ROTAX MOJO MAX EURO Challenge

Technical Regulations 2007

(version 2006.11.01.rg2)

The CIK-FIA Technical regulation also apply for the Rotax Mojo Max Euro Challenge 2007.
The English text is the authentic version.

ROTAX MOJO MAX EURO CHALLENGE, reserves the right to issue additional statements concerning the Technical Regulations (previously approved by the ASN proposing the series and the CIK-FIA) from time to time following the agreement of the ASN presenting the ASN and the CIK-FIA, and all such statements will be issued to all registered competitors by way of Competitors' Bulletins at the race meeting, or posted to the address detailed on the Series Registration Form.

Article 1 - CATEGORIES

Engines used in the ROTAX MOJO MAX EURO CHALLENGE divided into the following groups are:

- ROTAX FR 125 Junior Max, Cylinder capacity of 125 cc
- ROTAX FR 125 MAX, Cylinder capacity of 125 cc
- ROTAX FR 125 MAX Master, Cylinder capacity of 125 cc
- ROTAX FR 125 DD, Cylinder capacity of 125 cc, 2 - speed

Article 2 – GENERAL PRESCRIPTIONS

2.1 – The kart and any modification must conform to the specific regulations of the categories in which the kart is entered, or to the General Prescriptions.

2.2 – Application of the General Prescriptions These General Prescriptions apply to all categories in the event that they are not subject to specific regulations.

2.3 – It is the duty of every Entrant to prove to the Scrutineers and to the Stewards that his kart integrally complies with the Regulations throughout the event.

2.4 – Modifications Any modification is forbidden if it is not explicitly authorised by an article of these Regulations or for safety reasons decided by the CIK-FIA. By modification are meant any operations likely to change the initial aspect, the dimensions, the drawings or the photographs of an original homologated part.

2.5 – Adjunction of material or parts Any adjunction or fixation of material or of parts is forbidden if it is not expressly authorised by an article of these Regulations or for safety reasons decided by the CIK-FIA. Removed material may not be used again. Rebuilding the frame geometry, following an accident, is authorised by adjunction of the materials necessary for the repairs (additional metal for welding, etc.); other parts which may be worn out or damaged may not be repaired by addition or fixation of material, unless an article of these Regulations authorises it exceptionally.

Article 3 - KART

CHASSIS Amount of equipment

3.0 Scrutineering

A mandatory check will be carried out before the start.
It must be possible to identify the homologated equipment by the technical descriptions (drawings, dimensions, etc.) on the Homologation Form.
For any used equipment, which has been homologated, every competitor shall be able to submit the relevant Homologation Forms.
Identification and control It must be possible to identify the homologated equipment

***3.1** Drivers will be allowed one chassis only . However if damage occurs to the chassis, which has been scrutinized for the meeting, **if in the opinion of the scrutineer** it is not practical to repair in time, one alternative chassis of the same make as the damaged chassis **may** be scrutinized, in order to continue the meeting.*

***3.2** Chassis in 125 Junior MAX, 125 MAX and 125 MAX Master*
must have a valid 2003 or newer CIK-Homologation, no front brakes are allowed in Max Junior

***3.3** 125 MAX DD2 class.*
Chassis approved by BRP-ROTAX only are allowed to be used. Chassis must be designed according to CIK rules for shifter classes (front and rear brakes mandatory). Brake system must have a valid CIK homologation. ROTAX Rear Tire Protection System is mandatory to be used. Approved chassis will be listed at "www.maxchallenge-rotax.com".

***3.4** The rear shaft (axle) must have a maximum external diameter of 50 mm and a minimum wall thickness of 1.9 mm at all points. The rear shaft thickness must at all points (except in key housings) be as a minimum:*

Table of equivalence according to external diameters

Max. External diameter (mm)	*Min. thickness (mm)*
50	*1.9*
49	*2.0*
48	*2.0*
47	*2.1*
46	*2.2*
45	*2.3*
44	*2.4*
43	*2.5*
42	*2.6*
41	*2.8*
40	*2.9*

3.5 Technical specifications
Wheelbase: Minimum: 101 cm, Maximum 107 cm
Overall length: 182cm maximum without a front and/or rear fairing
Overall width: 140 cm maximum.
Height: 65 cm maximum from the ground, seat excluded.
No part may project beyond the quadrilateral formed by the front fairing, rear bumper and the wheels.

3.6 Weight
The weights given are absolute minima and it must be possible to check them at any moment of a competition and read on the display of the scales whatever their measuring precision, the Driver being normally equipped for the race (helmet, goggles, gloves and shoes). Any infringement found during a random check during or at the end of an event shall result in the Driver and/or Entrant being excluded from that particular Heat, Qualifying Practice or Race.

3.7 Ballast

It is authorised to adjust the weight of the kart with one or several ballasts subject to their being solid blocks, fixed to the chassis or to the seat by means of tools with at least two bolts of a minimum diameter of 6 mm.

3.8 Bumpers

They are compulsory front, rear and side protections. These bumpers must be made of magnetic steel. For all categories they must be homologated with the bodyworks.
The front bumper must consist in at least 2 steel elements.
A steel upper bar with a minimum diameter of 16 mm and a steel lower bar with a minimum diameter of 20 mm, both bars being connected together.
These 2 elements must be independent from the attachment of the pedals.
The front bumper must permit the attachment of the mandatory front fairing.
It must be attached to the chassis-frame by 4 points.
Front overhang: 350 mm minimum.
Width of the lower bar: straight and 300 mm minimum in relation to the longitudinal axis of the kart.
The attachments of the lower bar must be parallel (in both horizontal and vertical planes) to the axis of the chassis and permit a fitting (system of attachment to the chassis-frame) of 50 mm of the bumpers; they must be 450 mm apart and centred in relation to the longitudinal axis of the kart at a height of 90 +/- 20 mm from the ground.

Width of the upper bar: straight and 400 mm minimum in relation to the longitudinal axis of the kart.
Height of the upper bar: 200 mm minimum and 250 mm maximum from the ground.
The attachments of the upper bar must be 550 mm apart and centred in relation to the longitudinal axis of the kart.
The attachments of the upper bar and the lower bar must be welded to the chassis-frame.

3.9 Rear bumper

Composed as a minimum of an anti-interlocking bar with a minimum diameter of 16 mm and of a top bar with a minimum diameter of 16 mm. The whole unit must be fastened to the frame in at least 2 points (possibly by means of a flexible system) on the 2 main tubes of the chassis.
Height: the plane through the top of the front and rear wheels as a maximum; 200 mm from the ground as a minimum for the upper bar and 80 mm +/- 20 mm from the ground for the anti-interlocking bar.
Minimum width: 600 mm.
Rear overhang: 400 mm maximum.

3.10 Rear wheel protection

CIK-FIA 2006/2007 homologated rear wheel protection is obligatory to bee used.

3.11 Side bumpers

They must be composed of an upper bar and of a lower bar.
They must allow the attachment of the mandatory side bodywork.
They must have a diameter of 20 mm.
They must be attached to the chassis-frame by 2 points.
These 2 attachments must be parallel to the ground and perpendicular to the axis of the chassis; they must allow a fitting (system of attachment to the chassis-frame) of the bumpers of 50 mm minimum, and they must be 500 mm apart.
Minimum straight length of the bars:
400 mm for the lower bar
300 mm for the upper bar.
Height of the upper bar: minimum 160 mm from the ground.
Their external width must be in relation to the longitudinal axis of the kart:
500 +/- 20 mm for the lower bar
500 +100/-20 mm for the upper bar.

3.12 Floor tray

There must be a floor tray made of rigid material that stretches only from the central strut of the frame to the front of the kart. It must be laterally edged by a tube or a rim preventing the Driver's feet from sliding off the platform. If it is perforated, the holes must not have a diameter of more than 10 mm and they must be apart by four times their diameter as a minimum.
The floor tray shall be of flat construction and must have a curved beading edge. From 23 cm ahead of the rear shaft, the floor tray may have an angle orienting it upwards
(extractor). If the latter has one or two side fins, they must not protrude beyond the plane formed by the flat part of the floor tray. Neither the floor tray nor any other part of the bodywork shall in any way resemble a skirt.

3.13 Bodywork

The bodywork is made up of all parts of the kart that are in contact with air, other than mechanical parts as defined under CIK-FIA Article 2.3, the fuel tank and number plates.

The bodywork must be impeccably finished, in no way of a makeshift nature and without any sharp angles. The minimum radius of any angles or corners is 5 mm.
Bodywork For all categories, it must be made up of two side bodyworks, one front fairing and one forward facing panel, with possible rear bodywork.
The bodywork must be homologated by the CIK-FIA. No element of the bodywork may be used as fuel tank or for the attachment of ballast. No cutting of bodywork elements is allowed.

In case of a "WET RACE" the sentence the following sentence of the CIK Technical regulations 7.1.4 is not valid at the Rotax Mojo Max Euro Challenge events DD2 class: "In the case of a wet race side bodywork may not be located outside the plane passing through the outer edge of the rear wheels". For Rotax Max Junior, Rotax Max, and Rotax Max Master class CIK Technical regulation 7.1.4. is valid.

3.13.1 Materials

Non-metallic; carbon fibre, Kevlar and glass fibre are forbidden. In all categories, if plastic is used, it must not be possible to splinter it and it shall not have any sharp angles as a result of a possible breakage.

3.13.2 Side bodyworks

They must under no circumstances be located either above the plane through the top of the front and rear tyres or beyond the plane through the external part of the front and rear wheels (with the front wheels in the straight ahead position). In the case of a "Wet race", side bodywork may not be located outside the plane passing through the outer edge of the rear wheels.
They may not be located inside the vertical plane through the two external edges of the wheels (with the front wheels in the straight ahead position) by more than 40 mm.
They must have a ground clearance of 25 mm minimum and of 60 mm maximum.
The surface of the side bodyworks must be uniform and smooth.
Gap between the front of the side bodyworks and the front wheels: 150 mm maximum.
Gap between the back of the side bodyworks and the rear wheels: 60 mm maximum.
No part of the side bodyworks may cover any part of the Driver seated in his normal driving position.
The side bodyworks must not overlap the chassis-frame seen from underneath.
On their outer side they must comprise a vertical surface (with a tolerance of +/- 5° in relation to the theoretical vertical plane) with a minimum height of 100 mm and a minimum length of 400 mm located immediately above the ground clearance.
They must not be able to hold back water, gravel or any other substance.
They must be solidly attached to the side bumpers.
On their rear vertical surface close to the wheels there must be a space for competition numbers.

3.13.3 Front fairing

It may under no circumstances be located above the plane through the top of the front wheels.
It must not comprise any sharp edges.
Its minimum width is 1,000 mm and its maximum width is the external width of the front wheel/axle unit.
Maximum gap between the front wheels and the back of the fairing: 150 mm.
Front overhang: 650 mm maximum.
The fairing must comprise on its front side a vertical surface (with a tolerance of +/- 5° in relation to the theoretical vertical plane) with a minimum height of 80 mm and a minimum length of 300 mm located immediately above the ground clearance.
The fairing must not be able to hold back water, gravel or any other substance.

3.13.4 Front panel

It must not be located above the horizontal plane through the top of the steering wheel.
It must allow a gap of at least 50 mm between it and the steering wheel and it must not protrude beyond the front fairing.
It must neither impede the normal functioning of the pedals nor cover any part of the feet in the normal driving position.
Its width is 250 mm minimum and 300 mm maximum.
Its lower part must be solidly attached to the front part of the chassis-frame directly or indirectly. Its top part must be solidly attached to the steering column support with one or several independent bar(s).
A space for competition numbers must be provided for on the front panel.
Bodywork, bubble-shield and wing must be of a non- metallic material. Should a complete bodywork and bubble-shield be used, the bubble-shield shall be connected to the bodywork by no more than four quick release clips and shall have no other fixing device. Should the bubble-shield be a separate structure, its

maximum width shall be 50 cm and the maximum width of its fixing frame 25 cm.
The bubble-shield must neither be located above the horizontal plane passing through the top of the steering wheel nor be less than 5 cm from any part of the steering wheel. At the bottom the bubble-shield shall end symmetrically 15 cm minimum from the pedals in the normal resting position and shall expose the feet and the ankles.
In all cases, when the bubble-shield is removed, no part of the bodywork shall cover any part of the Driver seated in the normal position seen from the above.
The front of the nose of the bodywork must not constitute a sharp angle but must have a minimum radius of 20 mm. Front fairings must be such that it is possible for the front bumper to comply with the requirements of this article and must not be wider than the front wheels when in a straight ahead position.
It shall not extend beyond either front or rear bumpers. Its width shall conform to and not exceed the dimensions of the bodywork including wings and end plates. It is not allowed to cut lightening holes in the floor tray.

3.14 Transmission
Shall always be to the rear wheels. The method is free but any type of differential, whether through the axle, the wheel-mounting hub or by any other means, is prohibited. Any device for chain lubrication is forbidden, except in the case of a system approved by the CIK-FIA.

3.15 Chain Guard
It is compulsory and must efficiently cover the sprocket and the crown-wheel down to the centre of the crown-wheel axis. In addition, it must incorporate efficient side protection.

3.16 Suspension
All suspension devices, either elastic or hinged, are pro- habited. Hydraulic, pneumatic or mechanical suspension devices are forbidden on all the kart.

3.17 Brakes
No front brakes are allowed in the Junior Max category.
The brakes must be homologated by the CIK-FIA. Brakes must be hydraulic. The brake control [the link between the pedal and the pump(s)] must be doubled (if a cable is used, it must have a minimum Ø of 1.8 mm and be blocked with a cable clip of the flat clip type). They must work on at least both rear wheels simultaneously. Carbon brake discs are forbidden.

3.18 Steering
Must be controlled by a steering wheel which a continuous rim not incorporating any reflex angles in its basic shape. The upper and lower 1/3 of the circumference may be straight or of a different radius to the rest of the wheel. Any device mounted on the steering wheel must not protrude by more than 20 mm from the plane forward of the steering wheel and must not have sharp edges.
Flexible steering controls by cable or chain are forbidden.
All parts of the steering must have a method of attachment offering maximum safety (split pins, self-locking nuts or burred bolts). The steering column must have a minimum diameter of 18 mm and a minimum wall thickness of 1.8 mm. It must be mounted with a safety clip system for the lower bearing restraint nut.

3.19 Seat
The Driver's seat must be so designed that it is located to prevent the Driver from moving towards the sides or front when cornering or braking.
All seats must also comprise metal or nylon reinforcement at all the anchorage points of the seat between the seat supports and the seat. Reinforcement must have a minimum thickness of 1.5 mm, a minimum surface of 13 sq cm or a minimum diameter of 40mm.
All supports must be bolted or welded at each end.

3.20 Pedals
Whatever the position of the pedals, they must never protrude forward of the chassis including the bumper. Pedals must be placed in front of the master cylinder, the brake pedal and all the parts operating the master cylinder must be made of steel and must be strong enough to withstand the forces applied.

3.21 Accelerator
The accelerator must be triggered off by a pedal equipped with a return spring. A mechanical link is compulsory between the pedal and the carburettor.

3.22 Fuel Tank
It must be securely fixed to the chassis and be designed in such a way that neither it nor the fuel pipes (which must be flexible) present any danger of leakage during the competition. A quick attachment to the chassis is strongly recommended. The tank shall in no way be shaped to act as an aerodynamic device. The tank must supply the engine only under normal atmospheric pressure (this means that, apart from the fuel pump located between the fuel tank and the carburettor, any principle or system, mechanical or not, which may have an influence on the internal pressure of the fuel tank is forbidden).
Its capacity must be 8 litres minimum.

3.23 Fuel
Fuel will be either "Parc Ferme" status or Non " Parc Ferme" status, it will be stated in the supplementary regulations of the meeting/event.
Unleaded commercial quality from petrol station, max. 98 octane
The requirements specified in these regulations are intended to ensure the use of fuels predominantly composed of compounds normally found in commercial fuel, and to prohibit the use of specific power-boosting chemical compounds.
In each control method the measurement error is included in the minimum/maximum values specified in the chart and will not be added after the test.
At any time the volume of fuel in the tank must be over or equal to 3 litres.

3.24 Lubricant
Lubricant characteristics The lubricant must in no way contribute to an improvement in fuel performance; therefore, some limitations have been set for the following criteria: The lubricant must be packaged in a sealed can when the Entrant brings it to the Servicing Parks, the mixture of different lubricants is strictly forbidden.

3.25 Rims
Bedding Retention The front and rear wheels must have some form of bead retention with 3 pegs minimum in the outside rim. (CIK-FIA technical Regulations Art.2.22)
The attachment of the wheels to the axles must incorporate a safety locking system (such as split pins or self-locking nuts, cir-clips, etc.).

3.26 Tyres
3.26.1 Dry
Slick tyres: MOJO Type: D1
Front: 4.5 x 10.0 -5 Rear: 7.1 x 11.0 –5

3.26.2 Wet
Wet tyres: MOJO Type: W1
Front: 4.0 x 10.0 -5 Rear: 6.0 x 11.0 –5

3.26.3 *Any modification of a tire is forbidden, in all categories, the heating and cooling of tires by any method, and/or remoulding or treating the tires with any chemical substance are forbidden.*

3.27 Racing Numbers (According to Art.24 of the CIK-FIA Technical Regulations)
The numbers shall be black on a yellow back-ground, and they shall be at least 15 cm high and have a 2 cm thick stroke and represented with an Arial type or similar font. The competition number shall be bordered by a yellow background of 1 cm minimum. They must be fitted before free practice , on both front and rear and on both sides towards the rear of the bodywork.
The number plates fitted at the back of the kart shall be plane and have rounded corners (diameter of rounded corners 15 to 25 mm) with 22 cm sides. The plates shall be flexible and made of opaque plastic, and they shall always be visible (fixation without a possible displacement).
Only the Promoter/ Organiser's uniform advertising is permitted; in that case, the Promoter / Organiser must supply the number plates. This advertising must not be more than 5 cm in height and may only be affixed to the lower part of the plate. The Driver is responsible at all times for ensuring that the required numbers are clearly visible to Timekeepers and Officials.

3.28 Telemetry
Any system of telemetry is strictly forbidden.

3.29 Data logging
Any data acquisition devices for recording and displaying of any data is allowed.

3.30 Radio
Any radio communication system between any Driver on the track and any other body is strictly forbidden.

Article 4 Kart and Equipment Safety

4.1 *KART SAFETY Karts are only allowed to race if they are in a condition which meets the safety standards and if they comply with the Regulations. They must be designed and maintained in such a way as to allow the respect of the Regulations and as not to represent a danger for the Driver and other participants.*

4.2 *EQUIPMENT SAFETY*
The Driver must wear:
A helmet with an efficient and unbreakable protection for the eyes. For all classes, helmets must comply with the following prescriptions:
- Snell Foundation, K98, K2005, SA2000 and SA2005 (USA),
- British Standards Institution A-type and A/FR-type BS6658-85, including any amendments (UK),
- SFI Foundation Inc., Spec. SFI 31.1A and 31.2A (USA). Any modification to the above list will be published in the CIK Bulletin. The weight of helmets may be checked at any time during an event and must not be more than 1,800 g or 1,550 g for Juniors. It must be noted that certain types of helmets must not be painted or carry adhesive material. In accordance with Appendix L to the International Sporting Code (Chapter III, Article 1.2), any addition of devices, whether aerodynamic or other, to helmets is forbidden if they have not been homologated with the helmet concerned.

A pair of gloves covering the hands completely.

Fabric overalls must have a «Level 2» homologation granted by the CIK-FIA bearing in a visible way the CIK- FIA homologation number. They must cover the whole body, legs and arms included.

Boots must cover and protect the ankles.

Article 5 ENGINES

5.1 *All engines registered on the Scrutineering Card, regardless whether or not the engine is defective, the seal* ***MUST NOT*** *be broken.*

5.2 *The Scrutineer has the right to impound carburettor, exhaust, electronic ignition and petrol at his discretion. Should this be the case the parts impounded will be replaced with new original manufactured parts at the expense of the Promoter/Organiser.*

5.3 *Only 2 (two) engines are allowed for each driver per event.*

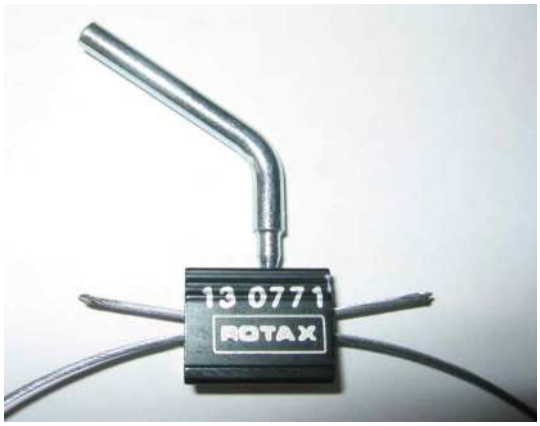
5.4 *A list of "authorised ROTAX service centres " will be available from the series promoter.*
From scrutinizing Thursday to the end of racing on Sunday ***no*** *engine seals may be replaced and/or broken throughout the race weekend, this includes engines which have been seized and/or hit by other defects.*
All engines registered on the Scrutineering Card, regardless whether or not the engine is defective, the seal ***MUST NOT*** *be broken.*

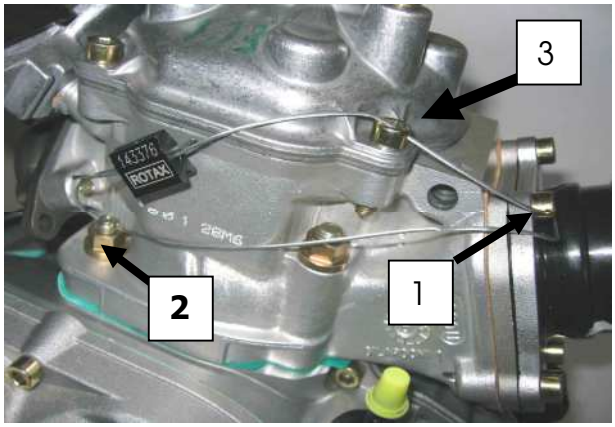
5.5 *At Rotax Mojo Max Euro Challenge races, engines which are confirm to the following technical specification only, are legal to be used.*
All ROTAX Authorised Distributors and their Service Centers only are allowed to check and seal engines. ROTAX will publish a list of Authorized Distributors and their Service Centers which are legal to check and seal engines.

Article 6 ENGINES SEALING

6.1 Engines Sealing

By sealing an engine the ROTAX Authorised Distributors and their Service Centers take over the responsibility for the conformity of the engine with according to the valid Technical Specification. Also a brand new engine must be checked according to the Technical Specification before sealing.
The engines have to be sealed with specific ROTAX engine seals (black anodised aluminium seal with "ROTAX "-logo and a 6 digit serial no. see attached picture). Further legal seals are, for 125 MAX class, black anodised aluminium seals with "JAG"- logo and 6 digit serial no. and for 125 Junior MAX class, red anodised aluminium seals with "JAG"-logo and 6 digit serial no.
By means of the steel cable the engine must be sealed on one Allen screw (1) of the intake flange, on one stud screw (2) of cylinder and one Allen screw (3) of the cylinder head cover (see attached pictures).





At every new sealing of an engine the authority (ROTAX Authorised Distributor or their Service Centers) that checks and seals an engine is responsible for following indications at 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 has to present

- *the engine(s) with the 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(ies) that has (have) checked and sealed the engine(s).*

During ROTAX MOJO MAX EURO CHALLENGE Authorised Distributors and their Service Cents are not allowed to re-seal an engine between scrutineering and the final.

The sealing of engines helps to reduce the times for scrutineering at races as during the race event just the accessories (carburettor, exhaust, radiator…..) must 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 which reason ever), the engine has to be checked completely according to the Technical Specification and must then be re-sealed by an ROTAX Authorised Distributor or one of its Service Centers.

Genuine ROTAX components only, that are specifically designed and supplied for the 125 Junior MAX-, the 125 MAX- and the 125 MAX DD2 engine are legal, unless otherwise specified.

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. carburetor and exhaust valve adjustment screws.

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.

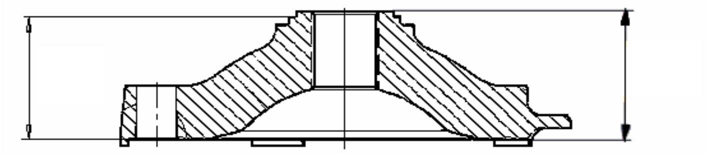
The use of thermal barrier coatings/ceramic coatings on or in the engine and on or in the exhaust system is prohibited.
The use of anti-friction coatings in or on the engine/engine components is prohibited.

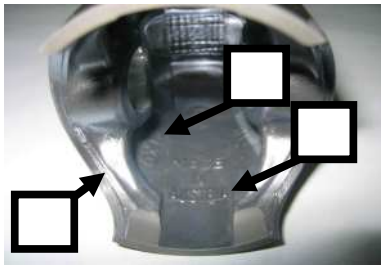
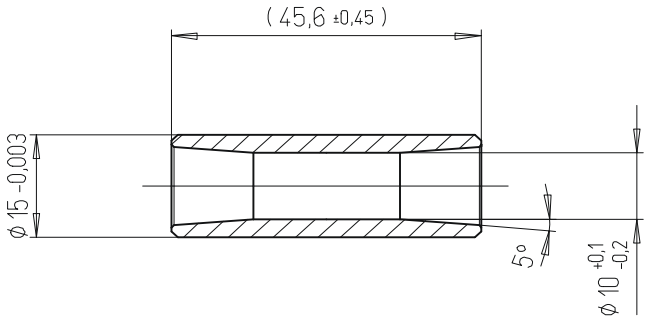
Legal additions:
Chain guard, engine mount, temperature gauge and tachometer/hour meter, inline fuel filter, catch can mounting brackets and supplemental ignition coil mounting brackets, within the limits specified in this document.

Non-tech items:
Non-original fasteners, circlips, washers, electrical mass cable, throttle cable housing, fuel and pulse line (type and size) are allowed unless otherwise specified."

Note:
When taking any dimensional reading, of the following technical regulation, 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.

9.1 Technical Specification (within the engine seal) for ROTAX kart engines 125 Junior MAX (15 kW) 125 MAX (21 kW).

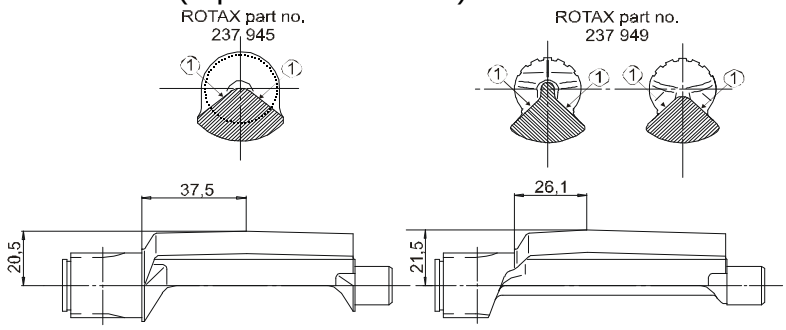
Squish gap	1.1 1.2	125 Junior MAX 1,20 mm - 1,80 mm 125 MAX 1,00 mm - 1,50 mm The squish gap must be measured with a certified slide gauge and by using a 2 mm tin wire. The crankshaft must be turned by hand slowly over TDC (top dead center) to squeeze the tin wire. The squish gap must be measured on the left and right side in the direction of the piston pin. The average value of the two measurements counts.
Combustion chamber insert	2.1	Cast identification code has to be "223 889" or "223 389 1" or "223 389 2"
	2.2	Coasted wording "ROTAX" and/or "MADE IN AUSTRIA" must be shown.  
	2.3	Heights of combustion chamber insert have to 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). 
	2.4	The profile of the combustion chamber insert has to 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 has to be the same over the whole profile. 

Piston with ring assy.	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).
	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. 
	3.3	Original, 1 mm, magnetic, rectangular piston ring. Piston ring is marked either with "E CRY K" or "ROTAX 215 547". 
Gudgeon pin	4.1 4.2	Gudgeon pin is made out of magnetic steel. Dimensions must be according to the drawing. 

Cylinder	5.1	Light-alloy-cylinder with GILNISIL-plating. Any re-plating of cylinder is not allowed.
	5.2	Cylinder with one main exhaust port.
	5.3	Maximum bore of cylinder = 54,035 mm (measured 10 mm above the exhaust port).
	5.4	Cylinder has to be marked with the "ROTAX" logo (see pictures below).
		125 Junior MAX
	5.5.1	Cylinder without pneumatic timed exhaust valve. Cylinder has to be marked with the identification code 223 999.
		125 MAX
	5.5.2	Cylinder with pneumatic timed exhaust valve. Cylinder has to be marked with the identification code 223 997. 
	5.6	Height of cylinder has to be 87 mm -0,05/+0,1 mm. 
	5.7	All transfer ports and passages have cast finish surface except some pre-existing , factory removal of flashing from inlet 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.

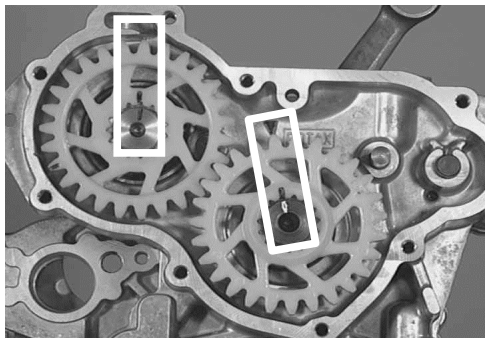
	5.8	The "exhaust port timing" (distance from the top of the cylinder to the top of the exhaust port) has to be checked by means of the template (ROTAX part no. 277 397). Insert the template into the cylinder, that the template is touching the cylinder wall and that the finger of the template is located 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 filler gauge between the top of the cylinder and the filler gauge. It may not be possible to use a filler gauge thicker than 0,70 mm (it may not be possible to insert a filler gauge with 0,75 mm). NOTE: Take care to use the corresponding gauge of the template (Junior, MAX or DD2) for the respective cylinder! 
	5.9	(For 125 MAX only) If the piston is covering completely the exhaust port, it must be possible to insert the exhaust valve gauge (ROTAX part no. 277 030) until it stops at the surface of the cylinder (no gap allowed). 

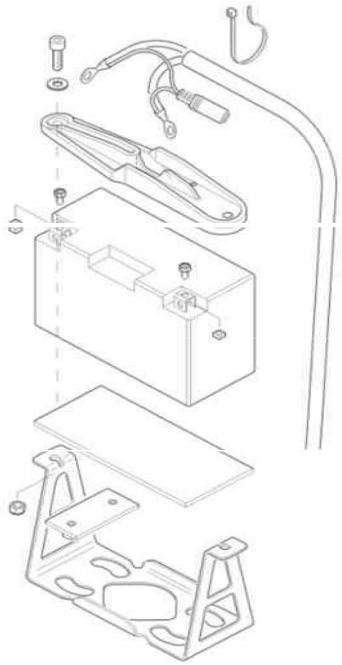
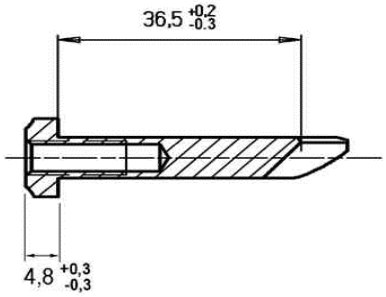
Inlet system	6.1	Inlet manifold is marked with the name "ROTAX" and the identification code "267 915". 
	6.2	Some factory flash removal may be present at the conjunction of the inside contour and the carburettor stop mounting face. This is a manual trimming operation consisting of a small corner break of less than 1 mm in width. No additional grinding or machining is permitted.
	6.3	The reed valve assy. is equipped with 2 pedal stops and 2 reeds, each having 3 pedals.
	6.4	The thickness of the reeds is 0,6 mm +/- 0,08 mm.
Crankshaft	7.1	Stroke 54,5 mm +/-0,1 mm
	7.2	Con rod has to show forged numbers "213", "365" or "367" on shaft. 
	7.3	Shaft of con rod is not machined (copper plated). Grinding of polishing of shaft of con rod is not permitted.

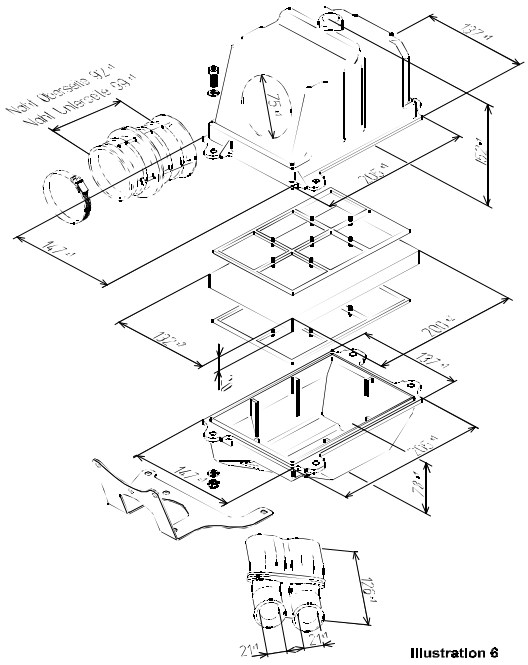
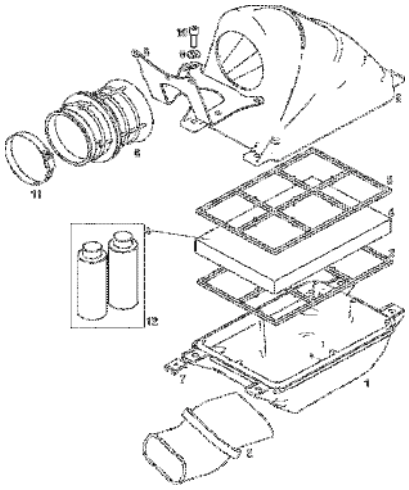
Balance shaft	8.1 8.2 8.3 8.4 8.5	Balance shaft and balance gears must be installed. Different configurations of part no. 237 945 and 237 949 (equal with 237 948) are legal. Surface (1) is not machined and must show cast surface. Measurement from center of balance shaft to outer diameter of fly weight of balance shaft at defined length must not be lower than specified. The minimum weigh of the dry balance shaft must not be lower than 355 grams for balance shaft ROTAX part no. 237 945 and 255 grams for balance shaft ROTAX part no. 237 949 (equal with 237 948). 
Crankcase	9.1	As supplied by the manufacturer. No grinding/polishing is permitted in the two main transfer passages as well as in the crank area.

9.2 Technical Specification (outside the engine seal) for ROTAX kart engines 125 Junior MAX (15 kW) 125 MAX (21 kW).

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

Balance drive	10.1	Balance gears must be installed and must be aligned according to the instruction in the repair manual. 
Ignition system	11.1	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	The casting of the ignition coil has to show the following in casting "129000-" and "DENSO".
	11.3	Ignition coil must show 3 pins at the terminal.
	11.4	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.
	11.5	The pick up must be marked with the numbers 029900-0710, followed by a variable production code in the 2nd line. 
	11.6	Spark plug: DENSO Iridium IW 24 or 27 or 29 or 31 or 34
	11.7	Spark plug cap must be marked with "NGK TB05EMA".

	11.8	Original battery must be used, **FIAMM**-GS type FG20651 or FG20722 or FGHL 20722 or FGH 20902 or **YUASA** 6,5 or **ROTAX** RX7-12B
	11.9	Battery must be fitted with the original battery clamp and battery cover (see illustration below) and must be fixed to the chassis with at least 2 screws. Position of the battery is free. 
Exhaust valve		**Configuration 125 MAX only!**
	12.1	As supplied by the manufacturer with no modification allowed. Compression spring must be fitted.
	12.2	Length of the exhaust valve is 36,5 mm +0,20 mm /-0,30 mm.
	12.3	Width of collar is 4,8 mm +/-0,3 mm 
Centrifugal clutch	13.1	Dry centrifugal clutch, engagement r.p.m. maximum at 3.000 r.p.m. That means, that the kart (without driver) must start to move latest at an engine speed of maximum 3.000 r.p.m.

Intake silencer	14.1	Version 1 or version 2 of intake silencer with integrated, washable air filter has to be used with all parts as shown at illustration and has to be mounted on the support bracket with two screws (in dry and wet race condition). Version 1  Illustration 6 Version 2 
	14.2	At version 1 it is allowed to drill one hole with 8 mm diameter in the lower part of the intake silencer (in the center of the plastic injection mark) to automatically drain the intake silencer in case of heavy rain. This hole may stay unsealed also in dry condition.
	14.3	At version 2 the intake silencer case, bottom is marked on the inside with the ROTAX part no. 225 015.
	14.4	At version 2 the intake silencer case, top is marked on the inside with the ROTAX part no. 225 025.
	14.5	Air filter must be installed as shown in illustrations above.

Carburettor	15.1	DELL'ORTO carburettor
	15.2	"VHSB 34" cast in the housing of the carburettor.
	15.3	"QD" or "QS" stamped in the housing of the carburettor.
	15.4	The complete inlet bore in the casing of the carburettor must show cast surface
	15.5	Needle jet stamped with "FN 266"
	15.6	The carburettor slide must show with size "40" in casting and the bottom end of the slide must show cast surface.
	15.7	Jet needle stamped with "K27" or "K98"
	15.8	Following two combination of floats and idle jets are legal:
	15.8.1	Combination 1: Floats are marked with "gr 5.2" Idle jet is stamped with the digits "30" Idle jet insert is stamped with the digits "30"
	15.8.2	Combination 2: Floats are marked with "gr 3.6" Idle jet is stamped with the digits "60" Idle jet insert is stamped with the digits "60"
	15.9	Start jet is stamped with the digits "60"
	15.10	Settings of the carburettor adjustment screws are free.
	15.11	Main jets smaller than size 160 or bigger than 200 are not recommended by ROTAX
	15.12	Main jets smaller than size 160 and bigger than size 200 are legal also if they are not available from ROTAX.
	15.13	A minimum required size of main jet may be determined for each race event by a "Supplementary Regulation".
Fuel pump	16.1	MIKUNI diaphragm pump, must be mounted on the support bracket (on the bottom or sideways) for the intake silencer.
Fuel filter	17.1	The original fuel filter only (see attached picture) is allowed to be fitted between the fuel tank and the fuel pump.  Any non original fuel filter has to be fitted between the fuel pump and the carburettor.

Radiator	18.1	Single aluminium radiator as shown in illustration
	18.2	Cooling area: Height = 290 mm, width = 133 mm
	18.3	Thickness of radiator = 32 mm
	18.4	Place of fixing the radiator is on right side of engine.
	18.5	Radiator must be mounted with all components as shown in the illustration either like version 1 or like version 2.
	18.6	No additional cooling device is allowed. Tape applied around the radiator is the only allowed air flow control. 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.
	18.7	The removal of the thermostat from the cylinder head cover is an acceptable configuration.

Version 1

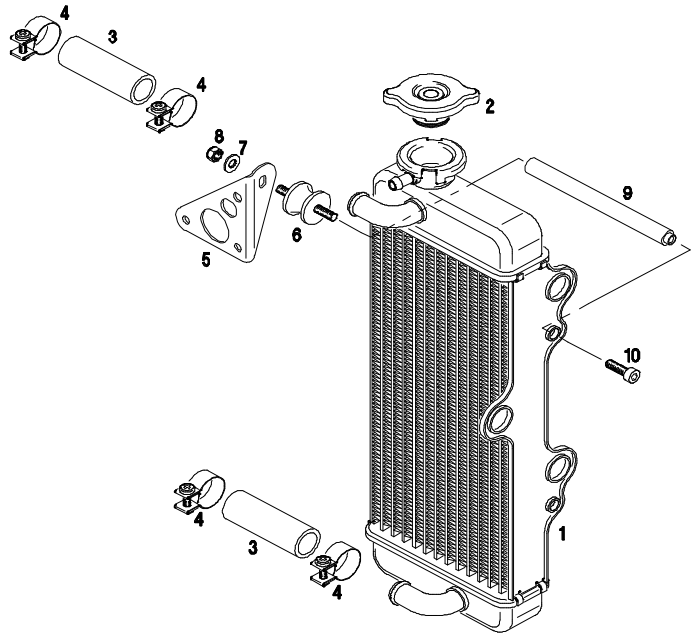
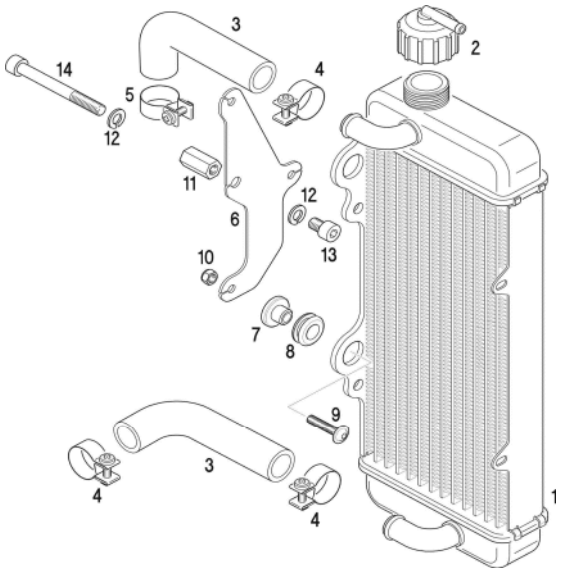
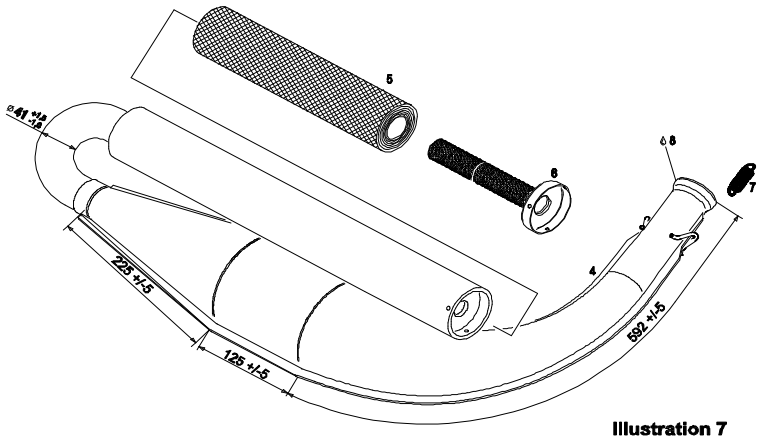


Illustration 5

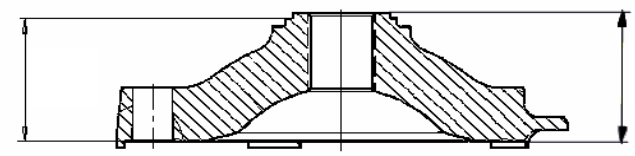
Version 2

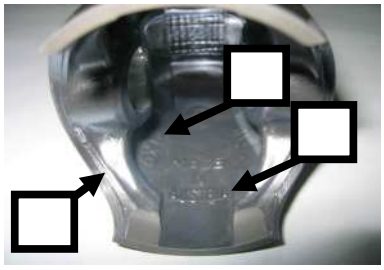
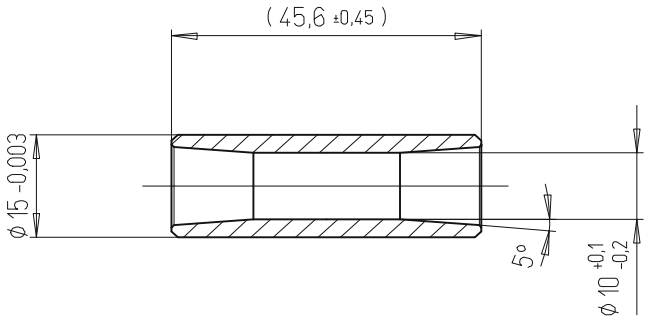


Radiator coolant	19.1	As glycol coolants are prohibited, plain water without any additives has to be used.
Exhaust system	20.1	Must be as supplied by ROTAX and cannot be modified except for the replacement of the silencer absorption material and the use of threaded fasteners in place of the rivets for securing the silencer end cap.
	20.2	Standard exhaust socket must be used.
	20.3	Exhaust pipe with after muffler as shown in illustration.
		 **Illustration 7**
	20.4	Length of inlet cone: 592 mm +/-5 mm (measured on outside from beginning of exhaust pipe until beginning of cylindrical part).
	20.5	Length of cylindrical part of exhaust pipe: 125 mm +/-5 mm.
	20.6	Length of end cone: 225 mm, +/-5 mm
	20.7	Outside diameter of 180° bent tube: 41mm +1,5 mm/–1,0 mm (measured at beginning and end of bend).
	20.8	Just one piece of original isolating mat is allowed to be used.
	20.9	The original exhaust system (tuned pipe and silencer) may not be modified, except for the addition of extra elements for further noise reduction.
	20.10	For measuring the exhaust gas temperature, it is allowed to weld on a socket on top of the exhaust, 50 mm from the ball joint.
	20.11	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).

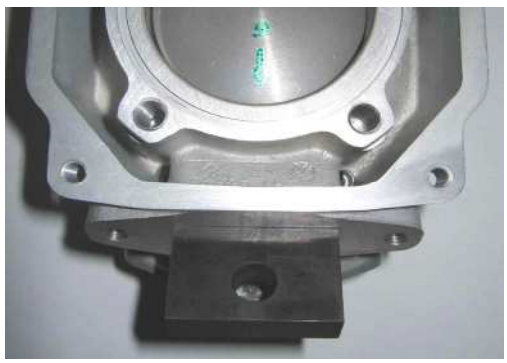
Noise emissions	21.1	Noise isolating mat (see illustration exhaust system) has to be replaced by a original ROTAX spare part, if the noise emission is exceeding 92 dB (A).
	21.2	Noise emission measuring procedure: The measuring place has to be at section of the track where the engine is operated under full load and at a rpm range of 11.000 to 12.000 rpm. The microphone has to be installed 1 meter above the level of the track in a rectangular angle to the track. The distance between the microphone and the kart on the ideal line on the track has to be 7,5 meters. The kart has to be operated under full load at the ideal line on the track.

9.3 Technical Specification (within the engine seal) for ROTAX kart engine 125 MAX DD2 (24 kW).

Squish gap	1.1	125 MAX DD2 0,90 mm - 1,30 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 center) 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.
Combustion chamber insert	2.1	Cast identification code has to be "223 889" or "223 389 1" or "223 389 2"
	2.2	Casted wording "ROTAX" and/or "MADE IN AUSTRIA" must be shown. 
	2.3	Heights of combustion chamber insert have to 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). 
	2.4	The profile of the combustion chamber insert has to 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 has to be the same over the whole profile. 

Piston with ring assy.	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).
	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. 
	3.3	Original, 1 mm, magnetic, rectangular piston ring. Piston ring is marked either with "E CRY K" or "ROTAX 215 547".  
Gudgeon pin	4.1 4.2	Gudgeon pin is made out of magnetic steel. Dimensions must be according to the drawing. 

Cylinder	5.1	Light-alloy-cylinder with GILNISIL-plating. Any re-plating of cylinder is not allowed.
	5.2	Cylinder with one main exhaust port and two side exhaust ports.
	5.3	Maximum bore of cylinder = 54,035 mm (measured 10 mm above the exhaust port).
	5.4	Cylinder has to be marked with the "ROTAX" logo (see picture below).
	5.5	Cylinder with pneumatic timed exhaust valve. Cylinder has to be marked with the identification code 613 930. 
	5.6	Height of cylinder has to be 86,7 mm -0,05/+0,1 mm. 
	5.7	All transfer ports and passages have cast finish surface except some pre-existing , factory removal of flashing from inlet 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.

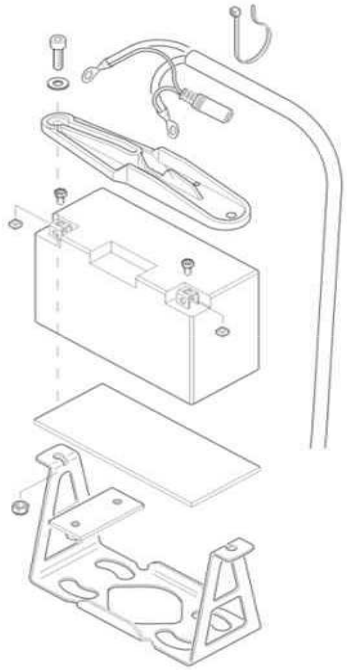
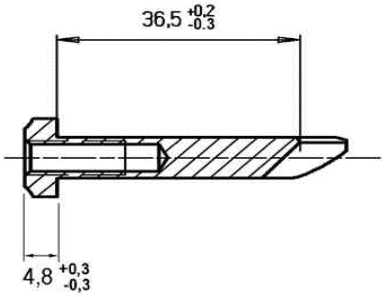
	5.8	The "exhaust port timing" (distance from the top of the cylinder to the top of the exhaust port) has to be checked by means of the template (ROTAX part no. 277 397). Insert the template into the cylinder, that the template is touching the cylinder wall and that the finger of the template is located 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 filler gauge between the top of the cylinder and the filler gauge. It may not be possible to use a filler gauge thicker than 0,70 mm (it may not be possible to insert a filler gauge with 0,75 mm). NOTE: Take care to use the corresponding gauge of the template (Junior, MAX or DD2) for the respective cylinder! 
	5.9	If the piston is covering completely the exhaust port, it must be possible to insert the exhaust valve gauge (ROTAX part no. 277 030) until it stops at the surface of the cylinder (no gap allowed). 

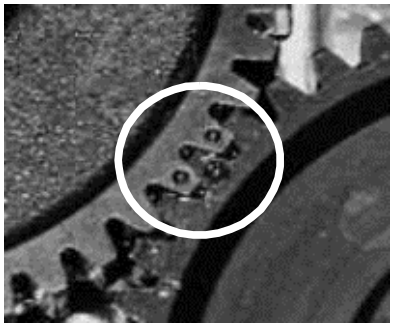
Inlet system	6.1	Inlet manifold is marked with the name "ROTAX" and the identification code "267 410". 
	6.2	Some factory flash removal may be present at the conjunction of the inside contour and the carburettor stop mounting face. This is a manual trimming operation consisting of a small corner break of less than 1 mm in width. No additional grinding or machining is permitted.
	6.3	The reed valve assy. is equipped with 2 pedal stops and 2 reeds, each having 3 pedals.
	6.4	The thickness of the reeds is 0,6 mm +/- 0,08 mm.
Crankshaft	7.1	Stroke 54,5 mm +/-0,1 mm
	7.2	Con rod has to show forged numbers "213", "365" or "367" on shaft. 
	7.3	Shaft of con rod is not machined (copper plated). Grinding of polishing of shaft of con rod is not permitted.
2-speed gearbox	8.1	Primary shaft with 19 teeth for 1st gear and 24 teeth for 2nd gear.
	8.2	Idle gear for 1st gear has to have 81 teeth.
	8.3	Idle gear for 2nd gear has to have 77 teeth.
Crankcase	9.1	As supplied by the manufacturer. No grinding/polishing is permitted in the two main transfer passages as well as in the crank area.

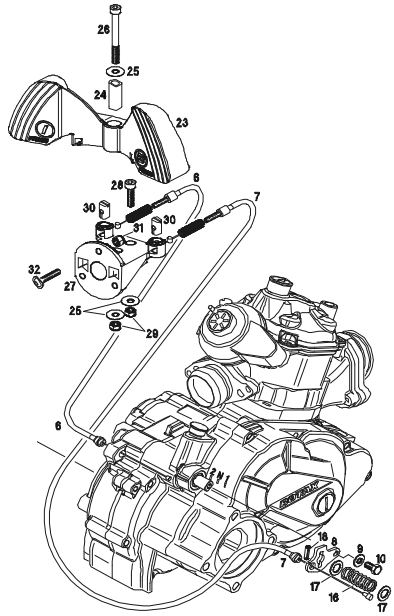
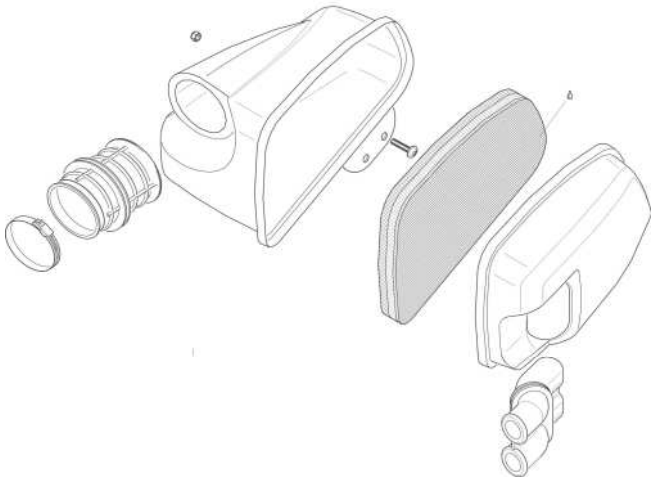
9.4 Technical Specification (outside the engine seal) for ROTAX kart engine 125 MAX DD2 (24 kW)

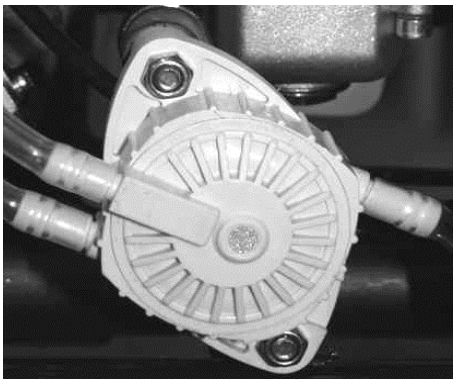
It is the responsibility of the competitor to check his equipment (all components outside the engine seal and mentioned below), to assure that his equipment is in line with the technical specification below!

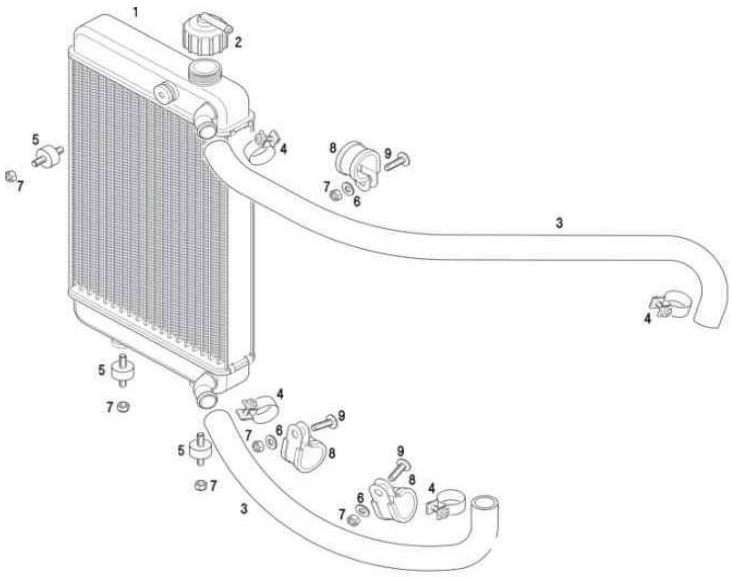
Ignition system	10.1	DENSO digital battery ignition, variable ignition timing, no adjustment necessary and possible. Race officials may request at any time that the competitor replace the ignition coil with a new unit provided by the race administration.
	10.2	The casting of the ignition coil has to show the following in casting "129000-" and "DENSO".
	10.3	Ignition coil must show 4 or 6 pins at the terminal.
	10.4	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.
	10.5	The pick up must be marked with the numbers 029900-0710, followed by a variable production code in the 2nd line. 
	10.6	Spark plug: DENSO Iridium IW 24 or 27 or 29 or 31 or 34
	10.7	Spark plug cap must be marked with "NGK TB05EMA".
	10.8	Original battery must be used, **FIAMM-GS** type FG20651 or FG20722 or FGHL 20722 or FGH 20902 or **YUASA** 6,5 or **ROTAX** RX7-12B

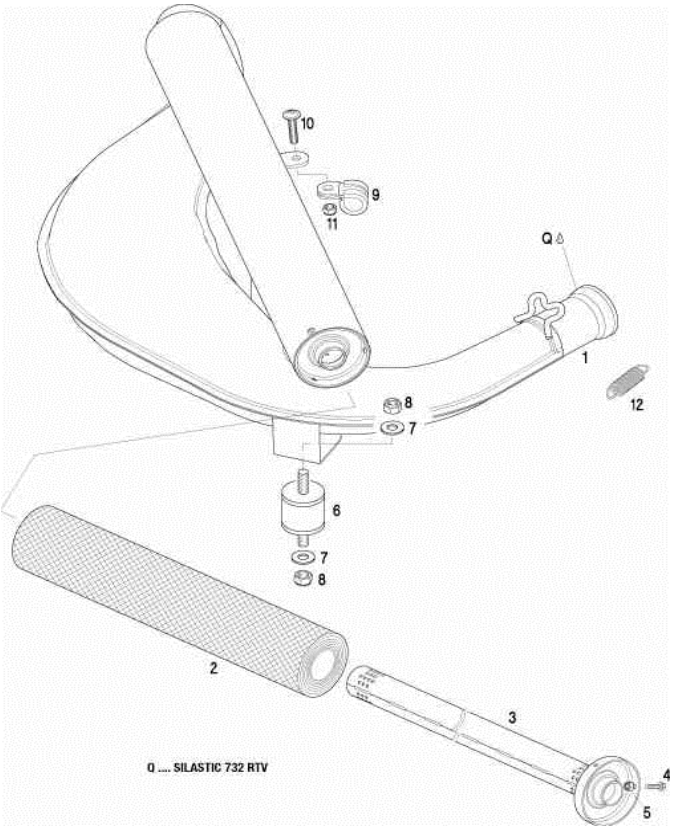
	10.9	Battery must be fitted with the original battery clamp and battery cover (see illustration below) and must be fixed to the chassis with at least 2 screws. Position of the battery is free. RM1 kart has to have fitted the battery on the left side in front of the radiator. Original battery clamp and battery cover must be used. 
Exhaust valve	11.1 11.2 11.3	As supplied by the manufacturer with no modification allowed. Compression spring must be fitted. Length of the exhaust valve is 36,5 mm +0,20 mm /-0,30 mm. Width of collar is 4,8 mm +/-0,3 mm 

Balance drive	12.1 12.2 12.3	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. Fly weight of balance gear must show cast surface (see picture below).  
Centrifugal clutch	13.1	Centrifugal clutch in oil bath, engagement r.p.m. maximum at 4.000 r.p.m. That means, that the kart (without driver) must start to move latest at an engine speed of maximum 4.000 r.p.m.
Primary drive	14.1 14.2	Original primary drive gears of following gear ratio options must 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”.

Gear shifting	15.1 15.2 15.3	The 2-speed gearbox has to be operated with the original supplied shift paddle (pos. 23) on the steering wheel via the two cable bowden (pos. 6 + pos. 7). Cutting of the original shift paddle or adding of pads to the shift paddle is allowed to adjust the paddle to specific steering wheels. Original hub for steering wheel (pos. 27) must be used. 
Intake silencer	16.1 16.2 16.3 16.4 16.5	Intake silencer with integrated, washable air filter as shown in illustration below. The intake silencer case is marked on the inside with the ROTAX part no. 225 012. The intake silencer cover is marked on the inside with the ROTAX part no. 225 022. The air filter is marked with the ROTAX part no. 225 052. The air filter must be assembled between the intake silencer case and the intake silencer cover that the whole area of the intake silencer case is covered. 

Carburettor	17.1	DELL'ORTO carburettor
	17.2	"VHSB 34" cast in the housing of the carburettor.
	17.3	"QD" or "QS" stamped in the housing of the carburettor.
	17.4	The complete inlet bore in the casing of the carburettor must show cast surface
	17.5	Needle jet stamped with "FN 266"
	17.6	The carburettor slide must show with size "40" in casting and the bottom end of the slide must show cast surface.
	17.7	Jet needle stamped with "K27" or "K98"
	17.8	Following two combination of floats and idle jets are legal:
	17.8.1	Combination 1: Floats are marked with "gr 5.2" Idle jet is stamped with the digits "30" Idle jet insert is stamped with the digits "30"
	17.8.2	Combination 2: Floats are marked with "gr 3.6" Idle jet is stamped with the digits "60" Idle jet insert is stamped with the digits "60"
	17.9	Start jet is stamped with the digits "60"
	17.10	Settings of the carburettor adjustment screws are free.
	17.11	Main jets smaller than size 160 or bigger than 200 are not recommended by ROTAX
	17.12	Main jets smaller than size 160 and bigger than size 200 are legal also if they are not available from ROTAX.
	17.13	A minimum required size of main jet may be determined for each race event by a "Supplementary Regulation".
Fuel pump	18.1	Original diaphragm fuel pump (grey or black colour) must be fitted by means of two original silent blocks to the chassis or the engine. 
	18.2	Center line of fuel pump may not be higher than the center line of the carburettor.

Fuel filter	19.1	The original fuel filter only (see attached picture) is allowed to be fitted between the fuel tank and the fuel pump.  Any non original fuel filter has to be fitted between the fuel pump and the carburettor.
Radiator	20.1 20.2 20.3 20.4 20.5 20.6 20.7 20.8	Single aluminium radiator (see illustration below). Name "ROTAX" is stamped in the top of the radiator. Cooling area: Height = 284 mm, width = 202 mm Thickness of radiator = 32 mm The radiator must be mounted on the left side of the kart beside the seat. The highest point of the radiator with cap may not be higher than 400 mm above the main tube of the kart chassis. No additional cooling device is allowed. Tape applied around the radiator is the only allowed air flow control. 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. The removal of the thermostat from the cylinder head cover is an acceptable configuration. 
Radiator coolant	21.1	As glycol coolants are prohibited, plain water without any additives has to be used.

Exhaust system	22.1	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 the rivets for securing the silencer end cap.
	22.2	Standard exhaust socket must be used.
	22.3	Exhaust pipe with after muffler (see illustration below). 
	22.4	Diameter of hole of end cap of (pos 5, illustration above): 19,6 mm +/-0,2 mm.
	22.5	Just one piece of original isolating mat is allowed to be used.
	22.6	The original exhaust system (tuned pipe and silencer) may not be modified, except for the addition of extra elements for further noise reduction.
	22.7	For measuring the exhaust gas temperature, it is allowed to weld on a socket on top of the exhaust, 50 mm from the ball joint.
	22.8	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).

Noise emissions	23.1	Noise isolating mat (see illustration exhaust system) has to be replaced by a original ROTAX spare part, if the noise emission is exceeding 94 dB (A).
	23.2	Noise emission measuring procedure: The measuring place has to be at section of the track where the engine is operated under full load and at a rpm range of 11.000 to 12.000 rpm. The microphone has to be installed 1 meter above the level of the track in a rectangular angle to the track. The distance between the microphone and the kart on the ideal line on the track has to be 7,5 meters. The kart has to be operated under full load at the ideal line on the track.