please note that for engine configuration 125 Micro MAX and 125 Mini MAX, the technical specification of 125 Junior MAX is valid for anything unspecified in the Appendix.

10.1 Squish Gap

The squish gap must be measured with a certified slide gauge and by using a 2 mm tin wire. The crankshaft must be turned by hand slowly over TDC (top dead centre) to squeeze the tin wire.

The squish gap must be measured on the left and right side in the direction of the piston pin. The average value of the two measurements counts.

Recommended 2mm tin wire (580 130)

10.1.1 125 Junior MAX 1.20 - 1.80 mm

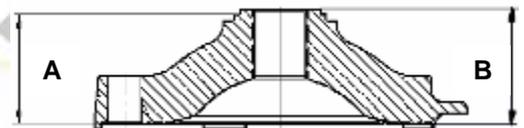
10.1.2 125 MAX 1.00 - 1.50 mm

10.2 Combustion Chamber Insert

10.2.1 Cast identification code must be "223 389," "223 389 1," "223 389 2," "223 389 2/1" or "223 389 2/2" (see picture right)

10.2.2 Cast wording "ROTAX" and/or "MADE IN AUSTRIA" must be shown (see picture right)

10.2.3 Heights of combustion chamber insert must be 27.55 mm with a tolerance of +0.0/-0.1 mm (A) and 28.80 mm with a tolerance of +/- 0.2 mm (B)



10.2.4 The profile of the combustion chamber insert must be checked with a template (ROTAX part no. 277 390). The crack of light between the template and the profile of the combustion chamber insert must be the same over the whole profile.

NOTE: This check is just for reference. In case of doubt detailed measurements must be performed to define conformity or non-conformity.



10.3 Piston with ring assembly

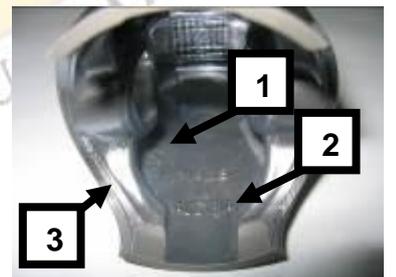
10.3.1 Original, coated or uncoated, aluminium, cast piston with one piston ring. The piston has to show on the inside the cast wording "ELKO" (1) and "MADE IN AUSTRIA" (2).

10.3.2 Machined areas are: top end of piston, outside diameter, groove for the piston ring, bore for the piston pin, inside diameter at bottom end of piston and some pre-existing factory removal (3) of flashing at the cut out of the piston skirt. All other surfaces are not machined and have cast surface.

10.3.3 Original, magnetic, rectangular piston ring.

Ring height: 0.98 +/- 0.02 mm

Piston ring is marked either with "ROTAX 215 547" or "ROTAX 215 548".



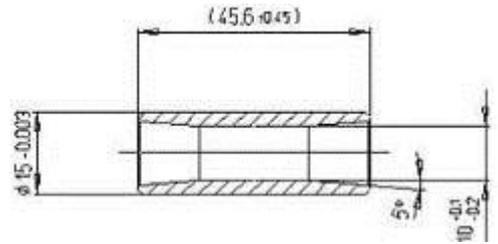
10.3.4 "Window" type piston as delivered in the early days of production is no longer legal to be used.

10.3.5 Any mechanical treatment or overwork is forbidden. Changing the original surface is illegal (e.g. removal of carbon deposits). Cleaning without disturbing the original surface is allowed.

10.4 Gudgeon pin

10.4.1 Gudgeon pin is made out of magnetic steel.

10.4.2 Dimensions must be according to the drawing.



10.4.3 The minimum weight of the gudgeon pin must not be lower than 32.10g

10.5 Cylinder

10.5.1 Light-alloy-cylinder with GILNISIL-plating. Any re-plating of cylinder is not allowed.

10.5.2 Cylinder with one main exhaust port.

10.5.3 Maximum bore of cylinder = 54.035mm (measured 10mm above exhaust port)

10.5.4 Cylinder has to be marked with the "ROTAX" logo (see pictures below).

10.5.5.1 125 Junior MAX, 125 Mini MAX and 125 Micro MAX

Cylinder without pneumatic timed exhaust valve. Cylinder must be marked either with identification code 223 999, 223 998 or 223 994.



10.5.5.2 125 MAX

Cylinder with pneumatic timed exhaust valve. Cylinder must be marked either with identification code 223 997, 223 996 or 223 993.



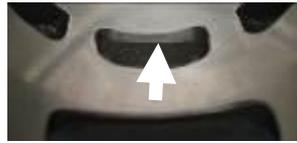
10.5.6 Height of cylinder must be 87mm $-0.05/+0.1$ mm (see picture right).



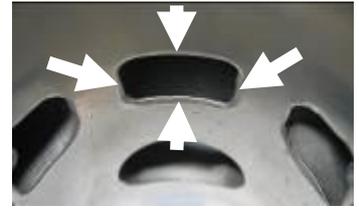
10.5.7.1 All transfer ports and passages have cast finish surface except some removal (done by the manufacturer) of cast burr at the inlet passage and exhaust port and passages. All ports have chamfered edges to prevent ring snagging. Any additional machining is not permitted. The top edge of exhaust port may show some pre-existing machining from the manufacturer. The sealing flange for the exhaust socket may show signs of machining from the manufacturer (see picture right bottom).



10.5.7.2 All ports have chamfered edges (see picture top right). Any additional machining is not permitted.



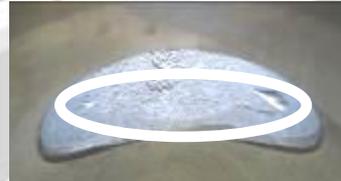
On cylinders marked 223993 and 223994 the upper edge of the central boost port may show factory machining (see picture left).



10.5.7.3 The sealing flange for the exhaust socket may show either cast finish surface or signs of machining from the manufacturer (see picture right).



10.5.7.4 The top edge of the exhaust port may show either just a cast finish surface (picture below left) or signs of a CNC machining (picture below centre) or signs of CNC machining in combination with signs of manual grinding (picture below right).



The exhaust port may show partial manual grinding done by the manufacturer to eliminate minor casting defects and to eliminate the NIKASIL burr at the end of the NIKASIL plating.



The exhaust ports of cylinders 223993 & 223994 may show factory machining all around.

10.5.8 The "exhaust port timing" (distance from the top of the cylinder to the top of the exhaust port) must be checked by means of the template (ROTAX part 277397).

Insert the template into the cylinder so that the template is touching the cylinder wall and the finger of the template is located in the middle of the exhaust port (highest point).

Move the template upwards until the finger is touching the top edge of the exhaust port. Insert a feeler gauge between the top of the cylinder and the template. It MUST NOT be possible to fit the feeler gauge specified below:



125 Junior MAX: 0.90 mm for cylinder 223999/998

125 Junior MAX: 1.10mm for cylinder 223994

125 MAX: 0.75 mm

For cylinder 223993 (125 MAX) it is also legal if the template does not fit in at all.

NOTE: Take care to use the corresponding gauge of the template (Junior or MAX) for the respective cylinder!

10.5.9 Exhaust Valve (125 MAX only)

10.5.9.1 If the piston is moved to the top of the cylinder until it completely covers the exhaust port, it must be possible to insert the exhaust valve gauge (ROTAX part 277030) until it stops at the surface of the cylinder (a feeler gauge of 0.05 mm must not be possible to fit in)

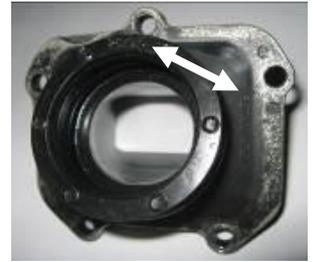


10.5.9.2 Modifying the exhaust valve gasket (part no. 250 231) is illegal.

10.6 Inlet System

10.6.1 Inlet manifold is marked with the name "ROTAX" and the identification code "267 915".

10.6.2 Some factory flash removal may be present at the conjunction of the inside contour and the carburettor stop mounting face. This is a manual trimming operation consisting of a small corner break of less than 3 mm in width. No additional grinding or machining is permitted.



10.6.3 The reed valve assembly is equipped with 2 petal stops and 2 reeds, each having 3 petals.

10.6.4 The thickness of the reeds is 0.6 mm +/- 0.10 mm.

10.7 Crankshaft

10.7.1 Stroke 54.5 mm +/-0.1 mm

10.7.2 Con rod has to show forged numbers "213", "365" or "367" on shaft.

10.7.3 Shaft of con rod is not machined (copper plated). Grinding or polishing of shaft of con rod is not permitted.

10.7.4 Crankshaft main bearing 6206 from FAG only is allowed (must be marked with code 579165BA or Z-579165.11.KL)



10.8 Balance shaft

10.8.1 Balance shaft and balance gears must be installed.

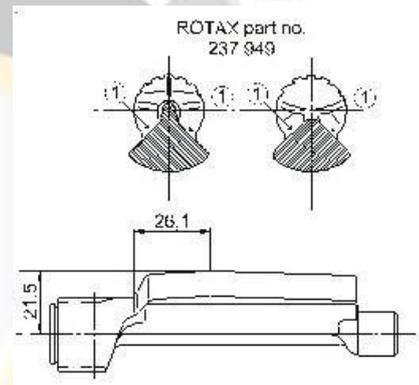
10.8.2 Configurations of part no. 237949 (equal with 237948) only is legal.

Part no. 237945 is no longer legal.

10.8.3 Surface (1) is not machined and must show cast surface.

10.8.4 Measurement from centre of balance shaft to outer diameter of fly weight of balance shaft at defined length must not be lower than specified.

10.8.5 The minimum weight of the dry balance shaft must not be lower than 255g for balance shaft 237949 (equal with 237948).



10.9 Crankcase

As supplied by the manufacturer. No grinding/polishing is permitted in the two main transfer passages as well as in the crank area.

11 – TECHNICAL SPECIFICATION (OUTSIDE ENGINE SEAL) FOR ROTAX KART ENGINES 125 JUNIOR MAX (15 kW) AND 125 MAX (21 kW)

It is the responsibility of the competitor to check all components outside the engine seal to ensure that they are in line with the technical specifications below.

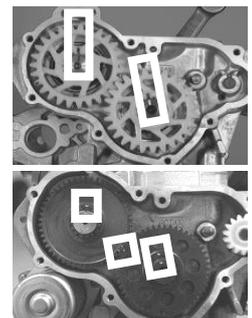
Please note that for engine configuration 125 Micro MAX and 125 Mini MAX, the technical specification of 125 Junior MAX is valid for anything unspecified in the Appendix.

11.1 Balance Drive

Balance gears must be installed and aligned according to the instruction in the repair manual.

11.1.1 Old version "plastic" balance gears can only be used with old type centrifugal clutch (*picture right upper*).

11.1.2 Newer version "steel" balance gears can be used with old AND new type centrifugal clutches (*picture right lower*). Mixing of steel balance gears of different width (6.0mm and 9.0mm) is strictly forbidden.



11.2 Ignition System

11.2.1 DENSO digital battery ignition, variable ignition timing, no adjustment necessary and possible.

Race officials may request at any time that the competitor replace the ignition coil with a new unit provided by the race administration.

11.2.2 The casting of the ignition coil has to show the following in casting "129000-" and "DENSO".

11.2.3 Ignition coil must show 3 pins at the terminal.

11.2.4 Connector housing of ignition coil must have either black or green colour. Ignition coils 265572 & 265578 are permitted. 265571 (assembly) is not permitted.

11.2.5 The ignition coil has to be fixed by means of 2 original silent blocks to the gearbox cover. Only in case of chassis component interference with the original mounting location of the ignition coil, a supplementary extension bracket, rigidly constructed and fabricated of solid metal, of minimum dimensions and attached to the original case mounting holes, is permitted for mounting of the coil.

11.2.6 The minimum length of ignition wire (high tension wire) is 210 mm from outlet of cable at ignition coil to outlet of cable at spark plug connector (= the visible length of wire). Ignition coil must be in working condition (to be tested in case of doubt).

11.2.7 The pick-up must be marked with the numbers 029600-0710, followed by a variable production code in the 2nd line.

HINT: In case of doubt an easy check is to place a steel ball (3-5 mm in diameter) on the pick-up (engine side). The steel ball must stay in the centre of the pickup surface.



11.2.8 Spark plug: DENSO Iridium IW 27 or 29 or 31

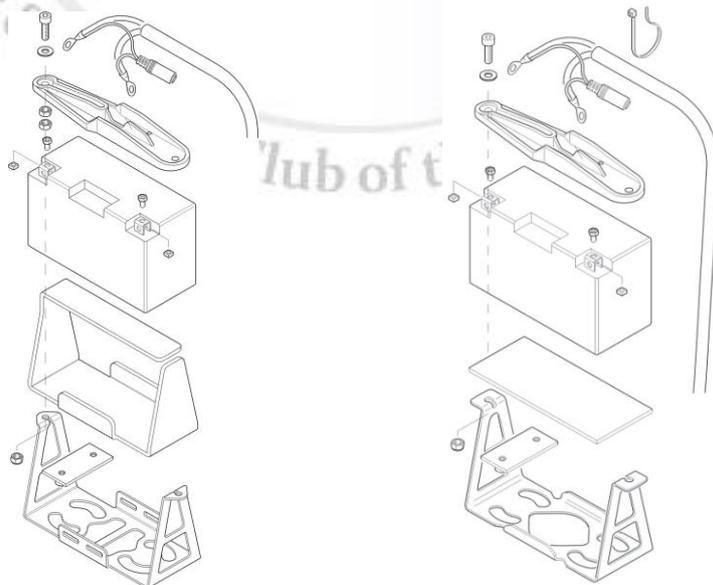
11.2.9 Spark plug cap must be marked with "NGK TB05EMA".

11.2.10 Original battery must be used:

YUASA YT7B-BS or **ROTAX** RX7-12B or **ROTAX** RX7-12L (lithium iron phosphate)

11.2.11 Battery must be fitted with the original battery clamp and battery cover (see illustration below) and must be fixed to the chassis with both clamps (at least 4 screws). Position of the battery is free.

11.2.12 Battery must be mounted with all components as shown in the illustration either like version 1 (below left) or like version 2 (below right).



11.2.13 To fit a second original mass cable (part no. 264910) is an allowed option.

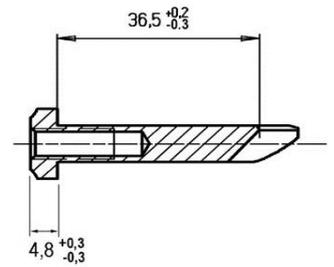
11.3 Exhaust Valve (125 MAX only)

11.3.1 As supplied by the manufacturer with no modification allowed. Compression spring (part number 239942, length 42.5mm) must be fitted.

11.3.2 Length of the exhaust valve is 36.5 mm $+0.20$ mm/ -0.30 mm.

11.3.3 Width of collar is 4.8 mm $+/-0.3$ mm

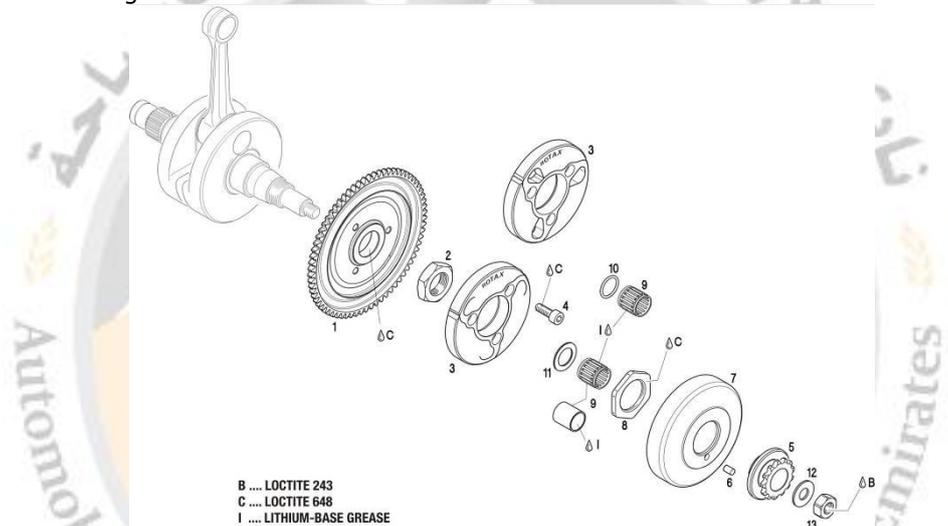
11.3.4 Only the green coloured exhaust valve bellow is legal to be used (ROTAX part number 260723)



11.4 Centrifugal Clutch

11.4.1 Dry centrifugal clutch, engagement maximum at 4,000 rpm, i.e. the kart (without driver) must start to move before the maximum engine speed of 4,000 rpm.

There are two versions of the clutch shoe (element part #3 on the diagram) and both are legal to be used. The older version of the clutch shoe can be either untreated or nitrated configuration.



11.4.2 Engines must be fitted with needle cage bearing 15x19x17 (item 9) or plain bearing 15x17x17.6 (item 9) as well as O-Ring 12x2.5 (item 10) only.

No extra lubrication or additional substance is allowed inside the clutch drum in addition to the grease that originates from lubrication of the needle cage bearing and enters the clutch area.

The pictures (right) show worst case scenario for grease to exit the bearing area with the O-Ring installed.

Only the fixation nut as well as inside of drum show signs of grease but the running surface of the clutch is completely dry.



11.4.3 Steel clutch (both versions) and clutch drum must be within following specifications:

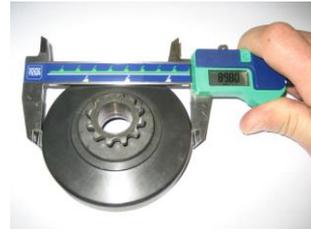
11.4.3.1 Minimum height of clutch 11.45mm (picture below left)

11.4.3.2 Minimum thickness of clutch shoe 24.10mm (picture far right).

Measurement must be done at the 3 open ends of the clutch shoes, 5-10mm from the machined groove. All clutch shoes must be completely closed.



11.4.3.3 Minimum outer diameter of clutch drum 89.50mm (picture near right)
Diameter must be measured with a sliding calliper beside the radius from the shoulder (not at the open end of the clutch drum).



11.4.3.4 Maximum inner diameter of clutch drum 84.90mm (picture below right)
The inner diameter must be measured with a sliding calliper. The measurement must be taken in the middle of the clutch drum (in the contact area of the drum).



11.4.3.5 Minimum height of sprocket with clutch drum assembly 33.90mm (picture far right).



11.5 Intake Silencer

11.5.1 Version 1 (below left) or version 2 (below right) of intake silencer with integrated, washable air filter must be used with all parts as shown in illustrations and must be mounted on the support bracket with two screws (in dry and wet race condition).

Intake silencer tube (version 2, position 2 below) as well as carburettor socket (version 2, position 6) are only legal if marked with "ROTAX". Parts marked with "APRILIA" are no longer legal to be used.

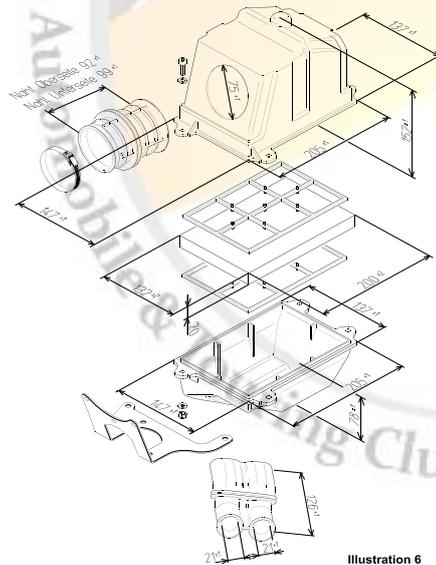
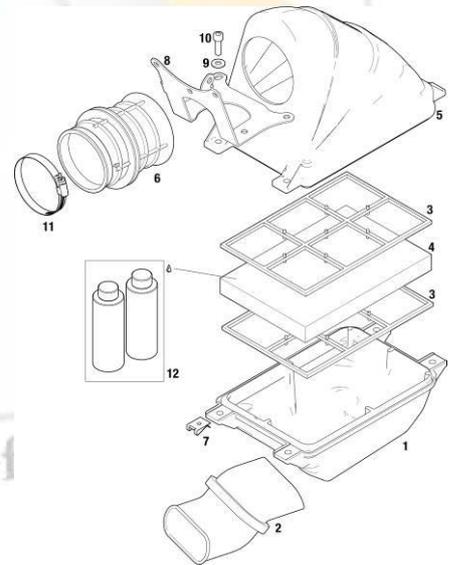


Illustration 6



11.5.2 For version 1 it is allowed to drill one hole with 8 mm diameter in the lower part of the intake silencer (in the centre of the plastic injection mark) to automatically drain the intake silencer in case of heavy rain. This hole may stay unsealed also in dry conditions.

11.5.3 On version 2 the intake silencer case bottom is marked on the inside with ROTAX part no. 225015.

11.5.4 On version 2 the intake silencer case top is marked on the inside with ROTAX part no. 225025.

11.5.5 Air filter must be installed as shown in illustrations above.

11.6 Carburettor – 125 MAX and 125 MAX Junior

11.6.1 DELL'ORTO carburettor with VHSB 34" and "QS" cast in the housing of the carburettor. The carburettor year identification must be 05 onwards.

11.6.2 The complete inlet bore in the casing of the carburettor must show cast surface

11.6.3 The carburettor slide must show size "40" in casting and the bottom end of the slide must show a cast surface.

11.6.4 Jet needle stamped with "K98" only

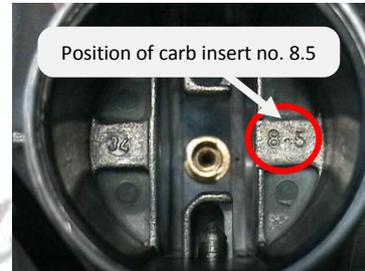
11.6.5 Only the following combination of floats and idle jets is legal:

Floats are marked with "gr 3.6"

Idle jet is stamped "60"

Idle jet insert is stamped "60"

Carb insert is stamped 8.5 (see picture right)



11.6.6 Settings of the carburettor adjustment screws are free.

11.6.7 All jets must be correctly seated and securely fitted (tight).

11.6.8 Main jets smaller than 158 are not permitted in the UAE RMC.

Note: main jets smaller than size 160 or bigger than 200 are not recommended by ROTAX (except in high altitude conditions)

11.6.9 Needle valve assembly is stamped "150"

11.6.10 Needle of needle valve marked with diamond symbol "INC" only (see picture right)



11.6.11 Start jet is stamped with the digits "60"

11.6.12 The height of the two arms of the float lever must be within the slot of the carburettor gauge (ROTAX part no. 277400) by their normal weight, measured at the carburettor housing in the reverse upright position without the gasket (see picture right).



11.6.13 Needle jet must be stamped with "FN 266" and have the following dimensions:

Top bore diameter 2.60 +/- 0.15 mm (picture right)

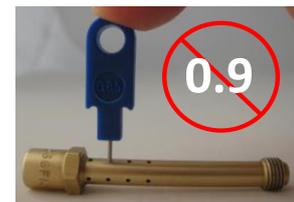
Total length 54.00 +/- 0.3 mm (picture below left)

Length of bottom section 11.50 +/- 0.2 mm (below centre)



4x4 cross holes diameter:

Using jet gauge set (ROTAX part no. 281920) it must not be possible for plug gauge 0.90 mm to enter any one of the 16 holes (picture right).



11.6.14 Idle jet 60: using jet gauge set (ROTAX part no. 281920) it must not be possible for plug gauge 0.65 mm to enter the bore of idle jet 60 (picture right).



11.6.15 Idle emulsion tube 60: using jet gauge set (ROTAX part no. 281920) it must not be possible for plug gauge 0.65 mm to enter the bore (picture far left).

Using jet gauge set (ROTAX part no. 281920) it must not be possible for plug gauge 0.65 mm to enter any one of the 4 cross bores (picture near left).

11.6.16 Carburettor insert 8.5 must meet the following criteria:



Angular bore: using jet gauge set (ROTAX part no. 281920) it must not be possible for plug gauge 0.60 mm to fit (picture left).

Vertical bore: using jet gauge set (ROTAX part no. 281920) it must not be possible for plug gauge 0.90 mm to fit (picture right).



11.6.17 Atomiser must meet the following criteria:

Using venturi tool set (ROTAX part no. 676034) the control pin $\varnothing 3.6\text{mm}$ must enter the atomiser (pic right).

- Total length 23.75 +/- 0.45 mm (pic below far left)
- Length of cylindrical part 15.75 +/- 0.25 mm (pic middle left)
- Dimension of cutaway 6.00 +/- 0.15 mm (pic middle right)
- Diameter of cross bore 4.05 +/- 0.15 mm (pic below far right)

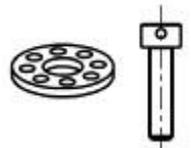


Note: Use venturi tool set (ROTAX part no. 676034) to remove atomiser from carb body.

11.6.18 Optional carburettor plug screw (ROTAX part no. 261030) is legal to be used.

11.6.19 The two vent fittings must be connected with the original air vent hose minimum length 155mm (ROTAX part no. 260260). The location of the opening must be placed at the rear side of the carburettor.

11.6.20 Optional items ROTAX part no. 240184 (allen screw, 2pcs.) and ROTAX part no. 261552 (main jet cup, 1pc.) are legal to be used. These parts optionally replace the parts 262020 and 261550 in the case of sealing a carburettor.



11.7 Fuel Pump

MIKUNI diaphragm pump must be mounted on the support bracket (on the bottom or sideways) of the intake silencer.

11.8 Fuel Filter

The original fuel filter versions only (pictures right) are allowed to be fitted between the fuel tank and the fuel pump.

No additional parts except the fuel line, fuel pump as well as the original fuel filter are legal to be mounted between the fuel tank and the carburettor.



11.9 Radiator

11.9.1 Single aluminium radiator as shown in illustrations.
Name "ROTAX" stamped in the side of version 3.

11.9.2 Cooling area:
Version 1 & 2: height = 290 mm, width = 133 mm
Version 3: height = 290 mm, width = 138 mm

11.9.3 Thickness of radiator:
Version 1 & 2 = 32 mm
Version 3 = 34 mm

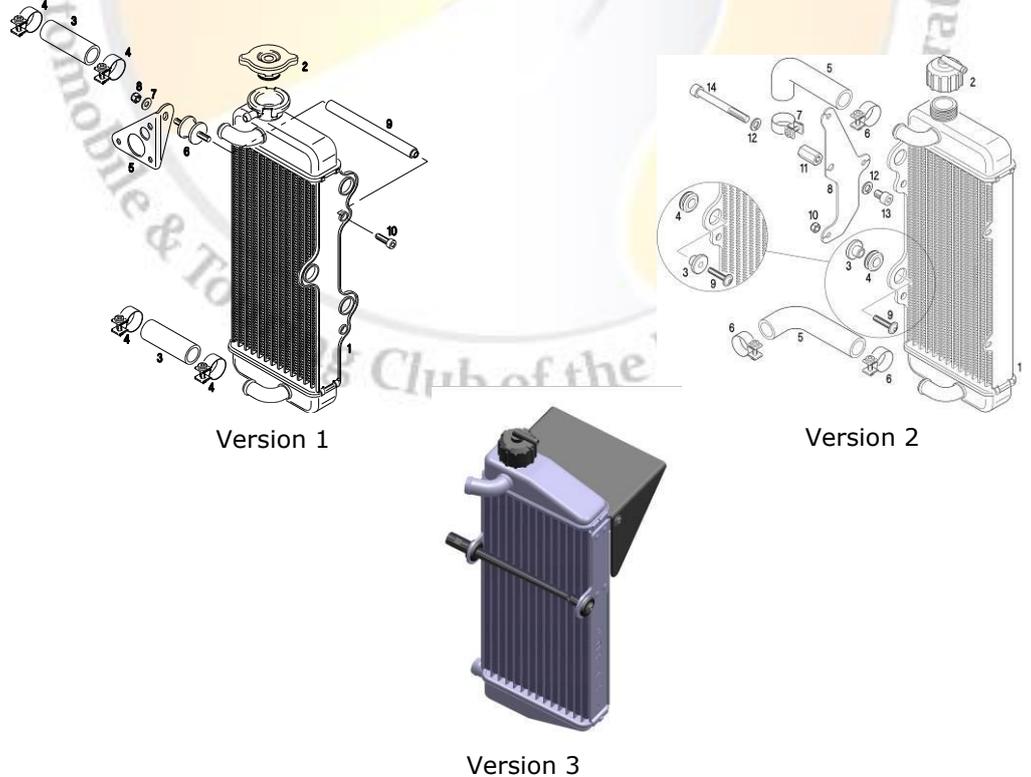
11.9.4 Place of fixing the radiator is on right side of engine.

11.9.5 Radiator must be mounted with all components as shown in the illustrations either like version 1, version 2 or version 3.

11.9.6 For version 2 there are 2 legal options to mount the radiator to the retaining plate (see drawing for details). For version 2 there are 2 different radiators with 2 different positions of the retaining plates (either pointing forward or backwards).

11.9.7 No additional non-original cooling device is allowed.
For versions 1, 2 and 3 tape applied around the radiator is the only allowed air flow control (other than the flap on version 3). Only plain tape (no advertising) is allowed. Tape may not be removed from the radiator during operation on the track. All other means of air flow control through the radiator are prohibited (except for the original plastic flap for version 3).
Removal of the original plastic flap (version 3) is an acceptable configuration.

11.9.8 The removal of the thermostat from the cylinder head cover is an acceptable configuration.



11.10 Radiator Coolant

As glycol coolants are prohibited, plain water without any additives has to be used.

11.11 Exhaust System

11.11.1 Must be as supplied by ROTAX and cannot be modified except for the replacement of the silencer absorption material and the use of threaded fasteners in place of rivets for securing the silencer end cap.

11.11.2 Standard exhaust socket must be used.

11.11.3 Exhaust pipe with after-muffler as shown in below pictures. Both versions (with welded on after-muffler and with after-muffler fixed by 2 springs) are legal to be used.

11.11.4 Maximum diameter of hole of end cap (pos 6, illustration) 21.0 mm.

11.11.5 Length of inlet cone 592mm +/-5 mm (measured on outside from beginning of exhaust pipe until beginning of cylindrical part).

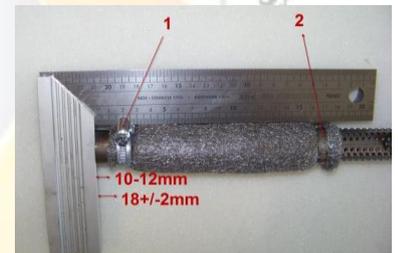
11.11.6 Length of cylindrical part of exhaust pipe: 125 mm +/-5 mm.

11.11.7 Length of end cone 225mm +/-5 mm

11.11.8 Outside diameter of 180° bent tube 41mm +1.5 mm/-1.0 mm (measured at beginning and end of bend).

11.11.9 Just one piece of original isolation mat is allowed to be used. The original exhaust system (tuned pipe and silencer) may not be modified, except for the addition of extra elements for further noise reduction.

11.11.10 In addition to the standard isolation mat a special steel mat (ROTAX part no. 297983) of square dimension 165 + 10 mm is legal to be assembled underneath the standard isolation mat (picture right). Clamp (1) must be fitted at a distance of 18 +/- 2 mm, measured from the end of the tube. Clamp (2) must be fitted at the end area of the steel isolation mat. Both clamps are mandatory. 10-12mm is a specification for assembly purpose only.



11.11.11 For measuring the exhaust gas temperature it is allowed to weld a socket on top of the exhaust, 50-80 mm from the ball joint.

11.11.12 The use of a maximum 4 pieces of original ROTAX exhaust springs to fix the exhaust to the cylinder is allowed (no safety wire allowed in exhaust flange area).

11.11.13 Unpainted exhaust system (first years of production) is not legal to be used.

11.12 Noise Emissions

11.12.1 Noise isolating mat (see illustration exhaust system) must be replaced by an original ROTAX spare part if noise emission is exceeding 92 dB (A).

11.12.2 Noise emission measuring procedure:

At a section of the track where the engine is operated under full load at rpm range of 11-12,000 a microphone must be installed 1 metre above the level of the track and at a perpendicular angle to the track.

The distance between the microphone and the kart on the ideal line on the track should be 7.5 metres. The kart should be operated under full load on the ideal line on the circuit.

12 – TECHNICAL SPECIFICATION (WITHIN ENGINE SEAL) FOR ROTAX KART ENGINES 125 MAX DD2 (24 kW)

12.1 Squish Gap

125 MAX DD2 1.20-1.50 mm

The squish gap must be measured with a certified slide gauge and by using a 2 mm tin wire. The crankshaft must be turned by hand slowly over TDC (top dead centre) to squeeze the tin wire.

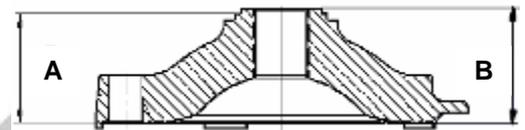
The squish gap must be measured on the left and right side in the direction of the piston pin. The average value of the two measurements counts.

12.2 Combustion Chamber Insert

12.2.1 Cast identification code must be "223 389," "223 389 1," "223 389 2," "223 389 2/1" or "223 389 2/2" (see picture right)

12.2.2 Cast wording "ROTAX" and/or "MADE IN AUSTRIA" must be shown (see picture right)

12.2.3 Heights of combustion chamber insert must be 27.55 mm with a tolerance of +0.0/-0.1 mm (A) and 28.80 mm with a tolerance of +/- 0.2 mm (B)



12.2.4 The profile of the combustion chamber insert must be checked with a template (ROTAX part no. 277 390). The crack of light between the template and the profile of the combustion chamber insert must be the same over the whole profile.

NOTE: This check is just for reference. In case of doubt detailed measurements must be performed to define conformity or non-conformity.



12.3 Piston with ring assembly

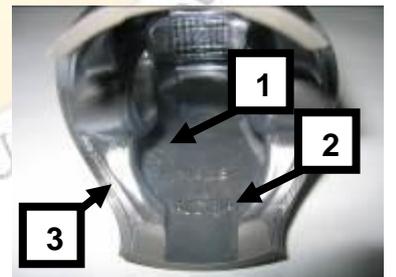
12.3.1 Original, coated or uncoated, aluminium, cast piston with one piston ring. The piston has to show on the inside the cast wording "ELKO" (1) and "MADE IN AUSTRIA" (2).

12.3.2 Machined areas are: top end of piston, outside diameter, groove for the piston ring, bore for the piston pin, inside diameter at bottom end of piston and some pre-existing factory removal (3) of flashing at the cut out of the piston skirt. All other surfaces are not machined and have cast surface.

12.3.3 Original, magnetic, rectangular piston ring.

Ring height: 0.98 +/- 0.02 mm

Piston ring is marked either with "ROTAX 215 547" or "ROTAX 215 548".



12.3.4 "Window" type piston as delivered in the early days of production is no longer legal to be used.

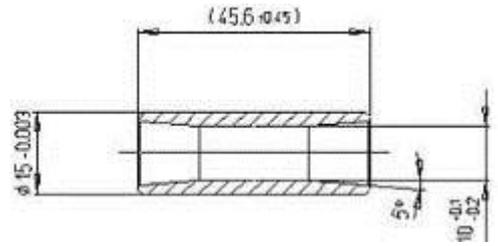
12.3.5 Any mechanical treatment or overwork is forbidden. Changing the original surface is illegal (e.g. removal of carbon deposits). Cleaning without disturbing the original surface is allowed.

12.4 Gudgeon pin

12.4.1 Gudgeon pin is made out of magnetic steel.

12.4.2 Dimensions must be according to the drawing.

12.4.3 The minimum weight of the gudgeon pin must not be lower than 32.10g



12.5 Cylinder

12.5.1 Light-alloy-cylinder with GILNISIL-plating. Any re-plating of cylinder is not allowed.

12.5.2 Cylinder with one main exhaust port and two side exhaust ports.

12.5.3 Maximum bore of cylinder = 54.035mm (measured 10mm above exhaust port)

12.5.4 Cylinder has to be marked with the "ROTAX" logo (see pictures below).

12.5.5 Cylinder with pneumatic timed exhaust valve. Cylinder must be marked either with identification code 613930, 613931 or 613933.



12.5.6 Height of cylinder must be 86.7mm $-0.05/+0.1$ mm (see picture right).



12.5.7.1 All transfer ports and passages have cast finish surface except some removal (done by the manufacturer) of cast burr at the inlet passage and exhaust port and passages. All ports have chamfered edges to prevent ring snagging. Any additional machining is not permitted. The top edge of exhaust port may show some pre-existing machining from the manufacturer. The sealing flange for the exhaust socket may show signs of machining from the manufacturer (see picture right).



12.5.7.2 All ports have chamfered edges (see picture right). Any additional machining is not permitted.



On cylinders marked 613933 the upper edge of the central boost port may show factory machining (see picture left).

12.5.7.3 The sealing flange for the exhaust socket may show either cast finish surface or signs of machining from the manufacturer (see picture right).



12.5.7.4 The top edge of the exhaust port may show either just a cast finish surface (*picture below left*) or signs of a CNC machining (*picture below centre*) or signs of CNC machining in combination with signs of manual grinding (*picture below right*).



The exhaust port may show partial manual grinding done by the manufacturer to eliminate minor casting defects and to eliminate the NIKASIL burr at the end of the NIKASIL plating.

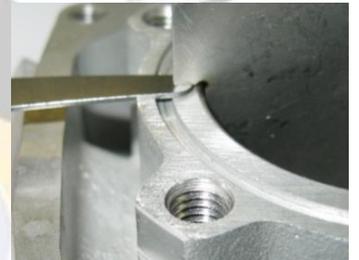
The exhaust ports of cylinder 613933 may show factory machining all around (*see picture right*).



12.5.8 The "exhaust port timing" (distance from the top of the cylinder to the top of the exhaust port) must be checked by means of the template (ROTAX part 277397).

Insert the template into the cylinder so that the template is touching the cylinder wall and the finger of the template is located in the middle of the exhaust port (highest point).

Move the template upwards until the finger is touching the top edge of the exhaust port. Insert a feeler gauge between the top of the cylinder and the template. It MUST NOT be possible to fit the feeler gauge specified below:



125 MAX DD2: 0.75 mm

For cylinder 613933 it is also legal if the template does not fit in at all.

NOTE: Take care to use the corresponding gauge of the template (DD2) for the respective cylinder!

12.5.9 Exhaust Valve

12.5.9.1 If the piston is moved to the top of the cylinder until it completely covers the exhaust port, it must be possible to insert the exhaust valve gauge (ROTAX part 277030) until it stops at the surface of the cylinder (a feeler gauge of 0.05 mm must not be possible to fit in)



12.5.9.2 Modifying the exhaust valve gasket (part no. 250 231) is illegal.

12.6 Inlet System

12.6.1 Inlet manifold is marked with the name "ROTAX" and the identification code "267 410".

12.6.2 Some factory flash removal may be present at the conjunction of the inside contour and the carburettor stop mounting face. This is a manual trimming operation consisting of a small corner break of less than 3 mm in width. No additional grinding or machining is permitted.



12.6.3 The reed valve assembly is equipped with 2 petal stops and 2 reeds, each having 3 petals.

12.6.4 The thickness of the reeds is 0.6 mm +/- 0.10 mm.

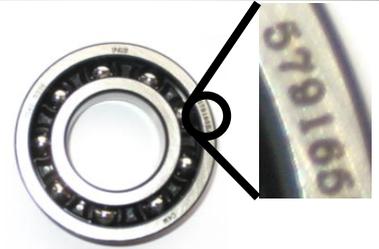
12.7 Crankshaft

12.7.1 Stroke 54.5 mm +/-0.1 mm

12.7.2 Con rod has to show forged numbers "213", "365" or "367" on shaft.

12.7.3 Shaft of con rod is not machined (copper plated). Grinding or polishing of shaft of con rod is not permitted.

12.7.4 Crankshaft main bearing 6206 from FAG only is allowed (must be marked with code **579165BA** or **Z-579165.11.KL**)



12.8 2-Speed Gearbox

12.8.1 Primary shaft with 19 teeth for 1st gear and 24 teeth for 2nd gear.

12.8.2 Idle gear for 1st gear must have 81 teeth.

12.8.3 Idle gear for 2nd gear must have 77 teeth.

12.9 Crankcase

As supplied by the manufacturer. No grinding/polishing is permitted in the two main transfer passages as well as in the crank area.

13 - TECHNICAL SPECIFICATION (OUTSIDE ENGINE SEAL) FOR ROTAX KART ENGINE 125 MAX DD2 (24 kW)

It is the responsibility of the competitor to check all components outside the engine seal to ensure that they are in line with the technical specifications below.

13.1 Ignition System

13.1.1 DENSO digital battery ignition, variable ignition timing, no adjustment necessary and possible. Race officials may request at any time that the competitor replace the ignition coil with a new unit provided by the race administration.

13.1.2 The casting of the ignition coil has to show the following in casting "129000-" and "DENSO".

13.1.3 Ignition coil must show 4 or 6 pins at the terminal.

13.1.4 Connector housing of ignition coil must have either white or grey colour.

13.1.5 The ignition coil has to be fixed by means of 2 original silent blocks to the crankcase. Only in case of chassis component interference with the original mounting location of the ignition coil, a supplementary extension bracket, rigidly constructed and fabricated of solid metal, of minimum dimensions and attached to the original case mounting holes, is permitted for mounting of the coil.

13.1.6 The minimum length of ignition wire (high tension wire) is 210 mm from outlet of cable at ignition coil to outlet of cable at spark plug connector (= the visible length of wire). Ignition coil must be in working condition (to be tested in case of doubt).

13.1.7 The pick-up must be marked with the numbers 029600-0710, followed by a variable production code in the 2nd line.

HINT: In case of doubt an easy check is to place a steel ball (3-5 mm in diameter) on the pick-up (engine side). The steel ball must stay in the centre of the pickup surface.



13.1.8 Spark plug: DENSO Iridium IW 27 or 29 or 31

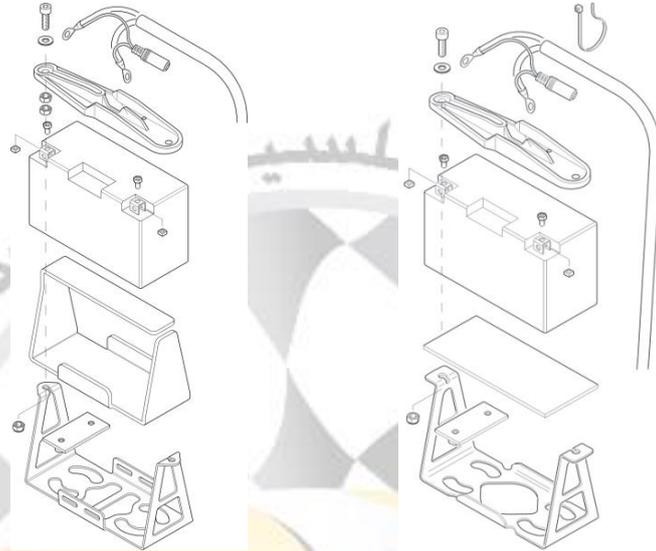
13.1.9 Spark plug cap must be marked with "NGK TB05EMA".

13.1.10 Original battery must be used:

YUASA YT7B-BS or **ROTAX** RX7-12B or **ROTAX** RX7-12L (lithium iron phosphate)

13.1.11 Battery must be fitted with the original battery clamp and battery cover (see illustration below) and must be fixed to the chassis with both clamps (at least 4 screws). Position of the battery is free.

13.1.12 Battery must be mounted with all components as shown in the illustration either like version 1 (below left) or like version 2 (below right).



13.1.13 To fit a second original mass cable (part no. 264910) is an allowed option.

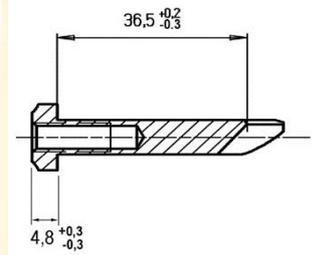
13.2 Exhaust Valve

13.2.1 As supplied by the manufacturer with no modification allowed. Compression spring (part number 239950, length 48.5mm) must be fitted.

13.2.2 Length of the exhaust valve is 36.5 mm $+0.20$ mm/ -0.30 mm.

13.2.3 Width of collar is 4.8 mm $+/-0.3$ mm

13.2.4 Only the green coloured exhaust valve bellow is legal to be used (ROTAX part number 260723)



13.3 Balance Drive

13.3.1 Balance drive gear must be fitted on crank shaft.

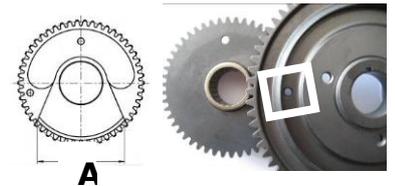
13.3.2 Balance gear must be fitted on primary shaft and must be aligned with the balance drive gear according to the instruction in the repair manual.

13.3.3 Fly weight of old version balance gear must show cast surface (see picture right).

13.3.4 Fly weight of new version balance gear can show machined surface (see picture right).

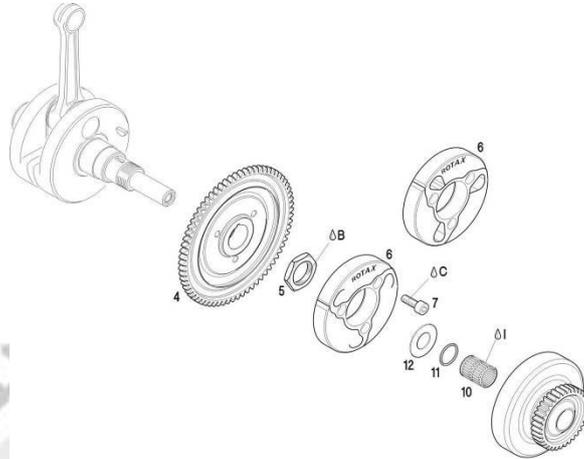
13.3.5 Dimension A (widest part of balance weight) must be either 53 mm $+/- 0.5$ mm or 57 mm $+/- 0.5$ mm

13.3.6 The minimum weight of a dry balance gear including bearing (new version only) must not be lower than 240g.



13.4 Centrifugal Clutch

13.4.1 Dry centrifugal clutch, engagement maximum at 4,000 rpm, i.e. the kart (without driver) must start to move before the maximum engine speed of 4,000 rpm. Both clutch element versions as in illustration are legal to be used. Old version clutch element can be either untreated or nitrated configuration.



13.4.2 Steel (both versions) and clutch drum must be within following specifications:

13.4.3.1 Minimum height of clutch 14.45mm (picture below left)

13.4.3.2 Minimum thickness of clutch shoe 24.10mm (picture far right).

Measurement must be done at the 3 open ends of the clutch shoes, 5-10mm from the machined groove. All clutch shoes must be completely closed.



13.4.3.3 Minimum outer diameter of clutch drum 89.50mm (picture near right)

Diameter must be measured with a sliding calliper beside the radius from the shoulder (not at the open end of the clutch drum).

13.4.3.4 Maximum inner diameter of clutch drum 84.90mm (picture below right)

The inner diameter must be measured with a sliding calliper. The measurement must be taken in the middle of the clutch drum (in the contact area of the drum).



13.4.3.5 Minimum height of sprocket with clutch drum assembly 39.50mm (picture far right).

13.5 Primary Drive

13.5.1 Original primary drive gears of following gear ratio options must be used. Only mentioned pairs are legal to be used:

Drive gear	Driven gear
33	64
34	63
35	62
36	61
37	60



13.5.2 A specific primary gear ratio may be determined for each race event by a "Supplementary Regulation".

13.6 Gear Shifting

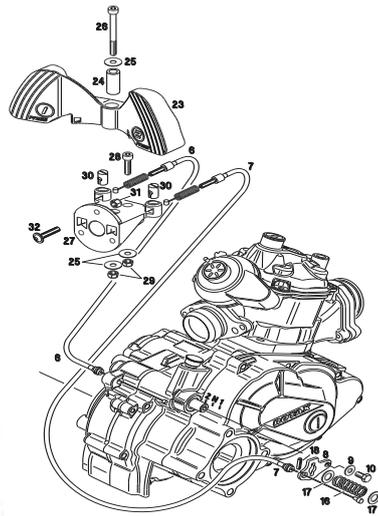
13.6.1 The 2-speed gearbox has to be operated with one of the 2 available original supplied shift paddle configurations on the steering wheel via the two Bowden cables.

13.6.2 For plastic paddle (version 1) only, the cutting of the original shift paddle or the adding of pads to the shift paddle in order to adjust the paddle to specific steering wheels is permitted.

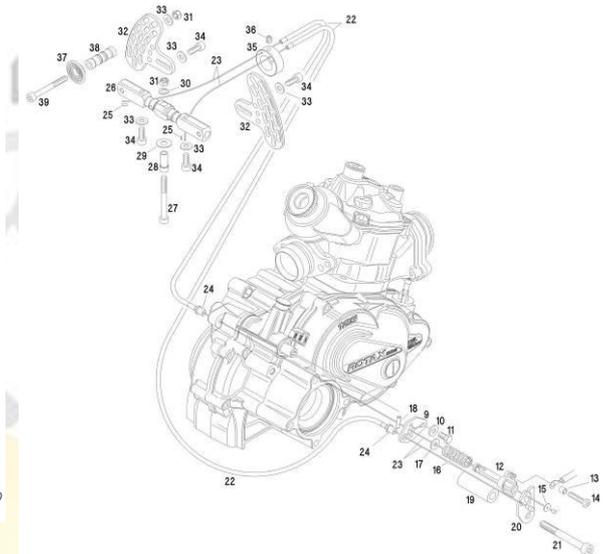
For the aluminium paddle (version 2) no cutting or adding of non-original parts or material is allowed.

13.6.3 For plastic paddle only, the original hub for the steering wheel must be used.

Version 1 (plastic paddle):



Version 2 (aluminium paddle):



13.7 Intake Silencer

13.7.1 Intake silencer with integrated, washable air filter as shown in illustration below (2 legal versions available).

13.7.2 The intake silencer case is marked on the inside with ROTAX part no. 225012.

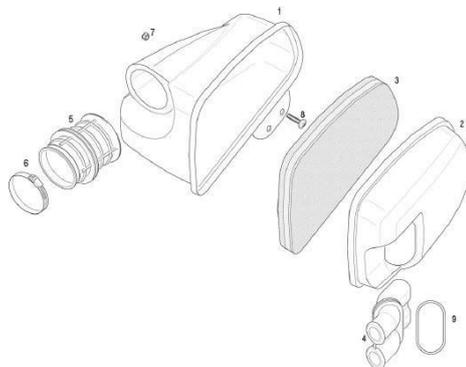
13.7.3 The intake silencer cover is marked on the inside with ROTAX part no. 225022.

13.7.4 The air filter is marked with ROTAX part no. 225 052.

13.7.5 The air filter must be assembled between the intake silencer case and the intake silencer cover so that the whole area of the intake silencer case is covered.

13.7.6 It is allowed to seal the top of the airbox using adhesive tape.

13.7.7 It is mandatory that the o-ring (pos. 9) is fitted on the intake silencer tube (pos. 4).



13.7.8 Intake silencer tube (pos. 1) and carb socket (pos. 5) are only legal if marked "ROTAX". Parts marked with "APRILIA" are no longer legal to be used.

13.8 Carburettor – 125 MAX DD2

13.8.1 DELL'ORTO carburettor with VHSB 34" and "QS" cast in the housing of the carburettor. The carburettor year identification must be 05 onwards.

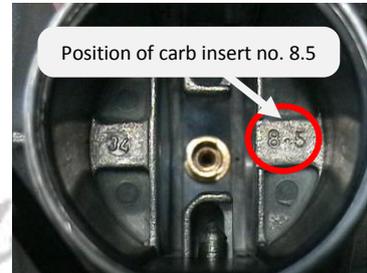
13.8.2 The complete inlet bore in the casing of the carburettor must show cast surface

13.8.3 The carburettor slide must show size "40" in casting and the bottom end of the slide must show a cast surface.

13.8.4 Jet needle stamped with "K98" only

13.8.5 Only the following combination of floats and idle jets is legal:

- Floats are marked with "gr 5.2"
- Idle jet is stamped "30"
- Idle jet insert is stamped "30"
- Carb insert is stamped 8.5 (see picture right)



13.8.6 Settings of the carburettor adjustment screws are free.

13.8.7 All jets must be correctly seated and securely fitted (tight).

13.8.8 Main jets smaller than 180 are not permitted in the UAE RMC.
Note: main jets smaller than size 180 or bigger than 210 are not recommended by ROTAX (except in high altitude conditions)

13.8.9 Needle valve assembly is stamped "150" or "200"

13.8.10 Needle of needle valve marked with diamond symbol "INC" only (see picture right)



13.8.11 Start jet is stamped with the digits "60"

13.8.12 The height of the two arms of the float lever must be within the slot of the carburettor gauge (ROTAX part no. 277400) by their normal weight, measured at the carburettor housing in the reverse upright position without the gasket (see picture right).



13.8.13 Needle jet must be stamped with "FN 266" and have the following dimensions:

- Top bore diameter 2.60 +/- 0.15 mm (picture right)
- Total length 54.00 +/- 0.3 mm (picture below left)
- Length of bottom section 11.50 +/- 0.2 mm (below centre)



4x4 cross holes diameter:

Using jet gauge set (ROTAX part no. 281920) it must not be possible for plug gauge 0.90 mm to enter any one of the 16 cross holes (picture right).



13.8.14 Idle jet 60: using jet gauge set (ROTAX part no. 281920) it must not be possible for plug gauge 0.65 mm to enter the bore of idle jet 60 (picture right).



13.8.15 Idle emulsion tube 60: using jet gauge set (ROTAX part no. 281920) it must not be possible for plug gauge 0.65 mm to enter the bore (picture far left).

Using jet gauge set (ROTAX part no. 281920) it must not be possible for plug gauge 0.65 mm to enter any one of the 4 cross bores (picture near left).

13.8.16 Carburettor insert 8.5 must meet the following criteria:



Angular bore: using jet gauge set (ROTAX part no. 281920) it must not be possible for plug gauge 0.60 mm to fit (picture left).

Vertical bore: using jet gauge set (ROTAX part no. 281920) it must not be possible for plug gauge 0.90 mm to fit (picture right).



13.8.17 Atomiser must meet the following criteria:

Using venturi tool set (ROTAX part no. 676034) the control pin $\varnothing 3.6\text{mm}$ must enter the atomiser (pic right).

Total length $23.75 \pm 0.45 \text{ mm}$ (pic below far left)

Length of cylindrical part $15.75 \pm 0.25 \text{ mm}$ (pic middle left)

Dimension of cutaway $6.00 \pm 0.15 \text{ mm}$ (pic middle right)

Diameter of cross bore $4.05 \pm 0.15 \text{ mm}$ (pic below far right)

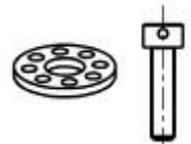


Note: Use venturi tool set (ROTAX part no. 676034) to remove atomiser from carb body.

13.8.18 Optional carburettor plug screw (ROTAX part no. 261030) is legal to be used.

13.8.19 The two vent fittings must be connected with the original air vent hose minimum length 155mm (ROTAX part no. 260260). The location of the opening must be placed at the rear side of the carburettor.

13.8.20 Optional items ROTAX part no. 240184 (allen screw, 2pcs.) and ROTAX part no. 261552 (main jet cup, 1pc.) are legal to be used. These parts optionally replace the parts 262020 and 261550 in the case of sealing a carburettor.



13.9 Fuel Pump

13.9.1 Original MIKUNI diaphragm pump must be fitted by means of two original silent blocks to the chassis or the engine.

13.9.2 Centreline of fuel pump may not be higher than the centreline of carburettor.



13.10 Fuel Filter

The two original fuel filter versions only (pictures right) are allowed to be fitted between the fuel tank and the fuel pump.



No additional parts except the fuel line, fuel pump and the original fuel filter are legal to be mounted between the fuel tank and the carburettor.



13.11 Radiator

13.11.1 Single aluminium radiator (see illustrations)

13.11.2 "ROTAX" stamped on top/side of radiator.

13.11.3 Cooling area:

Version 1: height = 284 mm, width = 202 mm

Version 2: height = 290 mm, width = 196 mm

13.11.4 Radiator thickness (version 1) = 32 mm

Radiator thickness (version 2) = 34 mm

13.11.5 The radiator should be mounted on left side of kart beside the seat.

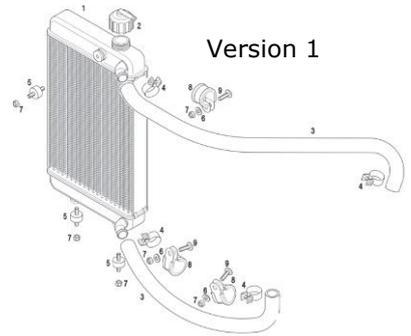
13.11.6 The highest point of the radiator with cap may not be higher than 400 mm above the main tube of the kart chassis.

13.11.7 No additional non-original cooling device is allowed.

For version 1 and 2 tape applied around the radiator is the only allowed air flow control (other than the flap on version 2). Only plain tape (no advertising) is allowed. Tape may not be removed from the radiator during operation on the track. All other means of air flow control through the radiator are prohibited.

Removal of the original plastic flap (version 2) is an acceptable configuration.

13.11.8 The removal of the thermostat from the cylinder head cover is an acceptable configuration.



Version 1

Version 2

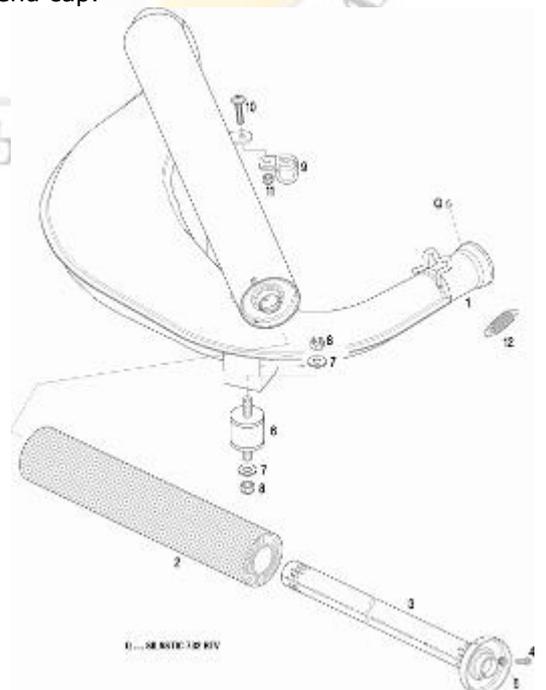
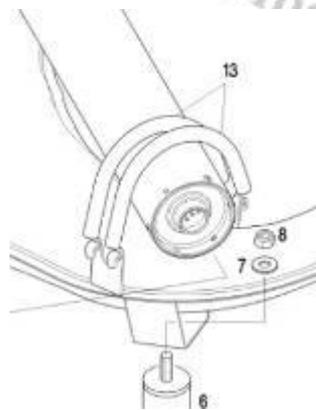


13.12 Radiator Coolant

As glycol coolants are prohibited, plain water without any additives must be used.

13.13 Exhaust System

13.13.1 Must be as supplied by ROTAX and cannot be modified except for the replacement of the silencer absorption material and the use of threaded fasteners in place of rivets for securing the silencer end cap.



13.13.2 Standard exhaust socket must be used.

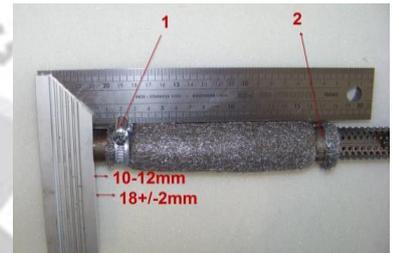
13.13.3 Exhaust pipe with after-muffler as shown in illustrations. Both versions (old with welded on after-muffler and new with after-muffler fixed by 2 springs) are legal to be used.

13.13.4 Diameter of hole of end cap of (pos 3, illustration): 19.6 mm +/-0.2 mm.

13.13.5 Just one piece of original isolating mat is allowed to be used.

13.13.6 The original exhaust system (tuned pipe and silencer) may not be modified, except for the addition of extra elements for further noise reduction.

13.13.7 In addition to the standard isolation mat a special steel mat (ROTAX part no. 297983) of square dimension 165 + 10 mm is legal to be assembled underneath the standard isolation mat (picture right). Clamp (1) must be fitted at a distance of 18 +/- 2 mm, measured from the end of the tube. Clamp (2) must be fitted at the end area of the steel isolation mat. Both clamps are mandatory. 10-12mm is a specification for assembly purpose only.



13.13.8 For measuring the exhaust gas temperature, it is allowed to weld a socket on to the exhaust in an area 50-80 mm from the ball joint.

13.13.9 The use of maximum 4 pieces of original ROTAX exhaust springs to fix the exhaust to the cylinder is allowed (no safety wire allowed in exhaust flange area).

13.14 Noise Emissions

13.14.1 Noise isolating mat (see illustration exhaust system) must be replaced by an original BRP-Powertrain spare part if noise emission is exceeding 92 dB (A).

13.14.2 Noise emission measuring procedure:

At a section of the track where the engine is operated under full load at rpm range of 11-12,000, a microphone must be installed 1 metre above the level of the track and at a perpendicular angle to the track.

The distance between the microphone and the kart on the ideal line on the track should be 7.5 metres. The kart should be operated under full load on the ideal line on the circuit.

13.15 Seat Strut

Only one seat strut is authorized to be attached on the engine side.

The seat strut end must only be fastened to the engine using the threaded bolt hole designed for this purpose. This is shown in the picture (right). The seat strut may be installed on either side of the threaded bolt hole.



UAE ROTAX MAX CHALLENGE 2013-14 TECHNICAL REGULATIONS

APPENDIX FOR 125 MINI MAX AND 125 MICRO MAX VERSION 01.10.14

A1 – TECHNICAL SPECIFICATION (WITHIN ENGINE SEAL) FOR ROTAX KART ENGINE 125 MINI MAX (10 kW) AND 125 MICRO MAX (5 kW)

Please note that for engine configuration 125 Micro MAX and 125 Mini MAX, the technical specification of 125 Junior MAX is valid for anything unspecified below.

A1.1 Squish Gap

The squish gap must be measured with a certified slide gauge and by using a 3 mm tin wire for both 125 Mini MAX and 125 Micro MAX.

The crankshaft must be turned by hand slowly over TDC (top dead centre) to squeeze the tin wire. The squish gap must be measured on the left and right side in the direction of the piston pin. The average value of the two measurements counts.

Recommended 3mm tin wire (580 132)

A1.1.1 125 Mini MAX 2.40 - 2.70 mm

A1.1.2 125 Micro MAX 2.40 - 2.70 mm

To achieve this defined squish gap, a spacer (ROTAX part number 626 420) with a thickness of 1.25mm must be used along with the different required base gaskets.

A2 – TECHNICAL SPECIFICATION (OUTSIDE ENGINE SEAL) FOR ROTAX KART ENGINE 125 MINI MAX (10 kW)

Please note that for engine configuration 125 Mini MAX, the technical specification of 125 Junior MAX is valid for anything unspecified below.

It is the responsibility of the competitor to check all components outside the engine seal to ensure that they are in line with the technical specifications below.

A2.1 Intake Restrictor

A2.1.1 The intake restrictor (ROTAX part number 267 535) must be fitted between the carburettor flange and the carburettor.

A2.1.2 The intake restrictor must show an inner diameter of 19.0 mm +0.0/-0.2mm.

A2.1.3 The intake restrictor can be either blue anodised or white teflon.

A2.2 Exhaust Restrictor

A2.2.1 The exhaust restrictor (ROTAX part number 273 973) must be used instead of the original exhaust socket (fitted to cylinder).

A2.2.2 The exhaust restrictor must show an inner diameter not larger than 20.0 mm +0.2mm.

A2.2.3 Steel exhaust mat is an allowed option and should be fitted as specified in 11.11.10.

A2.3 Noise Emissions

A2.3.1 The noise isolating mat (see illustration 11.11) must be replaced by an original ROTAX spare part if the noise emission is exceeding 90 dB.

A2.3.2 Noise emission measuring procedure:

At a section of the track where the engine is operated under full load at rpm range of 9-10,000, a microphone must be installed 1 metre above the level of the track and at a perpendicular angle to the track.

The distance between the microphone and the kart on the ideal line on the track should be 7.5 metres. The kart should be operated under full load on the ideal line on the circuit.

A3 – TECHNICAL SPECIFICATION (OUTSIDE ENGINE SEAL) FOR ROTAX KART ENGINE 125 MICRO MAX (5 kW)

Please note that for engine configuration 125 Micro MAX, the technical specification of 125 Junior MAX is valid for anything unspecified below.

It is the responsibility of the competitor to check all components outside the engine seal to ensure that they are in line with the technical specifications below.

A3.1 Carburettor

A3.1.1 The spacer (pos 1 far right, ROTAX part number 251730) must be fitted in the carburettor to limit the opening of the throttle.

A3.1.2 The length of the spacer must be 38.0 mm \pm 0.2mm.

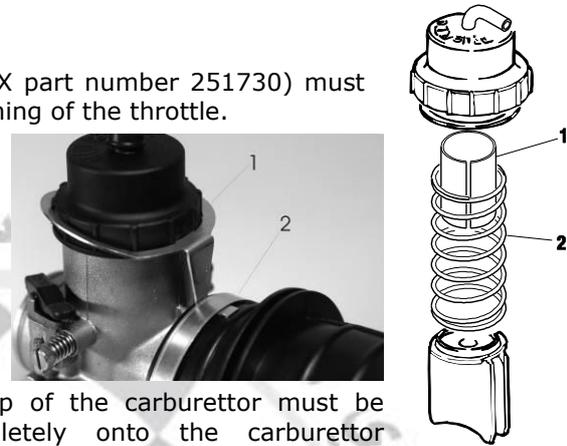
A3.1.3 The position of the cap of the carburettor must be fixed by means of the fixation plate (pos 1 in adjacent picture, ROTAX part number 251790).



A3.1.4 The cap of the carburettor must be screwed completely onto the carburettor (tight).

A3.1.5 Only 1 rubber gasket is allowed to be used in the carburettor cap.

A3.1.6 The tolerance gauge (ROTAX part no. 277400) must **not** be able to turn around (opening limit of carburettor slide)!



A3.2 Exhaust Restrictor

A3.2.1 The exhaust restrictor (ROTAX part number 273972) must be used instead of the original exhaust socket (fitted to cylinder).

A3.2.2 The exhaust restrictor must show an inner diameter no larger than 22.0 mm \pm 0.2mm.

A3.3 Radiator

A3.3.1 A specific Micro MAX radiator (ROTAX part number 295924 or 295923) must be used instead of the original radiator.

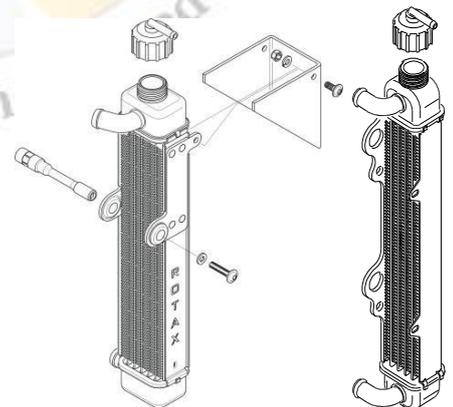
A3.3.2 Radiator must be mounted with all components similar to the illustrations (right).

A3.3.3 Cooling area:
Height = 280-300 mm; Width = 58-62 mm

A3.3.4 Thickness of radiator = 30-34 mm

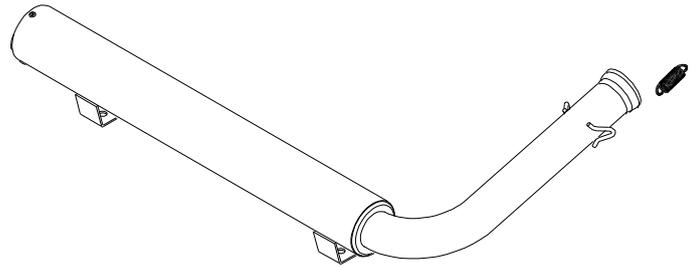
A3.3.5 No additional non-original cooling device is allowed. For version 1 and 2 tape applied around the radiator is the only allowed air flow control (other than the flap on version 2). Only plain tape (no advertising) is allowed. Tape may not be removed from the radiator during operation on the track. All other means of air flow control through the radiator are prohibited.

Removal of the original plastic flap (version 2) is an acceptable configuration.



A3.4 Exhaust System

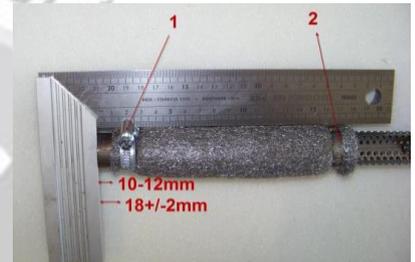
A3.4.1 The specific Micro MAX exhaust system must be used instead of the original exhaust system (see illustration). It should be installed according to the guidelines provided by ROTAX.



A3.4.2 The inner diameter of the 90° tube at the end of the silencer must be 15.0mm ±0.3mm.

A3.4.3 No exhaust leakage is allowed (no signs of oil). The use of heat resistant silicone is mandatory (XPS KartTec instant gasket black, ROTAX part no. 25151 or equivalent)

A3.4.4 In addition to the standard isolation mat a special steel mat (ROTAX part no. 297983) of square dimension 165 + 10 mm is legal to be assembled underneath the standard isolation mat (picture right). Clamp (1) must be fitted at a distance of 18 +/- 2 mm, measured from the end of the tube. Clamp (2) must be fitted at the end area of the steel isolation mat. Both clamps are mandatory. 10-12mm is a specification for assembly purpose only



A3.4.5 For measuring the exhaust gas temperature it is allowed to weld a socket onto the exhaust in an area of 50 - 80 mm from the ball joint.

A3.4.6 The exhaust cover outlet must be installed as supplied by ROTAX in the downward pointing position.

A3.4.7 The usage of 4 attachment springs from the exhaust pipe to the exhaust socket is mandatory (Rotax part no. 938795).

A3.4.8 No modification, damage or distortion of the exhaust pipe and exhaust socket is permitted.

A3.4.9 The exhaust flange and socket shape must be concentric.

A3.4.10 The exhaust must be mounted so that it is centred on the exhaust socket with even spacing all around.

A3.4.11 The exhaust must be fitted securely by means of both support lugs which are provided on the underside of the exhaust system for vibration damped suspension of the exhaust.

A3.4.12 The exhaust must be installed firmly using either one rigid pipe mount or 2 separate rigid brackets via 2 silent blocks (Rotax part number 660920 - one per support lug). The deflection of the 2 silent blocks is the only pipe movement allowed. The pipe must be mounted in a neutral position (ideally horizontal) with no stress on the 2 silent blocks.

A3.4.12 The exhaust screws or rivets on the return end plate should be tightly fastened.

A3.5 Noise Emissions

A3.5.1 The noise isolating mat (see illustration 11.11) must be replaced by an original ROTAX spare part if the noise emission is exceeding 90 dB.

A3.5.2 Noise emission measuring procedure:

At a section of the track where the engine is operated under full load at rpm range of 8-9,000, a microphone must be installed 1 metre above the level of the track and at a perpendicular angle to the track.

The distance between the microphone and the kart on the ideal line on the track should be 7.5 metres. The kart should be operated under full load on the ideal line on the circuit.