UAE ROTAX MAX CHALLENGE 2024-25

Organised by AL AIN RACEWAY KART CLUB

In Association With

SERIES TECHNICAL REGULATIONS

VERSION 01.09.24

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.
Please note that these Technical Regulations apply to the range of 125 MAX EVO engines only.

1 – GENERAL

1.1 – 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)

1.2 – AMOUNT OF EQUIPMENT

For each race event (from non-qualifying practice to the Final), unless otherwise specified in the Supplementary Regulations, the maximum amount of equipment is:

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

2 – EQUIPMENT

2.1 – CHASSIS

Chassis' with valid FIA Homologation since 2006 and approved by Al Ain Raceway (in collaboration with EMSO) will be sanctioned to race. Rotax RM1 chassis' can only be used with all original components mounted.

P.O.Box 85393. Al Ain. UAE.
+971 (0) 3 768 6662
info@alainraceway.com
www.alainraceway.com

125 MICRO MAX, 125 MINI MAX

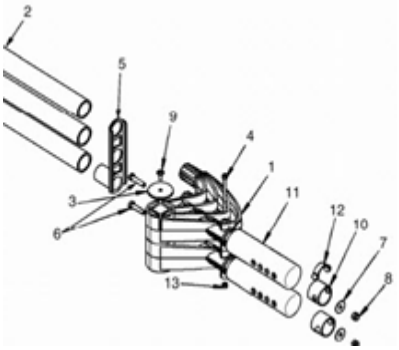
Any chassis sanctioned by Al Ain Raceway or with a valid CIK-FIA homologation is allowed
Wheel base: 950mm (±5mm), maximum overall width 1100mm
Diameter of main tubes 28 x 2 ± 0.1 mm, round tubing only
Front wheel hubs are permitted and "eccentrics" for the stub axles are allowed
Rear axle: 25mm or 30mm (solid or hollow), minimum wall thickness according to FIA
Brake system must work on rear wheels only and should have a valid FIA homologation
Front rims: maximum 120mm, minimum 105mm
Rear rims: maximum 150mm, minimum 140mm

125 JUNIOR MAX, 125 MAX

Any chassis sanctioned by Al Ain Raceway or with a valid CIK-FIA homologation is allowed
Maximum diameter of chassis tubing = 32 mm, round tubing only
Wheelbase = 1010-1070mm
Maximum diameter of rear axle = 50 mm, minimum wall thickness according to FIA
Maximum overall width 1400mm
Brake system must work on rear wheels only and have a valid FIA homologation
Front brakes are not allowed.

125 MAX DD2/Master

Any chassis sanctioned by Al Ain Raceway or with a valid CIK-FIA homologation is allowed
Chassis must be designed according to FIA rules for shifter classes (front and rear brakes mandatory). The brake system, bodywork and front bumper must have a valid CIK-FIA homologation.
Rear wheel protection system holding a valid CIK homologation or ROTAX Rear Tyre Protection System is legal 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 (except safety wire or bolt connection between between pos 1 and pos 2 in adjacent picture as well as number plate with support). Only orange or red original ROTAX tyre protection rollers are allowed to be used.



Chassis Protection

It is permitted to attach chassis protectors to the underside of the rails. Only plastic versions are allowed. NOTE: the type/installation/wear must satisfy the Scrutineers.
Sprocket protectors are permitted but these should be plastic or nylon. On safety grounds the use of metal sprocket protectors is prohibited.

2.2 – BODYWORK

In accordance with FIA Karting Technical Regulations Articles 9 & 10 unless specified otherwise above.

2.3 – 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.

Dry tyres:

125 Micro MAX	MOJO C2	Front 4.0 x 10.0 - 5	Rear 5.0 x 11.0 - 5
125 Mini MAX	MOJO C2	Front 4.0 x 10.0 - 5	Rear 5.0 x 11.0 - 5
125 Junior MAX	MOJO D2	Front 4.5 x 10.0 - 5	Rear 7.1 x 11.0 - 5
125 MAX	VEGA XH3/4	Front 4.6 x 10.0 - 5	Rear 7.1 x 11.0 - 5
125 MAX DD2/Master	MOJO D5	Front 4.5 x 10.0 - 5	Rear 7.1 x 11.0 - 5

Wet tyres:

All classes	N/A

2.4 – 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, (vi) position (via GPS), (vii) steering wheel angle and (viii) pedal movement.
Connection of this system to the original ROTAX battery is allowed.

2.5 – 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.

2.6 – SAFETY EQUIPMENT

Race suit, helmet, kart boots, gloves and other items of driver protection must comply with Article 7 of the FIA Technical Regulations (see also UAE RMC Sporting Regulations 2023-24).

2.7 – FUEL/OIL

Petrol: unleaded commercial quality from petrol station, 95-98 octane.
Oil: XPS KART TEC fully synthetic 2T or XPS DYE fully synthetic 2T or XPS KART TEC Castor Racing Oil 2T is allowed, as stipulated by the event Supplementary Regulations.
For XPS DYE fuel colour must show up green under led light (e.g. INOVA X5 led light).

2.8 – ADVERTISING ON ENGINES

No sponsor stickers, badges, etc. (except ROTAX, BRP, MOJO, XPS, Al Ain Raceway and UAE RMC) are allowed on the engine or any of its accessories unless specifically directed by means of a Bulletin or Supplementary Regulation.

3 – ENGINES

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

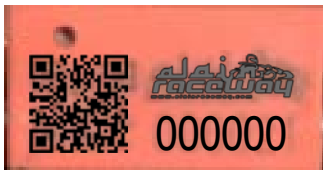
A brand new engine is always checked according to the Technical Specification before sealing. By sealing a new engine Al Ain Raceway (or their Service Centre) takes over the responsibility for the conformity of the engine according to the current technical specification (see also COMPETITOR BULLETIN REF 22020201).

After the first time of use the engine owner is responsible for ensuring that the engine specifications are checked routinely by an authorised Rotax service centre in order to ensure that its technical conformity [at the specific event] continues despite regular wear and tear as well as periodic updates to the valid technical regulations.

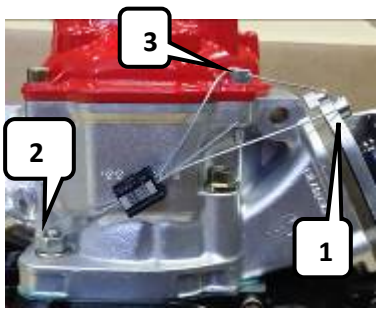
Engines must be secured with a custom Al Ain Raceway seal which displays a logo, unique serial number and accompanying QR code (see sample image below right). This seal will be fitted with installation specifics and measurements recorded against the associated engine service record to identify any case of removal/tampering/duplication.

These seals will be colour-coded such that, notwithstanding the configuration/specification of an engine unit, only engines bearing a seal with corresponding colour will be permitted for use in that specified category, as follows:

125 MICRO MAX	-	**RED**
125 MINI MAX	-	**WHITE**
125 JUNIOR MAX	-	**YELLOW**
125 SENIOR MAX	-	**GREEN**
125 MAX DD2	-	**GREEN**



Additionally, 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 mandatory to pass the end of the sealing wire through the seal twice (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 appointed Service Centre) 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.

Only Al Ain Raceway will be allowed to re-seal an engine between Scrutineering and the Final in the case of an engine inspection/failure/repair.

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

4 – MODIFICATIONS, REPAIRS, ADDITIONS:

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 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 three per engine) or cylinder (max three per cylinder) using a 'heli-coil' or similar is allowed. 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. These must originate from Al Ain Raceway.

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

4.2 – 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.

4.3 – LEGAL ADDITIONS

Chain guard, engine mount, temperature gauge and tachometer/hour meter, catch-cans for liquids with mounting brackets.

4.4 – 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.

4.5 – MEASUREMENTS

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.

In order to avoid excessive noise and exhaust emissions, revving the engine in the paddock area is not permitted. A short function test of maximum time 5 seconds is permitted within the start servicing park (after fitting of fuel tanks) before the Pre Grid.

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

5 – TECHNICAL SPECIFICATION (WITHIN SEAL) FOR ROTAX MAX KART ENGINES

5.1 – SQUISH GAP

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.

125 MINI MAX, 125 JUNIOR MAX, 125 MAX, 125 MAX DD2

The squish gap must be measured with a certified slide gauge and by using a 2 mm tin wire. *Recommended 2mm tin wire (580 130)*

125 Mini MAX	minimum = 1.20 mm
125 Junior MAX	minimum = 1.20 mm
125 MAX	minimum = 1.00 mm
125 MAX DD2	minimum = 1.30 mm

125 MICRO MAX

The squish gap must be measured with a certified slide gauge and by using a 3 mm tin wire. *Recommended 3mm tin wire (580 132)*

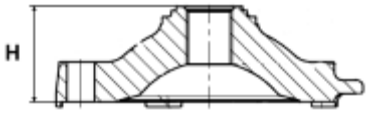
125 Micro MAX	minimum = 2.40 mm

To achieve this defined squish gap, a spacer (ROTAX part number 626420) with a thickness of 1.25mm must be used in combination with at least two cylinder base gaskets (one above the spacer and one below the spacer).
Please note that the authorised sealing authority may impose at their sole discretion a non-negotiable minimum squish gap value which is greater than the above in order to reduce the risk of technical non-conformity due to carbon build-up on the piston.

5.2 – COMBUSTION CHAMBER INSERT

5.2.1 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)*

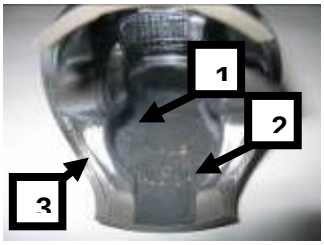
5.2.2 Cast wording "ROTAX" and/or "MADE IN AUSTRIA" must be shown *(see picture right)*



5.2.3 Heights of combustion chamber insert must be 28.80 mm +/- 0.2 mm (H)

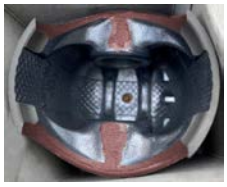
5.2.4 The profile of the combustion chamber insert must be checked with a template (ROTAX part no. 277 390). The crack of light between the template and the profile of the combustion chamber insert must be the same over the whole profile.

5.3 – PISTON WITH RING ASSEMBLY



5.3.1 Original, coated aluminium, cast piston with one piston ring. The piston must show on the inside the cast wording "ELKO" (1) and "MADE IN AUSTRIA" (2).

5.3.2 The area marked red (*pic below right*) can show signs of pre-existing factory removal. Machined areas are: top end of piston, outside diameter, piston ring groove, piston pin bore, 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.



Any mechanical treatment or rework of the piston is forbidden. Altering the profile of the piston by reworking carbon build-up is forbidden. If carbon is removed it must be consistently removed across the entire surface without altering the profile of the piston itself. For example, selectively removing carbon in the squish measurement areas is forbidden.

5.3.3 Original, magnetic, rectangular piston ring.
Ring height: 0.98 +/- 0.02 mm

Piston ring is marked either with "ROTAX 215 547", "ROTAX 215 548", "ROTAX 215 548 X" or "I ROTAX 215 548 X".
The ring is legal also if only parts of the marking are still visible.

5.4 – PISTON PIN

5.4.1 Piston is made out of magnetic steel.

5.4.2 Dimensions must be according to the drawing.

5.4.3 The minimum weight of the piston pin must not be lower than 31.00g

5.5 - CYLINDER

Light-alloy-cylinder with GILNISIL or Nikasil plating. Any re-plating of cylinder is not allowed. Maximum bore of cylinder = 54.035mm (measured 10mm above exhaust port)

5.5.1 Cylinder Specification / Markings

Cylinder must be marked with the "ROTAX" or “ROTAX RACING” logo.

125 MICRO MAX and 125 MINI MAX

Cylinder with one main exhaust port and without exhaust valve.

Only cylinders marked with identification code 413530 are legal to be used and must be marked with the “ROTAX RACING” logo.

125 JUNIOR MAX

Cylinder with one main exhaust port and without exhaust valve.

Cylinders marked with identification code 223 994 or 413530 (marked with the “ROTAX RACING” logo), only are legal to be used.

125 SENIOR MAX

Cylinder with one main exhaust port and exhaust valve.

Cylinders marked (cast or machined) with identification code 223 993 or cast 413531 (marked with the “ROTAX RACING” logo) only are legal to be used.

125 MAX DD2

Cylinder with one main exhaust port, two side exhaust ports and exhaust valve.

Cylinders marked with identification code 613 933 or cast 613934 (marked with the “ROTAX RACING” logo) only are legal to be used.

Revised cylinders 413530, 413531 and 613934 are all marked with the “ROTAX RACING” logo shown here.

<u>Note</u>: For UAE RMC events from 2025-26 season onwards it is likely that the only cylinders allowed for racing are ID Codes 413530 (Junior MAX), 413531 (MAX) and 613934 (DD2).

5.5.2 Height of Cylinder

Measured with a digital caliper min length 200mm

125 Micro MAX, 125 Mini MAX	87mm -0.05/+0.1mm
125 Junior MAX, 125 MAX	87mm -0.05/+0.1mm
125 MAX DD2	86.7mm -0.05/+0.1mm

5.5.3 Cylinder Surfaces (Cylinder ID Code 223994, 223993, 613933)

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 upper right*).

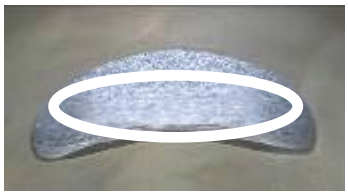
All ports have chamfered edges *(see picture right)*. Any additional machining is not permitted.

On cylinders marked 223993, 223994 and 613933 the upper edge of the central boost port may show factory machining *(see picture left)*.

The flange for the exhaust socket may show either cast finish or machined surface *(see picture right)*.

Machined surface can be either flat or show a circular sealing bump.

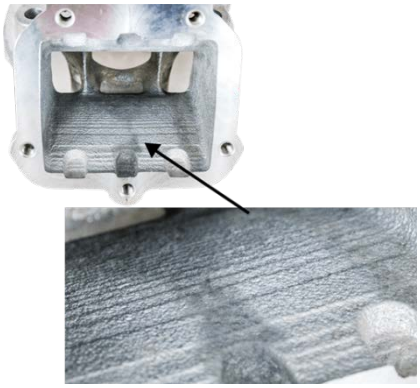
The top edge of the exhaust port may show either just a cast finish surface *(picture below left)* or signs of a CNC machining *(picture below centre)* or signs of CNC machining in combination with signs of manual grinding *(picture below right)*.



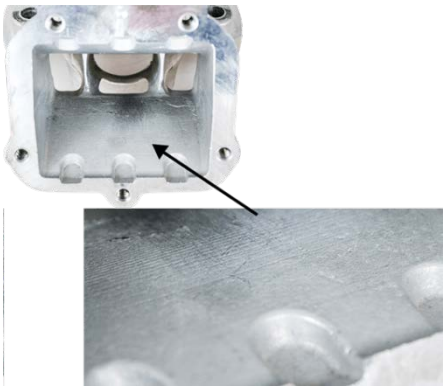
The exhaust port may show partial manual grinding done by the manufacturer to eliminate minor casting defects and to eliminate the NIKASIL burr at the end of the NIKASIL plating.

Cylinders marked 223994, 223993 and 613933 may show in the inlet port a linear texture.

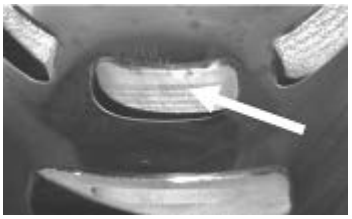
Single Core Cylinder showing linear structured cast surface finish:



Previous manufacturing method showing cast surface finish:



Cylinders marked 223994, 223993 & 613933 with linear texture in the inlet port show a fully CNC machined exhaust port and a fully CNC machined top edge of the central boost port.



5.5.4 Cylinder Surfaces (Cylinder ID Code 413530, 413531, 613934)

All transfer ports and passages (1) have a uniform smooth cast finish.

All ports, port heights and chamfer of the ports show signs of extended CNC control machining (2).

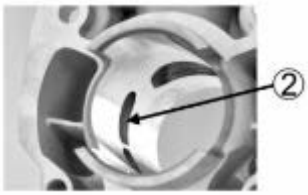
The sealing flange for the exhaust socket shows a cast finish.

Any additional machining is not permitted.

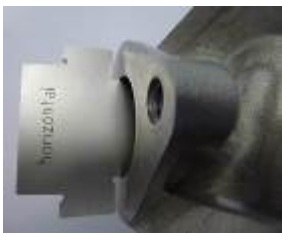
All cylinders are marked with the ROTAX RACING logo (5) and QR code (4). It is allowed to use a cylinder with a faded or worn QR code.

For Cylinders marked 413531 and 613934 a Nikasil plated stop for the exhaust valve is present (3).

Any additional machining is not permitted.



5.5.5 Exhaust Port Shape



Horizontal and vertical dimensions of the exhaust port must be checked with the corresponding template which must be moved as far as possible [in both directions] into the exhaust port.

The template must not touch the exhaust socket flange in either direction.

Note: This is checked without the gasket between the cylinder and exhaust socket.

Cylinder 223994 (fully CNC machined exhaust port only) using Part no. 676240.
Cylinder 223993 (fully CNC machined exhaust port only) using Part no. 676245*.
Cylinder 413530 (normal cast surface finish) using Part no. 676242.
Cylinder 413531 (normal cast surface finish) using Part no. 676247.

5.5.6 Exhaust Port Timing (Cylinder ID Code 223994, 223993, 613933)

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 277402).

Taking care to use the correct gauge (JUNIOR, MAX or DD2), the template should be inserted into the cylinder and moved as far as possible into the exhaust port (at the highest point of the exhaust port).

In this position the template may not touch the cylinder wall.

5.5.7 Exhaust Port Timing (Cylinder ID Code 413530, 413531, 613934)

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 277404).

Taking care to use the correct gauge (JUNIOR, MAX or DD2), the template should be inserted into the cylinder and moved as far as possible into the exhaust port (at the highest point of the exhaust port).

In this position the template may not touch the cylinder wall.

5.6 – INLET SYSTEM

5.6.1 Inlet Manifold

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.

125 MICRO MAX, MINI MAX, 125 JUNIOR MAX, 125 MAX
Inlet manifold is marked with identification code “267915” and "ROTAX" or just “267916”

125 MAX DD2
Inlet manifold is marked with identification code “267410” and “ROTAX" or just “267411”

5.6.2 Reed Valve Assembly

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

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

Flattening of the curved reed valve stopper plates is forbidden. Stopper plates must retain the original profile (bending).

The measurement between the 2 stopper plates is taken using a digital calliper from the inside surface of the stopper plates in line with the middle of each reed petal, as indicated by the red lines in the picture.

125 JUNIOR MAX, 125 MAX, 125 MAX DD2

Both Rotax Part No. 224380 (MOD.20) and 224389 (old version) are legal to be used.
It is also legal to use the new reed petals (Rotax Part No. 224431) in combination with old version reed block (224389).

In all cases the minimum gap between the stopper plates must be greater than 18.00mm.
Please note that Al Ain Raceway (and their appointed service centres) will set the distance between the stopper plates within the range of 19mm +/- 0.5mm.

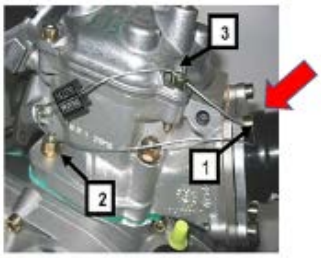
125 MICRO MAX, MINI MAX

Only MOD.20 reed valve assembly (Rotax Part No. 224380) is allowed to be used.

In all cases the distance between the stopper plates must be greater than 15.50mm.
Please note that Al Ain Raceway (and their appointed service centres) will set the distance between the stopper plates within the range of 16.00mm +/- 0.2mm.

It is mandatory to add 2 x additional “distance plates” to the reed block assy. These must be secured tightly between the reed petals and the curved stopper plate on both sides of the reed assembly and in the order as show in the diagram. The ROTAX markings must be facing the stopper plate as shown.

It is allowed to install up to 2 gaskets between the reed block assembly and the cylinder.



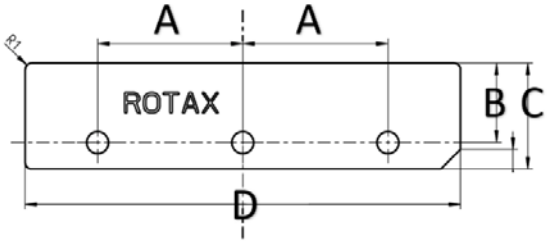
For information only / non-tech item: The assembly should utilise only oval head screws M3x6 (ROTAX Part number 240351) rather than taptite fixings.

For identification purposes that the distance plates are installed, a M6 washer should be placed under the bolt which is secured with the seal in position 1 as indicated in the picture.

The 2 x distance plates must be engraved ROTAX (as per the drawing below) with the part number 910224380 visible on the plate.

The plate must be flat with no curvature (when held against a straight edge no crack of light should be visible between the two surfaces) and meet the below specification:

A = 22.00mm +/- 0.2mm
B = 10.00mm +/- 0.3mm
C = 16.00mm +/- 0.3mm
D = 66.00mm +/- 0.7mm
Plate thickness = 0.70mm +/- 0.08mm
Location holes = 3.3mm +/- 0.2mm



5.7 – CRANKSHAFT

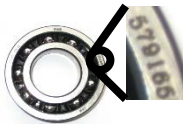
5.7.1 Con rod

Stroke 54.5 mm +/-0.1 mm
Con rod must show forged numbers "213", "365", "367" or "362" on shaft.
Shafts of con rods "213", "365" and "367" are not machined and are copper plated.
Shaft of con rod "362" is not copper-plated and is blank (grey/brown).
Grinding or polishing of shaft of con rod is not permitted.

5.7.2 Ignition Signal on Crankshaft

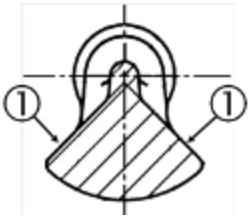
Template (Part no. 277391) should be fitted on the crankshaft so that the hole for the big end pin is aligned with the big end pin itself. The 2 edges of the signal machining on the crankshaft must be in line (+/- 0.5 mm) with the corresponding edges (MAX or DD2) of the template.

5.7.3 – Crankshaft Main Bearings



Crankshaft main bearing 6206 from FAG only is allowed and must be marked with code **579165BA** or **Z-579165.11.KL** or **Z-579165.21.KL**

5.8 – BALANCE SHAFT

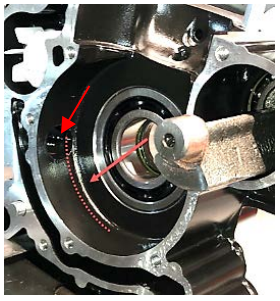


125 MICRO MAX, 125 MINI MAX, 125 JUNIOR MAX, 125 MAX
Balance shaft and balance gears must be installed.
Balance shaft must show casting code 6237948 or 6237949 on surface (1).
Surface (1) is not machined and must show cast surface.
The minimum weight of the dry balance shaft must not be lower than 255g.

5.9 – 2-SPEED GEARBOX

125 MAX DD2
Primary shaft with 19 teeth for 1st gear and 24 teeth for 2nd gear
Idle gear for 1st gear must have 81 teeth.
Idle gear for 2nd gear must have 77 teeth.

5.10 – CRANKCASE



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

Machining may be evident in the crankcases in the area identified in the picture and in the ignition crank sensor bore area.

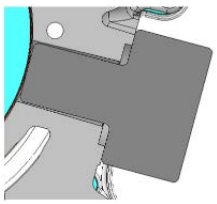
125 JUNIOR MAX, 125 MAX, 125 MAX DD2

Only black coated crankcases are legal to be used.

125 MICRO MAX, 125 MINI MAX

The only crankcases legal to be used will be black coated [of the original machined pick-up flange type] with casting codes 6211885 (ignition sensor side) and 6211893 (clutch side).

125 MICRO MAX, 125 MINI MAX, 125 JUNIOR MAX, 125 MAX, 125 MAX DD2



<u>Note</u>: Below only valid for original machined pick-up flange type with casting codes 6211885 (ignition sensor side).

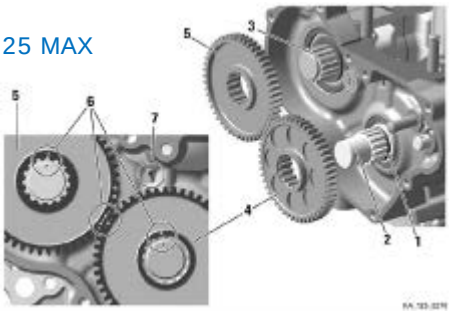
When inserting ignition distance control gauge (277406) in a vertical direction into the bore for the ignition sensor, the gauge must fully touch the stopper surface of the crank case. No gaps must be visible in the facing areas.

6 – TECHNICAL SPECIFICATION (OUTSIDE SEAL) FOR ROTAX KART ENGINES: 125 MICRO MAX, 125 MINI MAX, 125 JUNIOR MAX, 125 MAX, 125 MAX DD2

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.
These Technical Regulations apply to the range of 125 MAX EVO engines only.

6.1 – BALANCE DRIVE

125 MICRO MAX, 125 MINI MAX, 125 JUNIOR MAX, 125 MAX



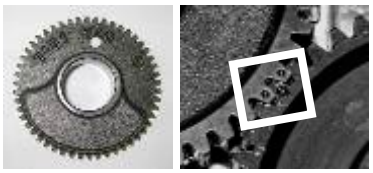
Balance gears must be installed and aligned according to the instruction in the repair manual.

Only steel balance gears (minimum width 8.8mm) are legal to be used. The minimum weight of a dry balance gear must not be less than 134g.

125 MAX DD2

Balance drive gear must be fitted on crank shaft.

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.



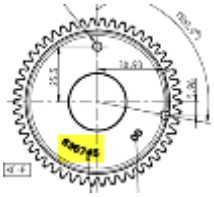
Version 1:
Fly weight of balance gear must show cast surface.

Version 2:
Fly weight of balance gear can show machined surface.

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

The minimum weight of a dry balance gear including bearing must not be less than 240g.

Version 3:
Number 635745 visible on the gear



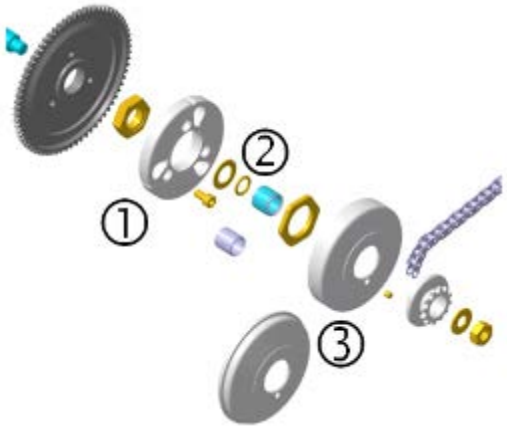
Fly weight of balance gear can show machined surface.

The minimum weight of a dry balance gear including bearing must not be lower than 255g.

6.2 – CENTRIFUGAL CLUTCH

6.2.1 Clutch Components

125 MICRO MAX, 125 MINI MAX, 125 JUNIOR MAX, 125 MAX



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

Both versions of clutch (item 1 on diagram, with/without holes) are legal to be used. Both are marked “ROTAX”.

O-Ring (item 2) must be fitted and must ensure appropriate sealing between the clutch drum and the needle/plain bearing.

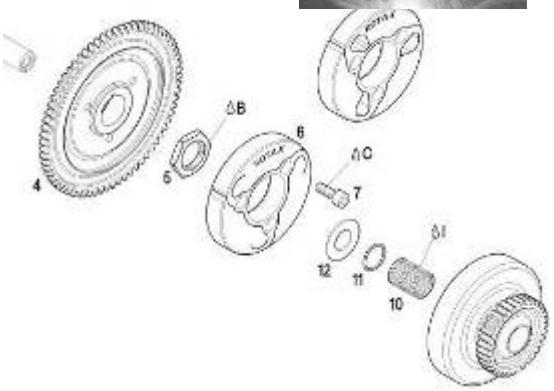
Two versions of the clutch drum (item 3 on diagram) are legal to be used. Both are marked “ROTAX”.

Signs of emission of grease from the needle/plain bearing may not exceed the adjacent picture.

The contact area between the clutch and clutch drum must be completely dry at all times – no lubrication allowed under any circumstances!

125 MAX DD2

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



Both versions of clutch (item 6 on diagram, with/without holes) are legal to be used.

O-Ring (item 11) must be fitted.

6.2.2 Clutch dimensions

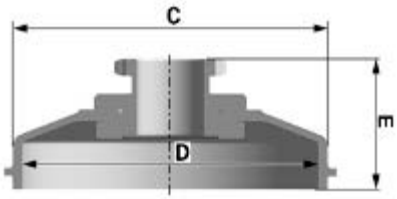
Thickness of clutch shoe (A):
Measurement must be done at the 3 open ends of the clutch shoes, 5-10mm from the machined groove. All clutch shoes must be completely closed (no gap).

125 MICRO MAX, 125 MINI MAX, 125 JUNIOR MAX, 125 MAX, 125 MAX DD2
Minimum = 24.10 mm

Height of clutch (B):

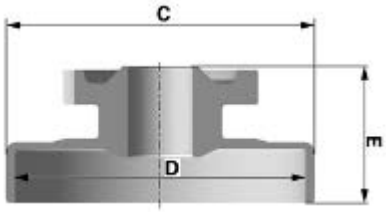
125 MICRO MAX, 125 MINI MAX	minimum = 11.45 mm
125 JUNIOR MAX, 125 MAX	minimum = 11.45 mm
125 MAX DD2	minimum = 14.45 mm

Outer diameter of clutch drum (C):
Diameter must be measured with a sliding caliper beside the radius from the shoulder (not at the open end of the clutch drum).



125 MICRO MAX, 125 MINI MAX	minimum = 89.50 mm
125 JUNIOR MAX, 125 MAX	minimum = 89.50 mm
125 MAX DD2	minimum = 89.50 mm

Inner diameter of clutch drum (D):
The inner diameter must be measured with a sliding caliper. The measurement must be taken in the middle of the clutch drum (in the contact area between clutch and clutch drum).

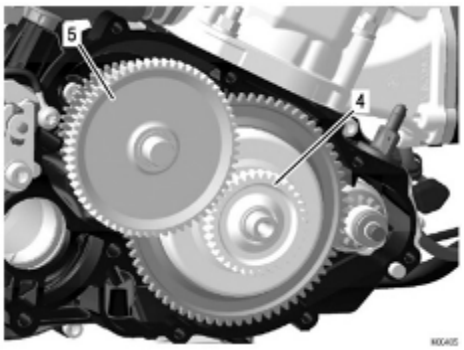


125 MICRO MAX, 125 MINI MAX	maximum = 84.90 mm
125 JUNIOR MAX, 125 MAX	maximum = 84.90 mm
125 MAX DD2	maximum = 84.90 mm

Height of clutch drum with sprocket / primary gear (E):

125 MICRO MAX, 125 MINI MAX	minimum = 33.90 mm
125 JUNIOR MAX, 125 MAX	minimum = 33.90 mm
125 MAX DD2	minimum = 39.50 mm

6.3 – PRIMARY DRIVE (125 MAX DD2)



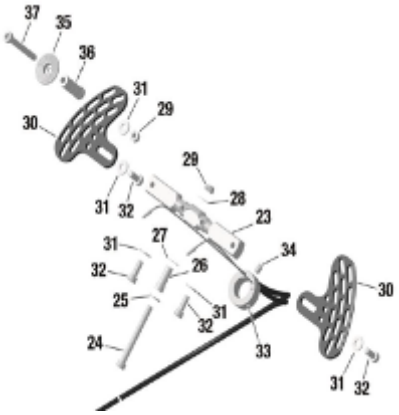
Original drive gears (4+5) of following gear ratio combinations are legal to be used:

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

A specific primary gear ratio may be determined for each race event by a “Supplementary Regulation” or “Bulletin”.

6.4 – GEAR SHIFTING (125 MAX DD2)

The 2-speed gearbox must be operated from the steering wheel via the original Rotax paddle shift system (*pic below right*).

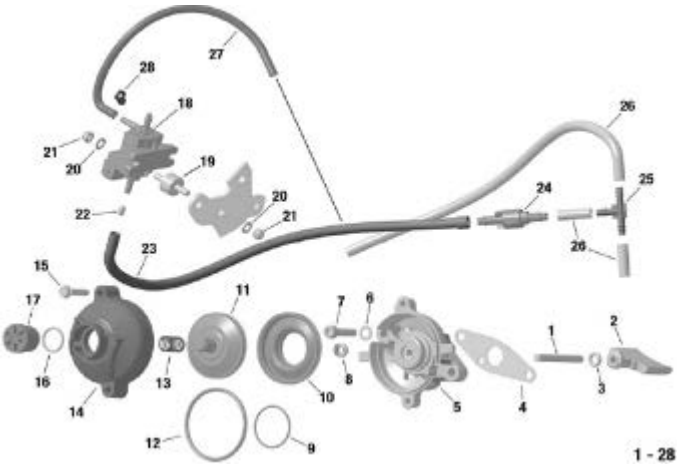


Cutting of the original aluminium shift paddles (item 30) or the adding of non-original parts is not allowed.
Mounting the shift paddles (30) on the bottom or top side of the whip (item 23) is an allowed adjustment.
Optional parts (items 35-37) can be mounted on the shift paddle in any position.

Bending the aluminium shift paddles to align them to the steering wheel is an allowed adjustment.
The whip (23) offers two connections for the cables on each side for short travel or long travel. Both connections are legal to be used.
To change the connections of the cables to the whip (23) from left to right and right to left is an allowed adjustment

6.5 – ELECTRONIC TIMED EXHAUST VALVE (125 MAX, 125 MAX DD2)

System must be used as supplied with all components fitted as shown in the illustration with the exception of the impulse nozzle (item 22) which is optional.



If used, the impulse nozzle must be fitted inside the pressure hose (item 23). The direction of the impulse nozzle is free.

Compression spring (item 13, part number 239952) length 48.5mm must be fitted.

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

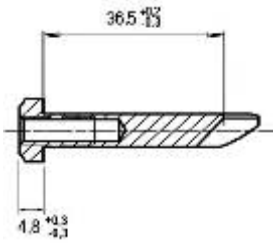
The cylinder protection plate (*see pic right* - ROTAX part number 251336) is mandatory to be installed with cylinder 223933 and 613933 and must have a minimum thickness of 0.08 mm.

The cylinder protection plate is not symmetrical. In combination with the electronic RAVE system, the plate must be installed such that the impulse hole of the cylinder is **closed**.

It is possible for the cylinder protection plate to show signs of wear or damage.

For clarification, the cylinder protection plate is not to be used for cylinders 413531 and 613934.

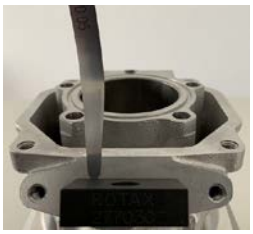
6.5.1 Exhaust valve



Uncoated or hard anodized exhaust valve are both legal for use as supplied by the manufacturer with no modification allowed.

Length of exhaust valve is 36.5 mm +0.20 mm/-0.30 mm.
Width of collar is 4.8 mm +/-0.3 mm

6.5.2 Distance of exhaust valve flange at cylinder to piston (Cylinder ID Code 223993, 613933)



With the exhaust port closed by the piston, insert exhaust valve gauge (Rotax 277030) until it stops at the cylinder flange.

A feeler gauge 0.05mm may not fit between the gauge and the flange.

This measurement must be performed outside of the exhaust valve contact area indicated in red (*picture right*).

6.5.3 Distance of exhaust valve flange at cylinder to piston (Cylinder ID Code 413531, 613934)

With the exhaust port closed by the piston, insert exhaust valve gauge (Rotax 277032) until it stops at the cylinder flange.

The distance from the end of the gauge to the stopper surface of the cylinder must not exceed 25.00mm.

This measurement must be performed on both upper and lower sides (*by inverting the template*).

6.5.4 Exhaust valve settings

The electronic timed exhaust valve offers two different settings (A or B) for the opening of the exhaust valve. Both settings are legal to be used.

(A) additional ground cable not connected

(B) additional ground cable connected

6.6 – IGNITION SYSTEM

Digital battery ignition system with variable ignition timing as supplied by the manufacturer. No adjustments necessary or possible.

6.6.1 Spark Plug

Spark plug – only the following are legal to be used:
NGK **GR8DI** or **GR9DI** or DENSO Iridium **IW 34**

Electrode gap

125 MICRO MAX, 125 MINI MAX

Minimum	0.50 mm
Maximum	Feeler gauge 1.20mm must not fit in between the two electrodes.

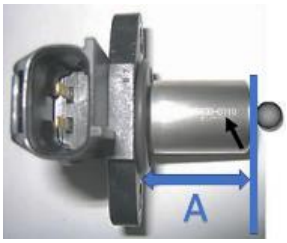
125 JUNIOR MAX, 125 MAX, 125 MAX DD2

Minimum	0.50 mm
Maximum	Feeler gauge 1.00mm must not fit in between the two electrodes.

6.6.2 Spark Plug Cap

Spark plug cap – two versions are legal to be used:
Version 1: Red, marked “NGK” (Rotax Part No. 866707)
Version 2: Red, marked “ROTAX” (Rotax Part No. 866700)

6.6.3 Pick-Up

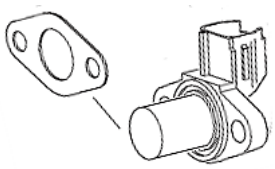


The marking of the pick-up must show the following numbers in the first line 029600-0710 (*see pic right*).

A steel ball (diameter 3-5 mm) placed on the circular surface of the sensor must stay in the centre of the circular surface.

The length from the sealing face / surface to the end of the pick-up, as defined in the picture (A), must not exceed 26.3mm. Measurement must be completed with gaskets removed.

Signs of grinding or removal of material on the sealing face is strictly forbidden.



Mounting the pick-up to the crankcase with a (1) gasket additional (Rotax Part No. 431500, thickness 0.8mm) to the original rubber sealing ring of the pick-up, **is mandatory** for all engines not using the original machined pick-up flange type with casting codes 6211885 (ignition sensor side).

A maximum of 2 additional gaskets (431500) are allowed to be fitted, in the following order:
Crankcase – rubber sealing ring – additional gasket(s) – pick-up.

A used additional gasket (431500) must always have a thickness greater than 0.5 mm.

Note:
It is not necessary to install any additional gasket/s with the exception of the rubber sealing ring on original machined pick-up flange type with casting codes 6211885 (ignition sensor side) for the pick-up sensor (see also 5.10).

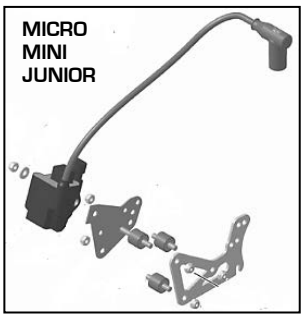
6.6.4 Ignition System

Only the Dellorto ignition system is legal to be used.

The visual appearance of the ignition coil must be identical to the adjacent pictures.

Ignition coil must show 2 pins at the terminal.

The ignition coil is labeled with two stickers, “BRP 666820” (or “BRP 666820-01”) and “NIG 0105”. The ignition coil is still legal to be used if one or both stickers is/are faded or missing.

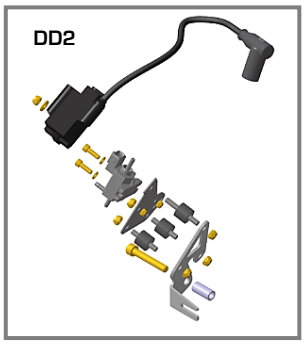


The minimum length of the high tension cable of the ignition coil is 210 mm from outlet of ignition coil to outlet of spark plug connector (visible length of cable).

The ignition coil is the same for all MAX EVO engine variants with separate electronic box (ECU, specific for each engine type).

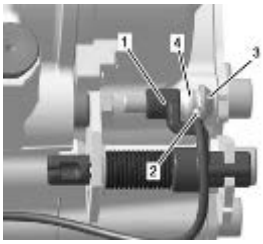
Both the ignition coil and ECU (and magnet valve *125 MAX* and *125 MAX DD2* only) must be fitted with all components according to the adjacent illustrations:

Pic upper right – 125 MICRO MAX, 125 MINI MAX, 125 JUNIOR MAX
Pic lower right – 125 MAX
Pic lower far right – 125 MAX DD2



In case the mounting bracket (*125 Micro MAX, 125 Mini MAX, 125 JUNIOR MAX* and *125 MAX* only) is in conflict with a chassis component, the additions of 2 spacers, one per mounting hole, with a maximum thickness of 20mm, between the mounting bracket and the gearbox cover is allowed.

For 125 MAX DD2 the electrical contact at the shift assembly must be connected as per the picture (right).



Removing the black coating of the gearbox cover (*125 MICRO MAX, 125 MINI MAX, 125 JUNIOR MAX* and *125 MAX*) in specific areas defined by Rotax (for mass connection between cable harness and engine) is a legal modification.

6.6.5 ECU

Each electronic control unit (ECU) is labeled with a sticker but is still legal if the sticker is unreadable or is missing.

125 MICRO MAX:	"666815"
125 MINI MAX:	"666818"
125 JUNIOR MAX:	"666813"
125 MAX:	"666815"
125 MAX DD2:	"666816"

The ECU must be checked using ECU tester (Rotax part no. 276230) according to following procedure:

- Disconnect engine cable harness from ECU
- Connect ECU tester cable harness to ECU
- Connect energy cable of ECU tester cable harness with the charging connector of engine cable harness.
- Start the test by pressing the button "✓" on the ECU tester.

After approx. 3 seconds the type of ECU ① that is actually tested will be indicated [in the second line of the display].
After approx. 30 seconds the result ② of the test will be indicated [in the first line of the display].

The test must be performed using the software version **2V00** of the ECU tester (indicated when connected to the battery).

The ECU tester has to indicate following results:

125 MICRO MAX category
① 666815MAX
② !! Test OK !!

125 MINI MAX category
① 666818MINIMAX
② !! Test OK !!

125 JUNIOR MAX category
① 666813JNRMAX
② !! Test OK !!

125 MAX category
① 666815MAX
② !! Test OK !!

125 MAX DD2 category
① 666816MAXDD2
② !! Test OK !!

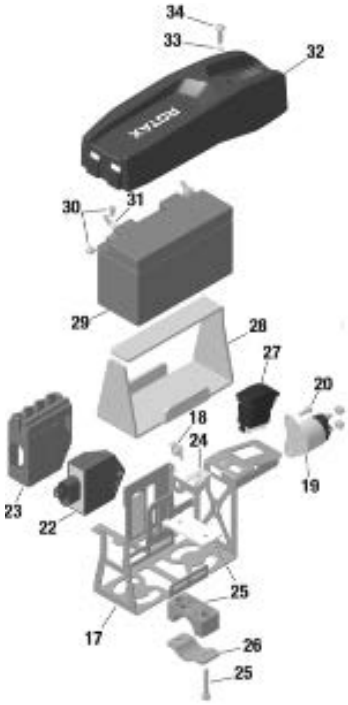
6.7 – BATTERY AND BATTERY FIXATION

Original batteries with the following specification only are legal to be used:

YUASA YT7B-BS (with and without Rotax branding)
ROTAX RX7-12B or RX7-12L or **ROTAX** LiFePo4 (lithium iron phosphate type)

Battery clamp must be mounted on the left side of the chassis (next to the seat).

Battery must be fitted with original battery clamp and battery cover and must be fixed to the chassis with both clamps (at least 4 screws), as shown in the below illustrations:



Two different battery clamps (item 17) are allowed, either with the cable support clamp (Rotax Part No. 251129) or without (Rotax Part No. 251127).

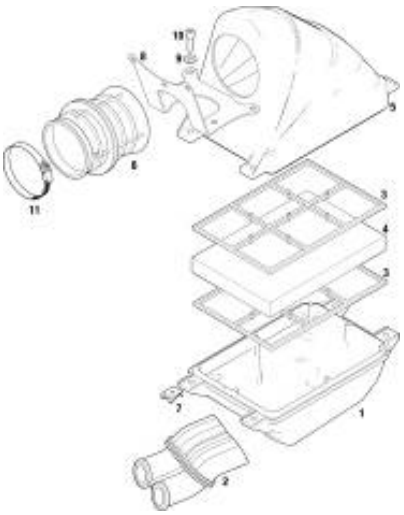
When using the more flexible wiring harness (Rotax Part no. 666836), it is mandatory to use the battery holder with cable support (Rotax Part No. 251129) and install as shown in the picture (below) to ensure that the connections are not under stress.

Two versions of wiring harnesses are allowed to be used, identifiable as follows:

	WIRING HARNESS 666835	WIRING HARNESS 666836
ECU CONNECTOR:		
CHARGING CONNECTOR:		
SOLENOID CONNECTOR:		

6.8 – INTAKE SILENCER

125 MICRO MAX, 125 MINI MAX, 125 JUNIOR MAX, 125 MAX



Intake silencer with integrated, washable air filter must be used with all parts as shown in illustration and must be mounted on the support bracket with two screws (in dry and wet race condition).

Intake silencer tube (pos 2) and carburettor socket (pos 6) are only legal if marked with “ROTAX”.

The intake silencer case bottom is marked on the inside with ROTAX part no. 225015.

The intake silencer case top is marked on the inside with ROTAX part no. 225025.

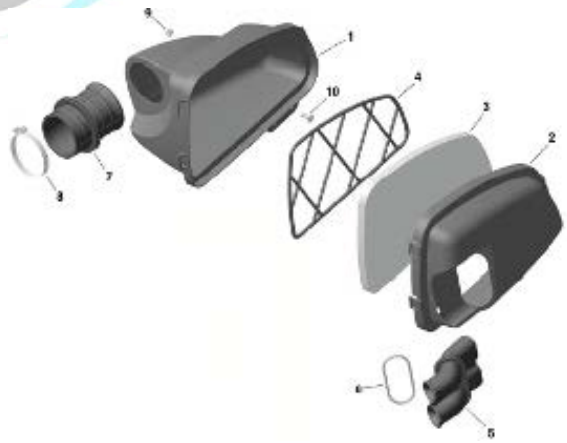
Air filter (pos 4) must be installed as shown in illustration between the two holders (pos 3) and must cover the complete area of the intake silencer bottom (pos 1).

It is not allowed to attach anything to the air box to protect the air inlet from water spray even in wet conditions.

Two versions of original air filter (pos 4) are legal:
Version 1 – double layer (green/orange)
Version 2 – double layer (green/dark green) marked “TwinAir”.

Depending on the degree of oil-lubrication colours may alter slightly or the surface becomes stained (see examples right).

125 MAX DD2



Intake silencer with integrated, washable air filter as shown in illustration.

The intake silencer case (pos 1) is marked on the inside with ROTAX part no. 225012 (4 clips) or 225013 (5 clips).

The intake silencer cover (pos 2) is marked on the inside with ROTAX part no. 225022 (4 clips) or 225023 (5 clips).

Two versions of air filters (pos 3) are legal:
Version 1 – integrated steel frame
Version 2 – separate plastic frame (pos 4)

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.

Use of the O-ring (pos 6) on the intake silencer tube is mandatory for ROTAX part no. 225022 (4 clips).

Sealing the top of the airbox using adhesive tape is an allowed modification.

Intake silencer tube (Pos 5) and carburettor socket (Pos 7) are marked with the wording "ROTAX".

It is not allowed to attach anything to the air box to protect the air inlet from water spray even in wet conditions.

6.9 – CARBURETTOR

125 MICRO MAX, 125 MINI MAX, 125 JUNIOR MAX, 125 MAX, 125 MAX DD2

Dellorto carburettor housing must show the cast wording “VHSB 34”.
DELL’ORTO carburettor with “XS” stamped on the carburettor housing.

The complete inlet bore of the carburettor must show cast surface.
The venturi hole of the carburettor insert can show signs of a CNC control machining.

Optional carburettor plug screw (*pic right* – ROTAX part no. 261030) is legal to be used.

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.

Settings of the carburettor adjustment screws (idle and idle air) are free.
The position of the jet needle is free.

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

Fuel sieve

Carburettor can be used with and without fuel sieve in the carburettor housing.

The carburettor slide must show size “45” in casting.

Jet needle must be stamped with “K57”.

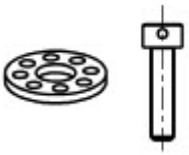
The height of the two arms of the float lever must be within the slot of the carburettor gauge (ROTAX part no. 277400) by their normal weight, measured at the carburettor housing in the reverse upright position <u>without</u> the gasket (*see pic right*).

Needle valve assembly is stamped “150”.
A pin gauge measuring 1.56mm must not pass through the bore of the Needle valve.

Needle of needle valve marked with diamond symbol “INC” only (*see picture right*)

Start jet is stamped with the digits “60”

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.



ONLY main jets contained within the following kits are allowed:

ROT281473	MAIN JET KIT 132+135+138+140+142
ROT281476	MAIN JET KIT 115+118+120+122+125+128+130
ROT281477	MAIN JET KIT 100+102+105+108+110+112
ROT281478	MAIN JET KIT 105-115 inclusive (11 consecutive main jets)
ROT281479	MAIN JET KIT 121-134 inclusive (14 consecutive main jets)
ROT282990	MAIN JET KIT 128-138 inclusive (11 consecutive main jets)
ROT282991	MAIN JET KIT 105-120 inclusive (16 consecutive main jets)

Further restrictions on the size of main jet may be determined for each race event by a Supplementary Regulation or Bulletin.

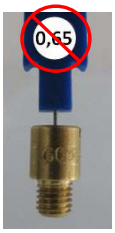
Only the following combination of floats/jets is legal:
Floats are marked with “4.0 gr”
Idle jet is stamped “60”
Idle emulsion tube is stamped “45"
Carb insert is stamped 12.5 (*see picture right*)

Needle jet must be stamped with "DP267" and have the following dimensions:

Total length 51.00 +/- 0.5 mm (*pic below left*)
Length of bottom section 33.00 +/- 0.45 mm (*pic below middle*)
Top bore diameter 2.67 +/- 0.10 mm (*pic upper right*)



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 (*pic right*).



Idle emulsion tube 45: using jet gauge set (ROTAX part no. 281920) it must not be possible for plug gauge 0.50 mm to enter the central bore (*pic far right*).

Carburettor insert 12.5 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 (*pic right*).

Vertical bore: using jet gauge set (ROTAX part no. 281920) it must not be possible for plug gauge 1.30 mm to fit (*pic far right*).

Carburettor insert may be used with 1 or 2 gaskets placed between the insert and body of the carburettor.

Atomiser must meet the following criteria:

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

Total length 23.75 +/- 0.35 mm (*pic below far left*)
Length of cylindrical part 15.75 +/- 0.25 mm (*pic below middle left*)
Dimension of cutaway 5.80 +/- 0.30 mm (*pic below middle right*)
Diameter of cross bore 5.00 +/- 0.15 mm (*pic below far right*)



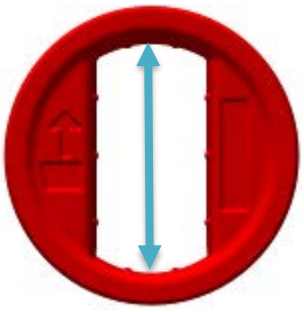
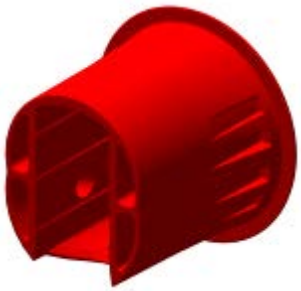
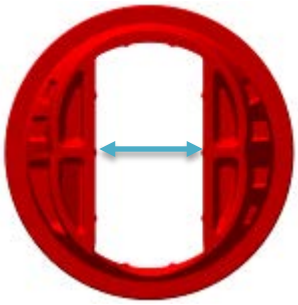

6.10 INTAKE RESTRICTOR

125 MICRO MAX, 125 MINI MAX

Throttle body restrictor (ROTAX part no. 267536) must be in the correct orientation (pic below left) and fully inserted into the rear of the carburettor (pic below middle) at all times.


Carburettor must be fully inserted into the rubber carb flange (pic right).

No modifications are allowed. The ribbed surface on the inlet is to help ensure that the dimensions have not been modified.

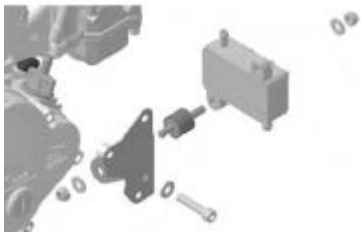
Max distance = 35.0 mm 		
Max distance = 18.0 mm 	Min length = 35.0 mm 	

6.11 – FUEL PUMP, FUEL FILTER

MIKUNI diaphragm pump (*pic right*) must be used and mounted on support bracket as shown in the illustration. It must be marked "MIKUNI".

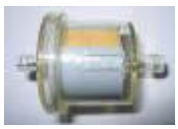
125 MICRO MAX, 125 MINI MAX, 125 JUNIOR MAX, 125 MAX
Fuel pump must be mounted on the bottom side of the support bracket for the intake silencer (as shown left illustration).

125 MAX DD2
Fuel pump should be mounted on the support bracket, marked 651055 or 651056, attached to the clutch cover (below right illustration).



Mounting the fuel pump with the two original rubber buffers to the chassis is an allowed option. In this case the fuel pump must be mounted below the inlet center line of the carburettor.

6.12 – FUEL FILTER



Two versions of original fuel filter are legal to be used (pictures right). It is mandatory for the fuel filter 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.

It is permitted [and recommended] to use fuel hose clamps on all fuel and pulse lines to provide a secure seal.

6.13 – RADIATOR

The removal of the thermostat from the cylinder head cover is an allowed modification.

Radiator must be mounted with all components as shown in the respective illustrations.

To apply tape (neutral tape without advertising only) around the radiator is an allowed modification to control the air flow through the radiator.
Tape may not be removed from the radiator during operation on the track.

Any other non-original device to control the air flow through the radiator is prohibited.

The dimensions of the radiators are for reference purposes only.

125 MICRO MAX, 125 MINI MAX

Two different versions are legal to be used:

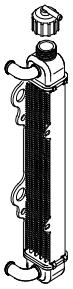
Cooling area:
Height = 280-300 mm

Width = 58-62 mm

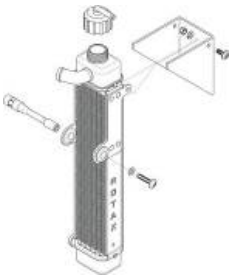
Thickness of radiator = 30-34 mm

Removal of the original plastic flap (Version 2) is an allowed modification.

Version 1



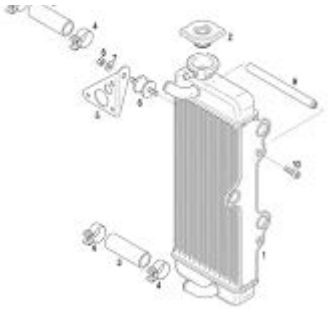
Version 2



125 JUNIOR MAX, 125 MAX

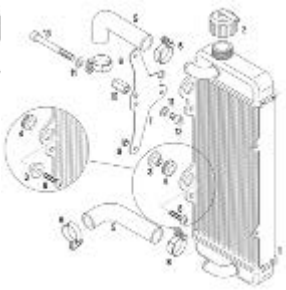
The radiator must be mounted on the right side of the engine.
Three different versions are legal to be used as shown in the illustrations:

Version 1



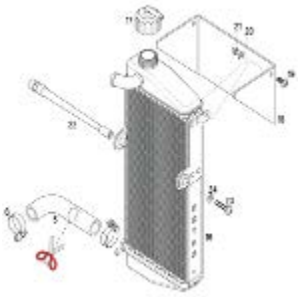
Cooling area:
Height = 290 mm
Width = 133 mm
Thickness = 32 mm

Version 2



Cooling area:
Height = 290 mm
Width = 133 mm
Thickness = 32 mm

Version 3



Cooling area:
Height = 290 mm
Width = 138 mm
Thickness = 34 mm

For version 2 the support plate (pos 7) enables two different mounting positions (height) of the radiator. Both mounting positions are legal to be used.

For version 3 the radiator must be stamped on the side with the wording “ROTAX”.
Removal of the original plastic flap (version 3) is an allowed modification.

125 MAX DD2

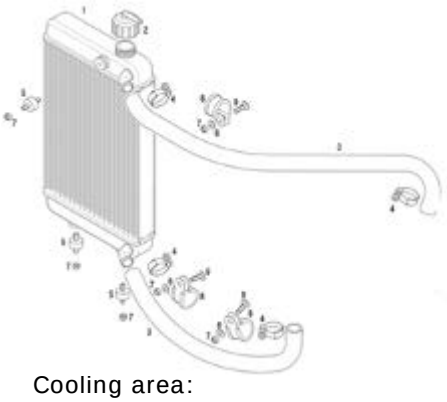
The radiator must be mounted on the left side of the driver’s seat.

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

"ROTAX" stamped on top/side of radiator.

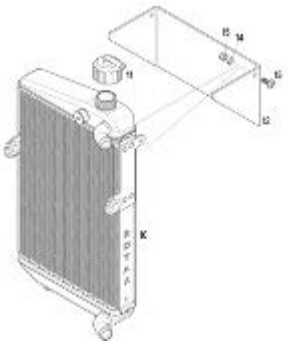
Two versions are legal to be used as shown in the illustrations:

Version 1



Cooling area:
Height = 284 mm
Width = 202 mm
Thickness = 32 mm

Version 2



Cooling area:
Height = 290 mm
Width = 196 mm
Thickness = 34 mm

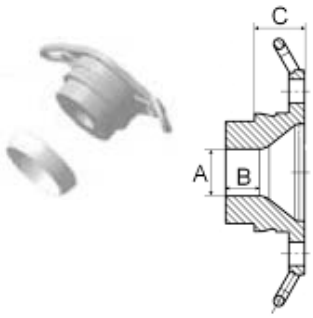
Removal of the original plastic flap (version 2) is an acceptable configuration.

6.14 – COOLANT

Plain water without any additives must be used.

6.15 – EXHAUST SOCKET

Only exhaust sockets with gasket ring (Rotax Part No. 450360) are legal to be used.



125 MICRO MAX, 125 MINI MAX

Diameter (A) must apply for a length (B) of at least 12 mm.

Measurement (C) must be at least 18.5 mm.

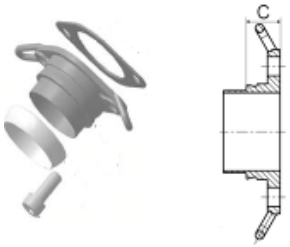
Maximum inner diameter (A) of exhaust sockets are:

125 MICRO MAX: 18.30 mm (Rotax Part no. 273 192)
125 MINI MAX: 22.20 mm (Rotax Part no. 273 196)

The internal profile of the exhaust socket should be checked with the template (Rotax Part no. 277405).

Fit template (MICRO MAX “18 mm”, MINI MAX “22 mm”) as far as possible into exhaust socket (no gasket, carbon deposits removed). There must be a constant crack of light between the profile of the template and the exhaust socket profile.

125 JUNIOR MAX, 125 MAX, 125 MAX DD2



Only Rotax Part No. 273190 is allowed to be used.

Measurement (C) must be at least 15.5 mm.

6.16 – EXHAUST SYSTEM

The use of a maximum 4 pieces (minimum 2 pieces) of original ROTAX exhaust springs to fix the exhaust to the cylinder is allowed (no safety wire allowed in exhaust flange or silencer area).

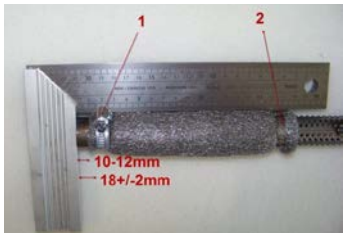
Original exhaust system as supplied by Rotax is mandatory to be used for the relevant class. Welding of the exhaust is not permitted other than to repair the support brackets in case of failure.

Allowed modifications on original exhaust systems are:

- Replacement of the original rivets of the silencer end cap by 4 mm metric screws and corresponding locking nuts. The 3 x fixations (rivets, bolts and locking nuts) must be always secured tightly to ensure a sealing between the perforated tube and exhaust system. The perforated tube must be fully inserted into the exhaust system (right picture). External protrusion of the outer sealing ring of the perforated tube (indicated by the red arrow) is forbidden.

- If the exhaust must be sealed, the seal must pass through a 4th hole (max. 4mm diameter) which avoids the leaking of exhaust gases (see picture right). The perforated tube must always be secured tightly to the exhaust at 3 points.
- Replacement of the isolating mat (only one original isolating mat may be fitted) inside the silencer and the silencer end cap with perforated tube within the limits described herein. MINI MAX must utilise isolating mat Rotax Part No. 297985. All other categories use Rotax Part No. 297982.
  Note: *For post-race technical checks on the exhaust isolating mat, only the used weight is to be controlled. New size and weight specifications can only be applied for pre-race / event technical checks against new material prior to installation and sealing of the exhaust system, if specified by the event /series organiser.*
- 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.
- Addition of a steel isolating mat (ROTAX part no. 297983) of square dimension 165 + 10 mm is legal to be assembled underneath the standard isolation mat in 125 JUNIOR MAX, 125 MAX and 125 MAX DD2 only.

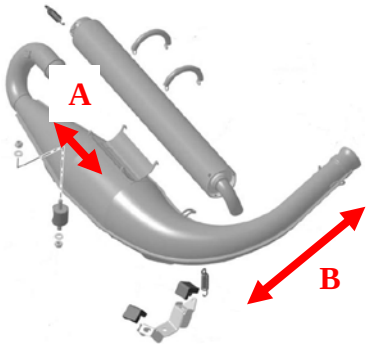
  Clamp (1) must be fitted at a distance of 18 +/- 2 mm, measured from the end of the tube (*pic right*).
  Clamp (2) must be fitted at the end area of the steel isolation mat (*pic right*).



  10-12mm is a specification for assembly purpose only. Both clamps (1 and 2) are mandatory and must be fitted and tightened.

DAMAGE LIMITS

Damage to the tuned pipe is not permitted unless deemed by the technical officials to have occurred during regular operation and in line with the following dimensions:



For any indentation close to the brake disc (A), the depth must not exceed 10 mm.

For any indentation between the exhaust socket and the elbow of the expansion chamber (B), the depth must not exceed 3 mm.

This technical clarification is to ensure proper and consistent function of the exhaust system particularly across the range of 125 JUNIOR and 125 MAX classes.

6.17 EXHAUST SYSTEM 125 MICRO MAX AND 125 MINI MAX

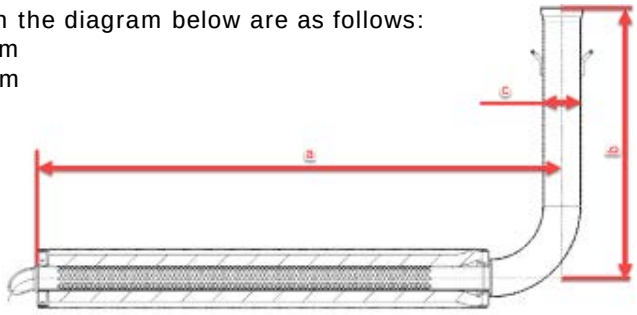
A specific exhaust system (Rotax Part No. 273136) must be used for the 125 MICRO MAX engine while exhaust system (Rotax Part No. 273137) must be used for the 125 MINI MAX engine.

Note: the exhaust external body is the same for both systems but the internal components (inserts) differ.

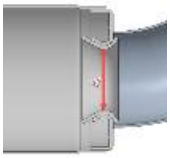
The silencer must be mounted in a position where the direction of the 90° elbow outlet (direction of the hot exhaust gases) does not harm any component of the chassis.

The exhaust must be mounted and secured in such a way to ensure a full sealing around the exhaust socket and the gasket ring.

The measurements in the diagram below are as follows:
(a) 580 mm +/- 5 mm
(b) 299 mm +/- 5 mm
(c) 42 mm +/- 3 mm

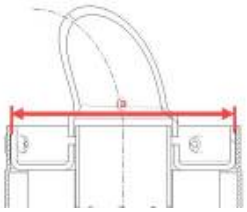


A steel ball with a 28.0 mm diameter or solid flat plate measuring 28.0mm and 1.5mm thick **must not** pass through Section “A” (see right illustration).



A steel ball with a 26.0 mm diameter must be able pass through Section “A” from the inlet and through the 90-degree elbow completely. [Note: internal exhaust components must first be removed.]

All exhaust gases must pass through Section “A”.



The inner measurement of the exhaust system silencer end (a) in the right illustration must be a maximum of 63.0 mm.
Note: this is not a measurement of the perforated tube

No exhaust leakage is allowed (no signs of oil).

The exhaust flange and socket shape must be concentric. The exhaust must be mounted so that it is centred on the exhaust socket with even spacing all around. No modification, damage or distortion of the exhaust pipe (and exhaust socket) is permitted.

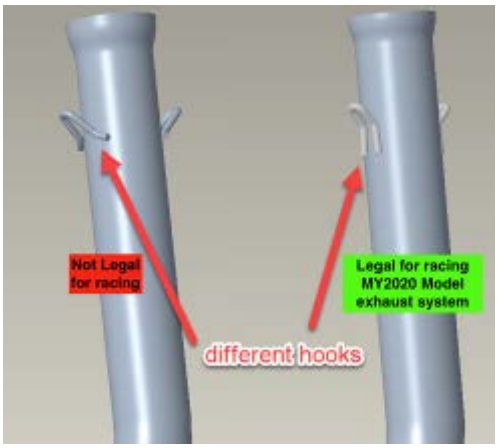
The exhaust screws or rivets on the return end plate should be tightly fastened.

The exhaust must be installed firmly using either one rigid pipe mount or 2 separate rigid brackets via 2 silent blocks (Rotax Part No. 660920 or 260657 – one per support lug).

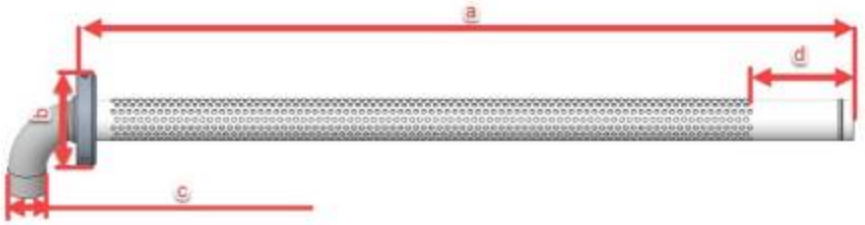
The deflection of the 2 silent blocks is the only exhaust movement allowed. The pipe must be mounted in a neutral position (ideally horizontal) with no stress on the 2 silent blocks.

NOTE:
The only exhaust system allowed for racing in the 125 MICRO MAX and 125 MINI MAX categories is the MY2020 version which exhibits 3 clear visual differences from its predecessor:

1) Exhaust hooks
2) Connecting socket / ball joint connect at manifold
3) Wall thickness of the exhaust system 1.0 mm (older version which is not allowed for racing has a wall thickness of 1.5 mm)



6.17.1 125 MICRO MAX Perforated Tube (Rotax Part No. 273212)



The measurements illustrated above are as follows:

(a) minimum 498 mm
(b) minimum outside diameter 61 mm
(c) maximum outside diameter of 26 mm
(d) minimum length 63 mm

Minimum outside diameter (measurement (a) in the illustration right) is 26.0 mm

The only legal isolating mat for 125 Micro MAX is Rotax Part No. 297982:
New size minimum 480 x 270 mm (+/- 10 mm)
New weight 207g +/- 31g
Used weight 245g +/- 105g

6.17.2 125 MINI MAX Perforated Tube (Rotax Part No. 273211)

The measurements illustrated above are as follows:

(a) minimum 481 mm
(b) minimum outside diameter 61 mm
(c) maximum outside diameter of 26 mm
(d) minimum length 63 mm

Note: 125 MINI MAX perforated tube has a stamped ID marker " X " visible externally.

The perforated tube with the circle supported by 3 linking points (when looking into the tube) is the only one allowed to be used.

The perforated tube with the dome circle is not allowed.
See pictures below:

LEGAL TO USE

NOT LEGAL TO USE

The only legal isolating mat for 125 MINI MAX is Rotax Part No. 297985:
New size minimum 490 x 180 mm (+/- 10 mm)
New weight 141g +/- 22g
Used weight 230g +/- 120g

6.18 EXHAUST SYSTEM 125 JUNIOR MAX, 125 MAX AND 125 MAX DD2

The silencer must be mounted in a position where the direction of the 90° elbow outlet (direction of the hot exhaust gases) does not harm any component of the chassis.

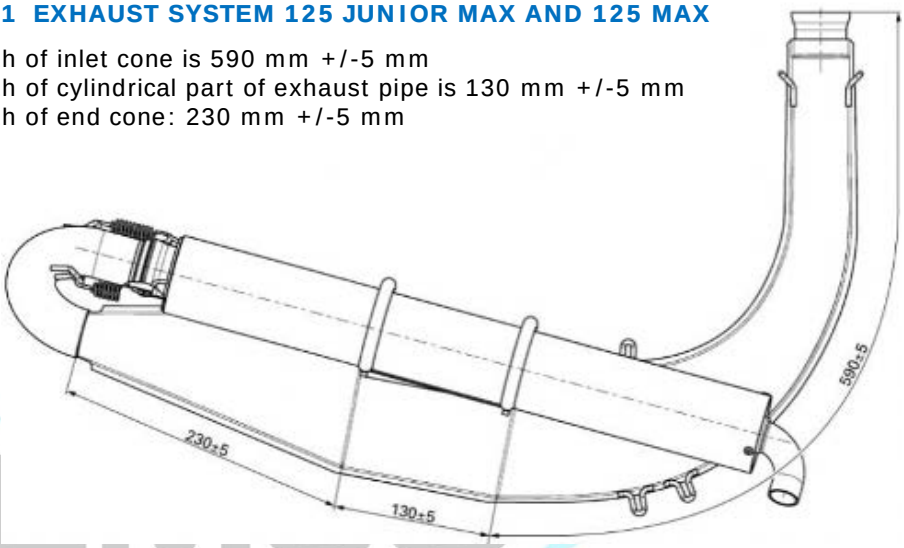
To drill an extra hole in the exhaust retaining bracket (Rotax Part No. 651070 MAX) for attachment of a second exhaust spring is a legal modification.

To fit a 3rd original spring (crosswise at the ball joint connection between 180° elbow and silencer) is an allowed option.

The only legal isolating mat for 125 JUNIOR MAX, 125 MAX and 125 MAX DD2 is Rotax Part No. 297982:
New size minimum 480 x 270 mm (+/- 10 mm)
New weight 207g +/- 31g
Used weight 245g +/- 105g

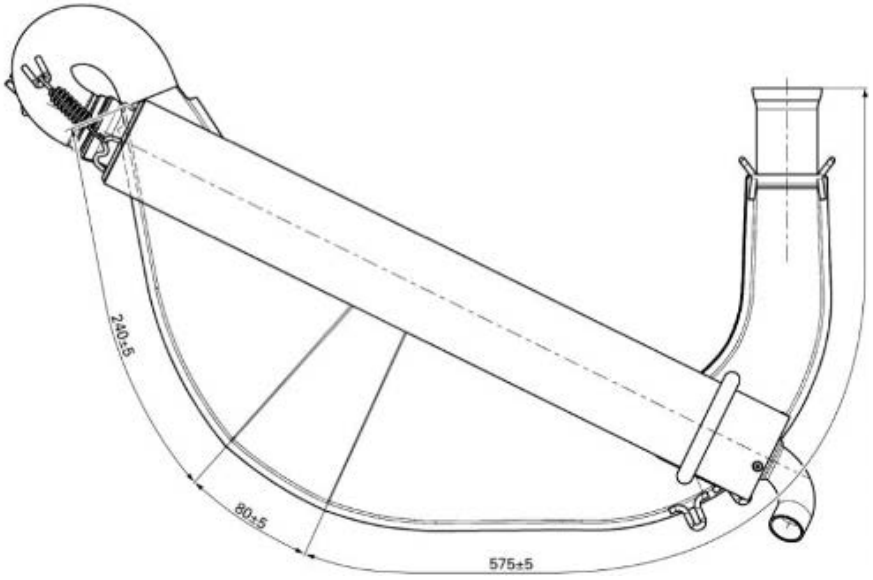
6.18.1 EXHAUST SYSTEM 125 JUNIOR MAX AND 125 MAX

Length of inlet cone is 590 mm +/-5 mm
Length of cylindrical part of exhaust pipe is 130 mm +/-5 mm
Length of end cone: 230 mm +/-5 mm



6.18.2 EXHAUST SYSTEM 125 MAX DD2

Length of inlet cone is 575 mm +/-5 mm
Length of cylindrical part of exhaust pipe is 80 mm +/-5 mm
Length of end cone: 240 mm +/-5 mm



6.19 – ADDITIONAL SEAT SUPPORT (125 MAX DD2)

On the engine side a maximum of one additional seat support is allowed to be used.

The support must be fastened to the engine using the Allen screw (2) (*pic right*). The distance sleeve (3) may be removed for this purpose.

The seat strut may be installed on either side of the threaded bolt hole.