Homologation N°

01/ENG/11

MOTOR SPORTS ASSOCIATION UNITED KINGDOM MSA

HOMOLOGATION OF KART ENGINE

Category	**ROTAX SENIOR MAX**
Manufacturer	Bombardier Rotax
Model	FR125
UK Agent	JAG Engineering
Valid From	1st June 2011
Number of pages	21

This Homologation Form reproduces descriptions, illustrations and dimensions of the engine at the moment of the MSA Homologation. This document may be supplemented by official amendment. This document must be read in conjunction with the appropriate Class Regulations.

Photo of drive side of engine

Photo of opposite side of engine

SIGNATURE AND STAMP OF THE MSA	
MSA	Date: **1st June 2011** Signed by: **John Ryan** Position: **MSA Technical Executive**

Any reproduction must be authorised by the MSA

Photo of rear of engine

Photo of front of engine

Photo of top of engine

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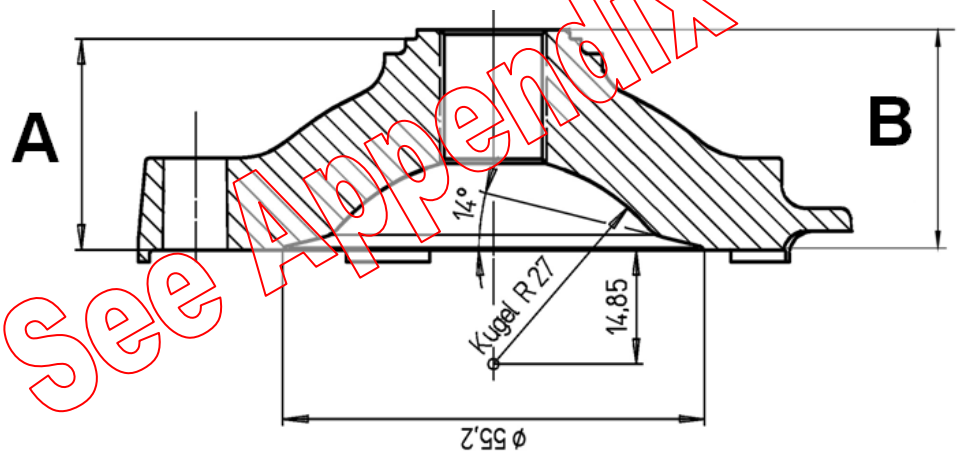
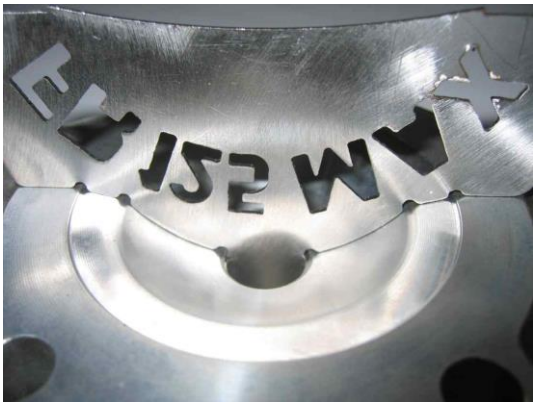
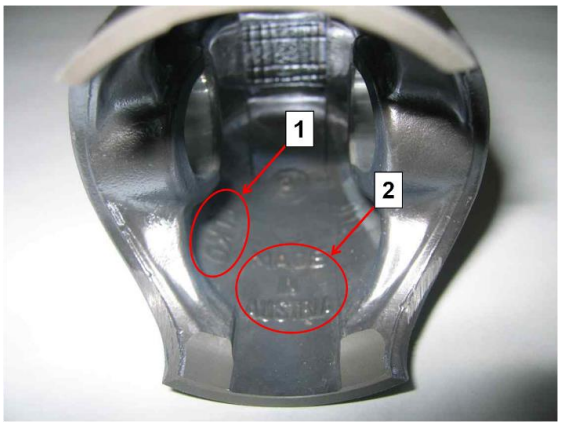
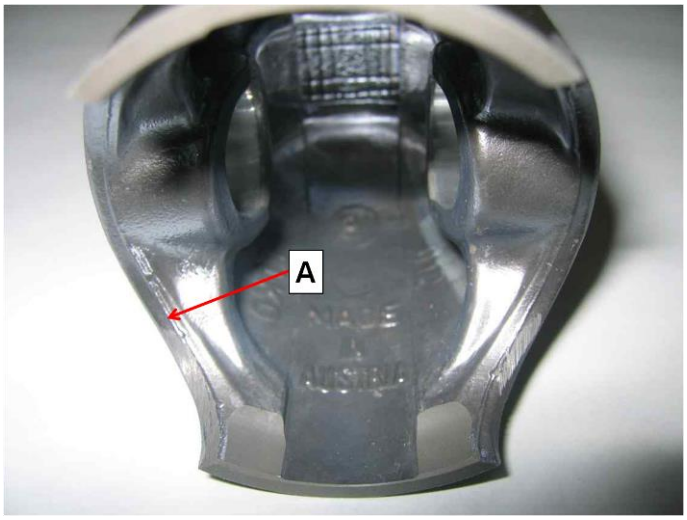
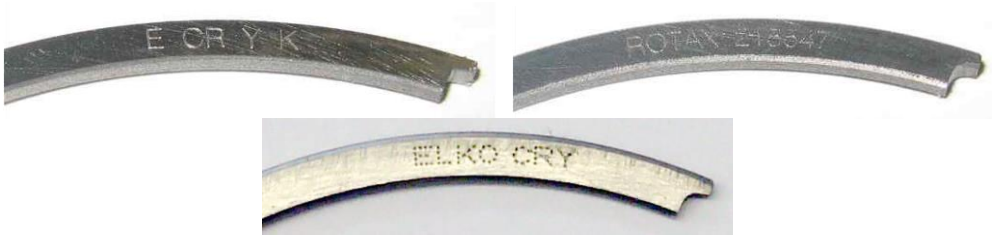
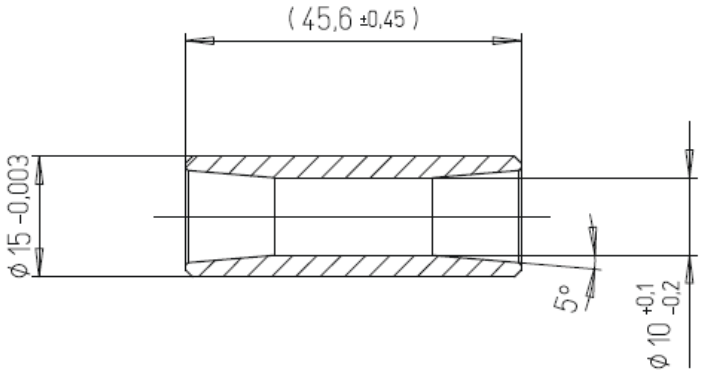
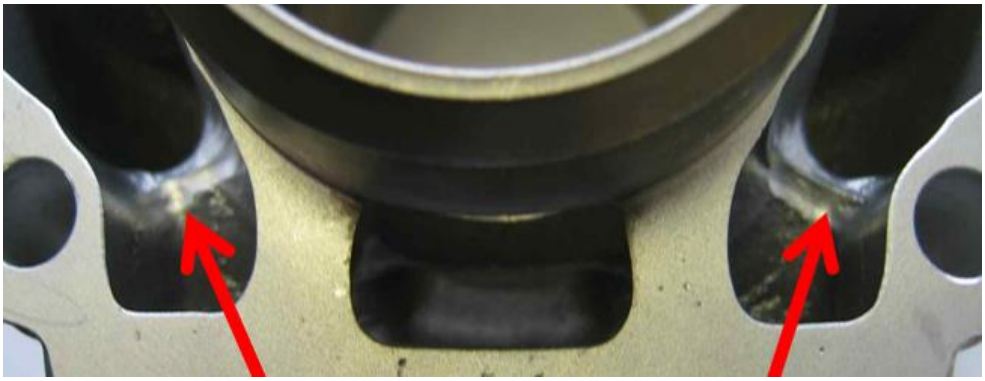
Last updated 13 August 2020

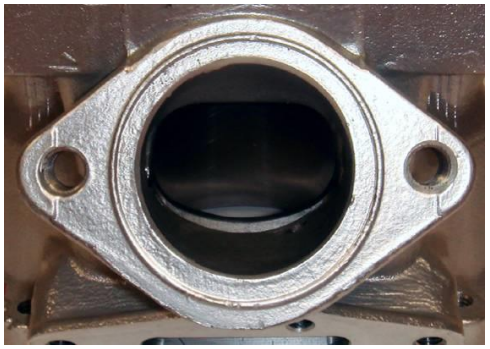
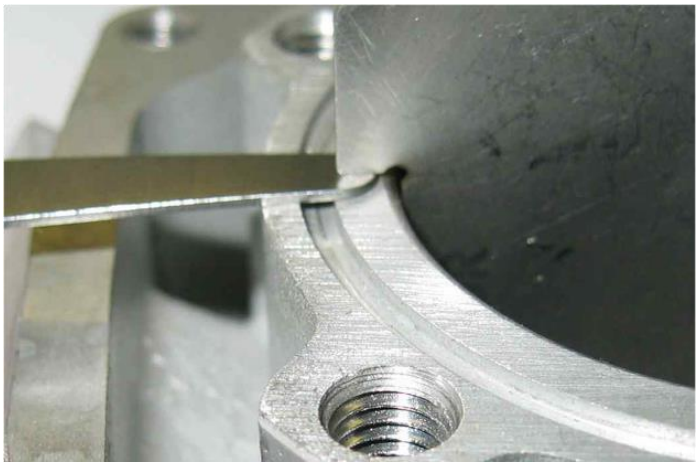
TECHNICAL INFORMATION

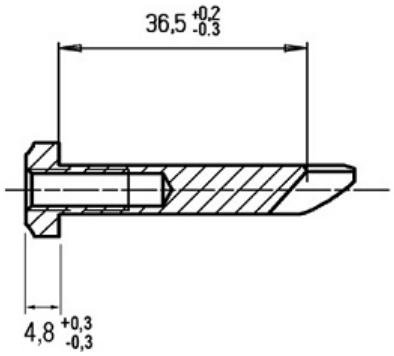
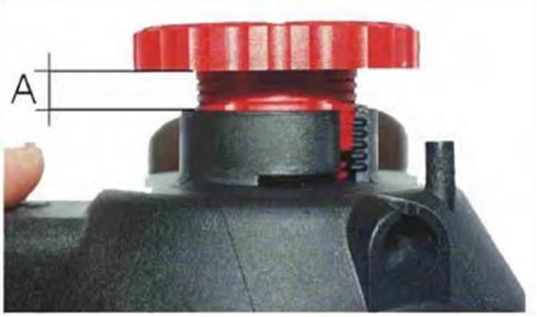
1. Squish Gap	**1.1**	Minimum: 0.95mm Average of two measurements. To be measured on both sides across the piston pin axis using 2.0mm solder. (Squish can be adjusted by using original Rotax cylinder base gaskets).
2. Combustion Chamber Insert	**2.1**	Only inserts with the following ID codes will be permitted: **223 389** **223 389.1** **223 389.2** See Appendix 51
	2.2	Casted wording "**Rotax**" and/or "**MADE IN AUSTRIA**" must be present.  
	2.3	Heights of combustion chamber insert: **A:** 27.55mm + 0.0mm, - 0.1mm **B:** 28.80mm ± 0.2mm  See Appendix 51

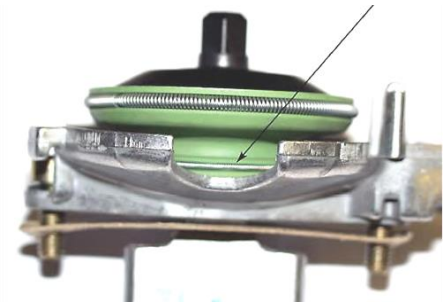
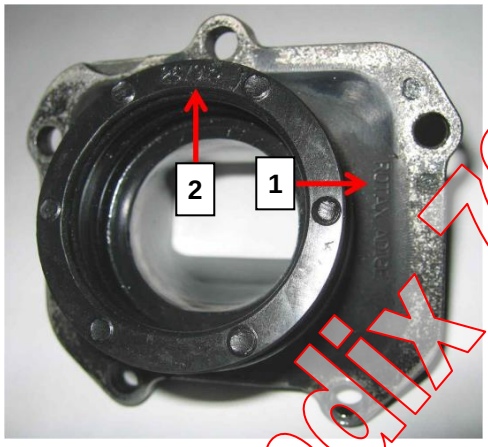
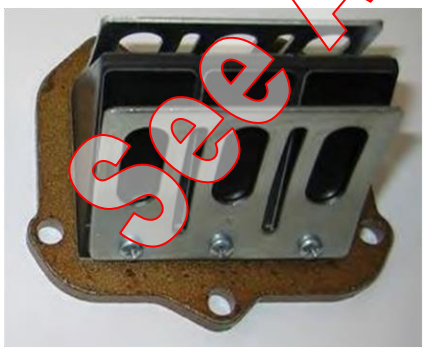
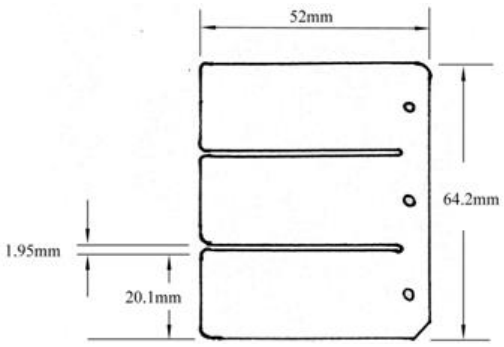
	2.4	Combustion chamber insert profile must be checked with the Rotax profile gauge (part no. **227 390**). The profile of the combustion chamber insert should approximately follow the profile of the gauge.  **NB:** This check is just for reference, in case of doubt detailed measurements in accordance with the diagram should be taken.
	2.5	Volume of combustion chamber mounted on engine, with piston at TDC: 10.7cc (to the top of the spark plug thread) minimum using a Class A or digital burette.
3. Piston & Rings	**3.1**	Coated cast aluminium piston, with one piston ring.  Inside of piston to be marked "**ELKO**" (1) and "**MADE IN AUSTRIA**" (2). 

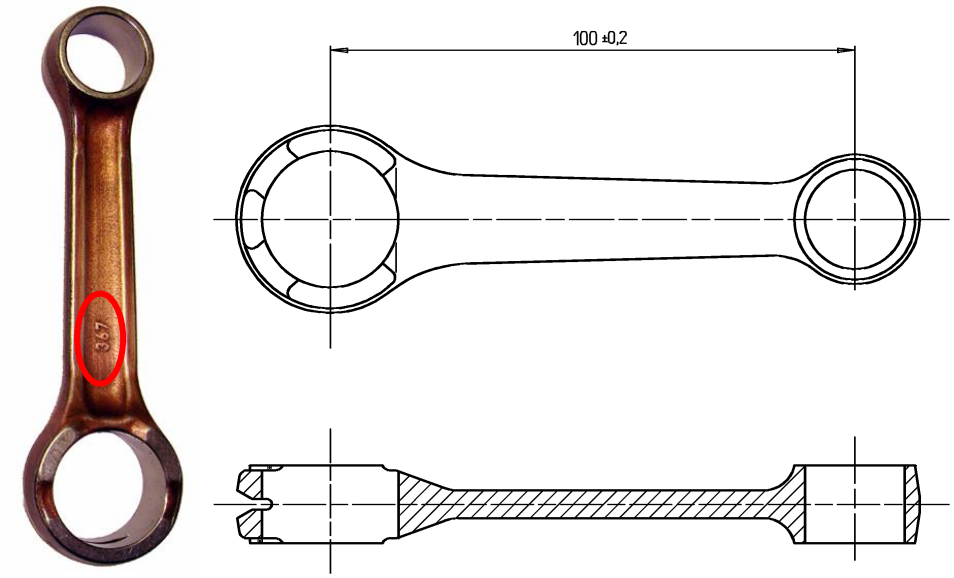
	3.2	Machined areas are: Crown of piston, outside diameter, groove for piston ring, bore for piston pin, inside diameter at bottom of piston skirt and some pre-existing factory removal of flashing at the cut out of the piston skirt (A).  All other surfaces are not machined and have cast finish.
	3.3	One 1mm rectangular piston ring marked with one of: **E CRY K** **ROTAX 215 547** **ELKO CRY** 
4. Gudgeon Pin	**4.1**	Material: Magnetic Steel
	4.2	Dimensions: 
	4.3	Minimum weight: 32.10g

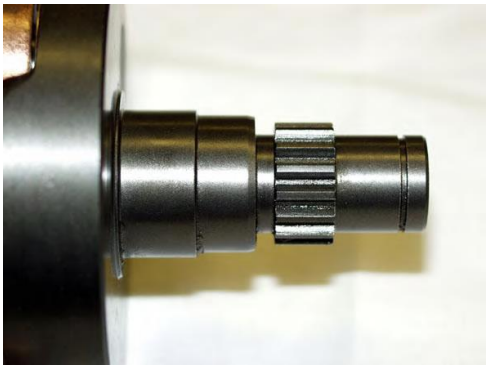
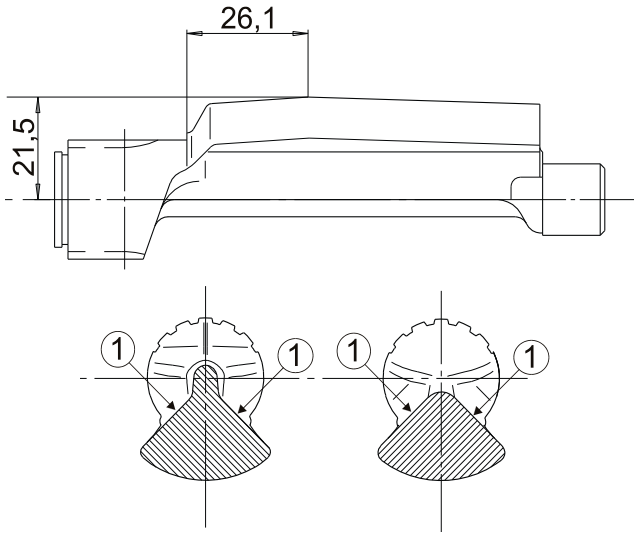
5. Cylinder	**5.1**	Material: Light alloy with GILNISIL plating. Any re-plating is not permitted. Any additional fettling or machining is not permitted.
	5.2	Cylinder with one main exhaust port.
	5.3	Bore: 54.035mm (max.). Measured 10mm above the exhaust port.
	5.4	Cylinder with exhaust power valve. Cylinder must be marked with "**ROTAX**" and part number **223 993** 
	5.5	Height of Cylinder: 87.00mm +0.10mm, -0.05mm 
	5.6	All transfer ports and passages have cast finish surfaces except for some removal (by the manufacturer) of cast burr at the inlet passage and exhaust port and passages. 

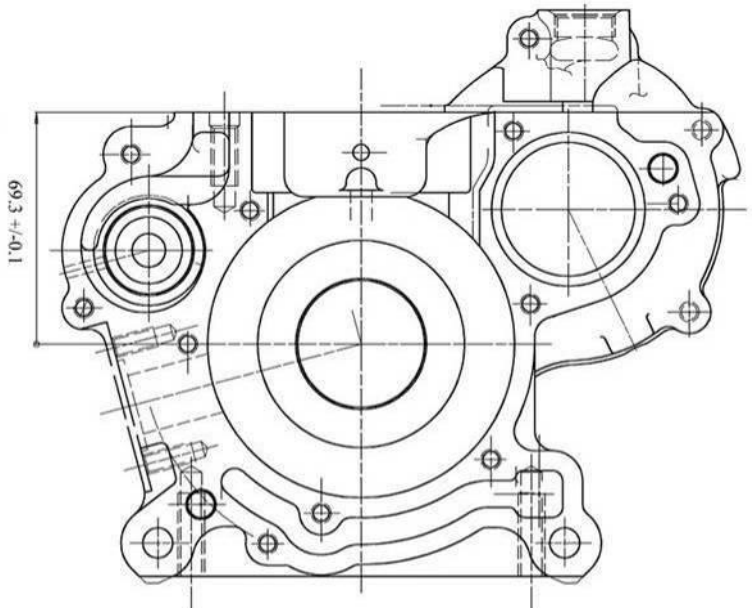
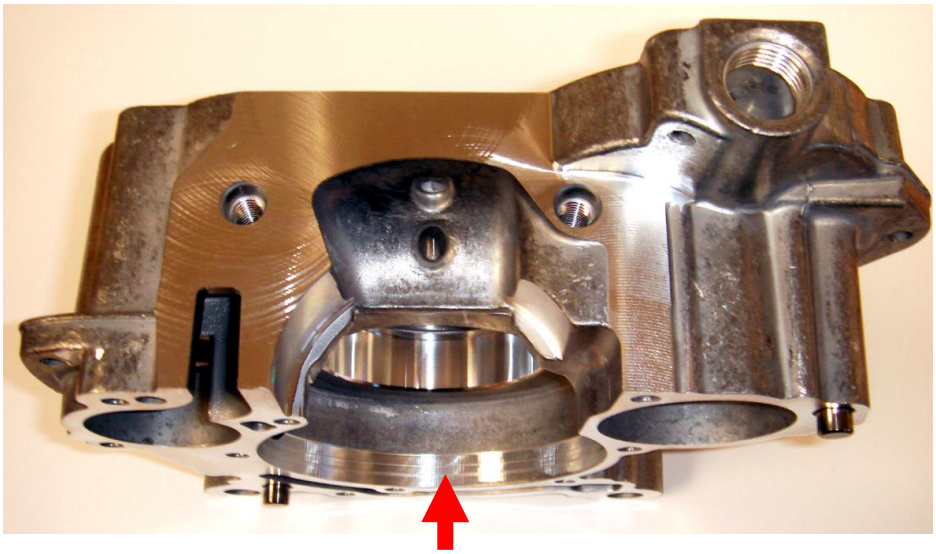
	5.7	All ports may have chamfered edges to prevent ring snagging. Any additional fettling or machining is not permitted. The upper edge of the central boost port may show signs of factory machining.
	5.8	The sealing flange for the exhaust socket may show either cast finish surface or signs of machining from the manufacturer. Cast finish:  Machined finish: 
	5.9	The exhaust port may show signs of factory CNC machining all round. It may also show signs of partial factory manual grinding to eliminate minor casting defects and NIKASIL burr at the end of the NIKASIL plating. Any additional fettling or machining is not permitted.
6. Exhaust Port Timing	**6.1**	The exhaust port timing must be checked using the Rotax template (part no. **277 397**). Insert the template into the cylinder, so that it is touching the cylinder wall and so 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 feeler gauge between the top of the cylinder and the template. It must not be possible to fit a feeler gauge of **0.75mm** between the top of the cylinder and the template. 

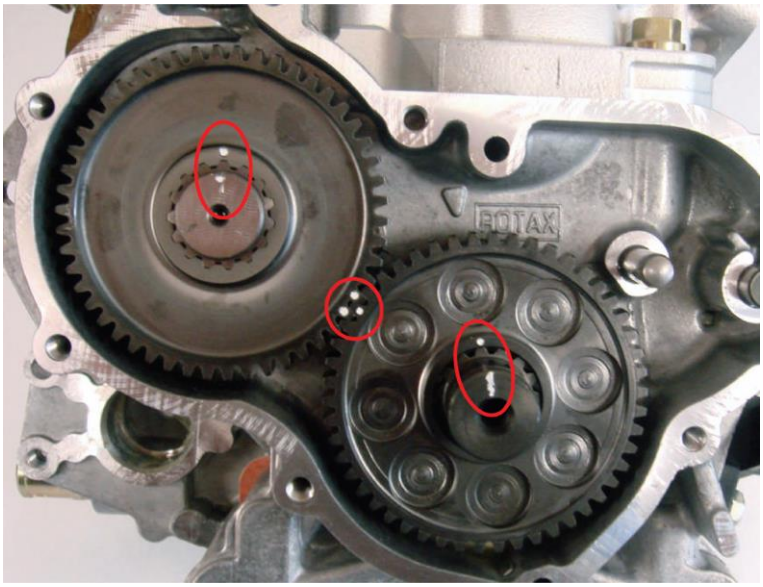
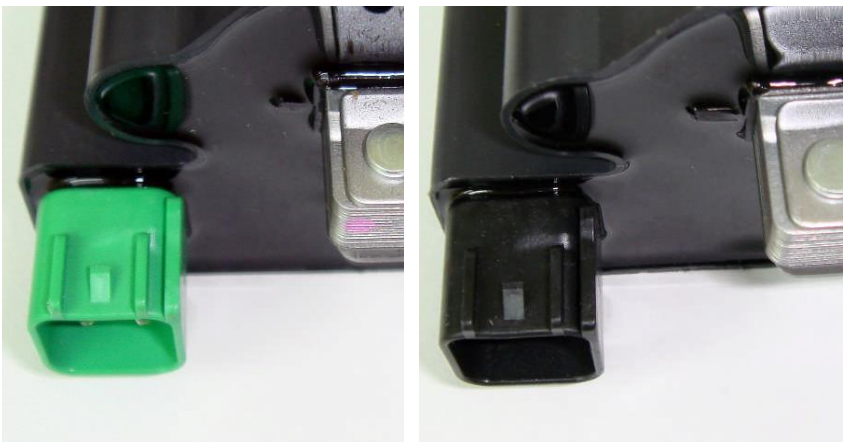
7. Exhaust Valve	**7.1**	Exhaust valve as supplied by the manufacturer with no modification permitted. Compression spring must be fitted.
	7.2	Length: 36.5mm +0.2mm, -0.3mm Width of collar: 4.8mm ±0.3mm 
	7.3	With the piston moved in the direction of the top of the cylinder and just covering the exhaust port, it must be possible to insert the Rotax exhaust gauge (part no. **277 030**) until it stops at the surface of the cylinder. It must not be possible to insert a 0.05mm feeler gauge beneath the exhaust gauge.
	7.4	Exhaust power valve stud (part no. **441 355**)  Exhaust power valve piston (part no. **854 440**)  Exhaust power valve bellow (part no. **260 723**)  Exhaust power valve bellow spring (part no. **939 280**)  Exhaust power valve adjustment screw (part no. **641 890**)  

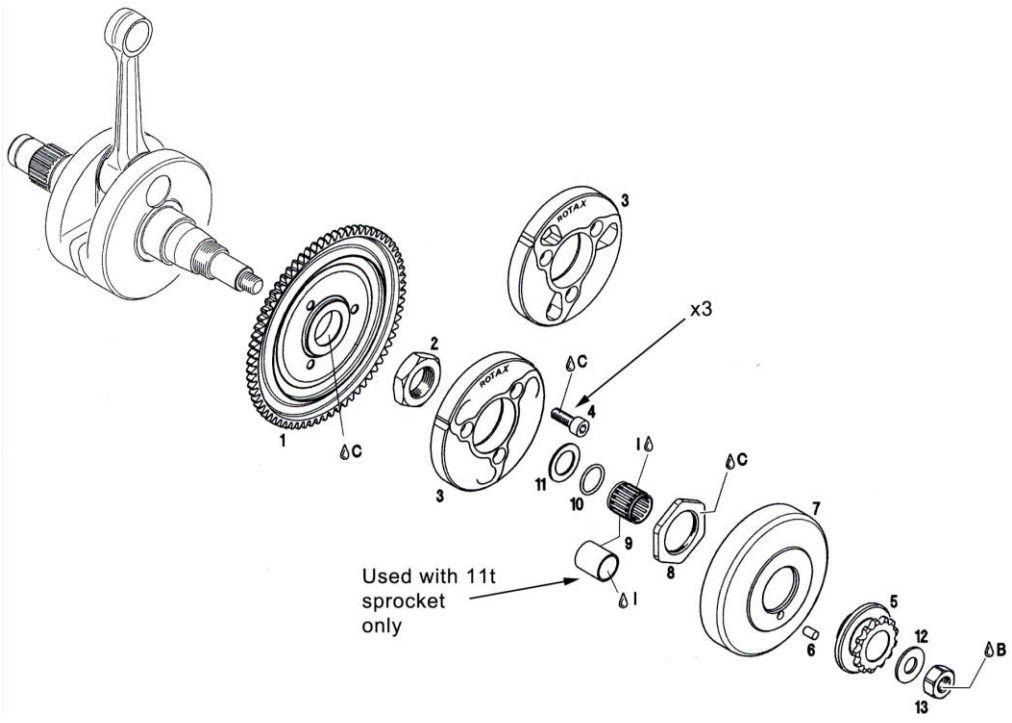
	7.5	An additional exhaust valve bellow spring (part no. **838 255**) 70-1.7-0.3 may be used on all exhaust valves.  
	7.6	One original exhaust valve gasket may be fitted between the exhaust valve housing and cylinder. The fitting of more than one exhaust valve gasket is not permitted.
8. Inlet System	**8.1**	Inlet manifold must be marked with "**ROTAX**" (1) and the ID code **267 915** (2)  Some factory flash removal may be present in the area 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 3mm in width. No additional grinding or machining is permitted.
	8.2	The reed valve assembly (part no. **224 389**) consists of two petal stops and two reeds consisting of three petals each. The thickness of the reeds is 0.60mm ± 0.08mm.   The reed stops must form an arc, no other shaping is permitted. One original Rotax reed block gasket must be used between the reed block and cylinder.

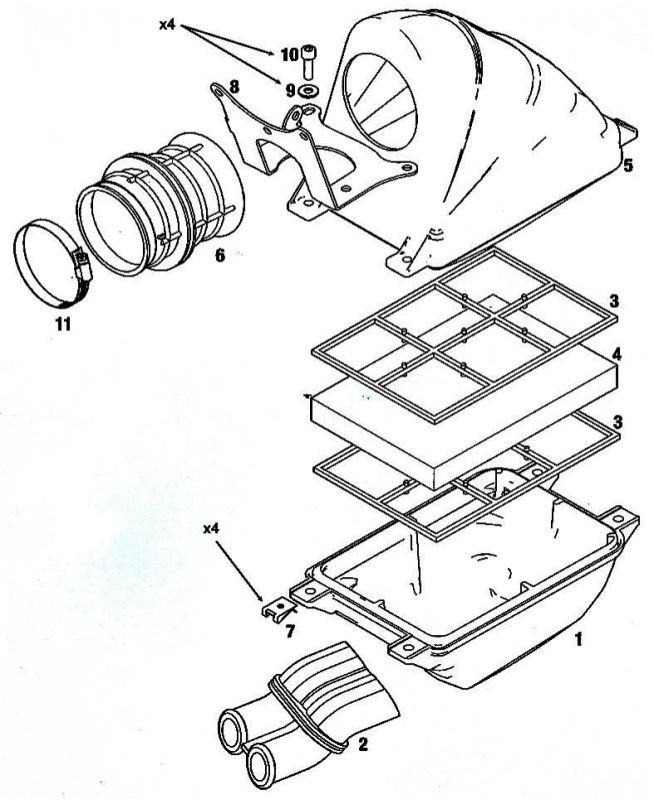
	8.3	One original Rotax reed block gasket must be used between the reed block and cylinder. The fitting of more than one reed block gasket is not permitted.
9. Crankshaft	**9.1**	Stroke: 54.5mm ±0.1mm
	9.2	Con rod with part number **367** marked on shaft:  No modification is allowed. Shaft of con rod is not machined (copper plated).
	9.3	Silver plated Big End Thrust Washer. 
	9.4	Big End Bearing with 16 loose needle rollers. 
	9.5	Plastic Water Pump Driver Gear (part no. **635 850**). 

	9.6	Crankshaft: 
	9.7	Main Bearing (part no. **832 533**) FAG plastic cage. 
10. Balance Shaft	**10.1**	Balance shaft (part no. **237 948** or **237 949**) must be installed and operational. 
	10.2	No modifications allowed (see drawings).
	10.3	Surface (1) is not machined and must be cast surface.
	10.4	Measurement from centre of balance shaft to outer diameter of flyweight of balance shaft must not be lower than 21.5mm
	10.5	Minimum weight of dry balance shaft: 255g

11. Crankcase	**11.1**	Rotax part no. **295 911**, as supplied by manufacturer without any additional grinding, polishing or machining other than specified below. No modifications are allowed (see drawing below). Minimal fettling is permitted to repair damaged surfaces due to mechanical failure. 
	11.2	Crankcase centre to cylinder support face: 69.30mm ± 0.1mm
	11.3	Crankcase may have additional machining on the balance gear and drive side. Example of machining shown below.  Dimensions for additional machining: Maximum diameter of the clearance bore: 92.50mm Maximum depth of the clearance bore on the balance gear side: 10.80mm Maximum depth of the clearance bore on the clutch side: 8.80mm
	11.4	One original crankcase and gear cover gasket must be fitted. The fitting of more than one crankcase gasket or gear cover is not permitted. No re-machining is allowed.

12. Balance Drive	**12.1**	9mm thick steel balance gears (Rotax part no. **234 435**) must be installed and must be aligned as shown below. 
13. Ignition Unit	**13.1**	**DENSO** digital battery unit, variable ignition timing with no adjustment. Triggering slot in crankshaft flywheel.
	13.1	The ignition coil must have the following markings moulded in the casing: **129000-** and **DENSO**.
	13.2	The ignition coil must show three pins at the terminal.
	13.3	Connector housing of ignition coil must be either green or black colour. 
	13.4	Minimum length of ignition wire (HT lead): 210mm Measured from outlet of cable at ignition coil to outlet of cable at spark plug connector (= visible length of the wire)
	13.5	The ignition coil must be mounted by means of two original rubber mounting blocks or equivalent to the gearbox cover. Only in the case of chassis component interference with the original mounting position it is permitted to relocate the ignition coil by the use of an extension bracket. The extension bracket must be attached to the original gearbox cover mounting holes.

	13.6	The ignition pick-up must be marked with the number **029600-0710** followed by a variable production code in the second line.  In the case of doubt, an easy check of the ignition pick-up is to place a steel ball-bearing (3-5mm diameter) on the pick-up (engine side), the ball bearing must stay in the centre of the pick-up surface.
14. Spark Plug	**14.1**	Unmodified long reach complete with sealing washer.
	14.2	Makes and types permitted are as defined in Class Regulations.
	14.3	Spark plug cap of type originally supplied, must be marked: **NGK TB05 EMA**
15. Battery	**15.1**	Only lead acid gel batteries are permitted.
	15.2	Any make of battery is permitted provided it is of the same specification as originally supplied by Rotax. 12v / 6.5Ah, 12V / 7.2Ah or 12v / 9Ah.
16. Clutch	**16.1**	Dry centrifugal clutch, engagement at maximum 4000 rpm. 

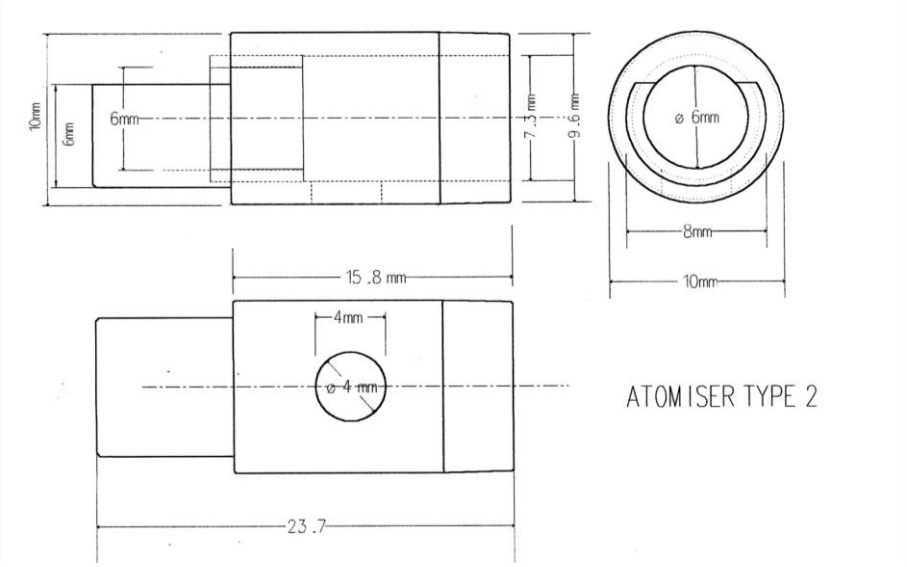
	16.2	Steel clutch element as shown below. 
	16.3	*Clutch dimensions:* Height: 11.45mm minimum Thickness: 24.10mm minimum *Clutch Drum dimensions:* Outer Diameter: 89.50mm minimum Inner Diameter: 84.90mm minimum Height of sprocket with clutch drum assembly: 33.90mm minimum
	16.4	All sprockets must use a 15 x 19 x 17 needle cage bearing and O-ring seal, except in the case of an 11 tooth sprocket. An 11 tooth sprocket must be fitted with a plain bearing with or without an O-ring seal.
17. Intake Silencer	**17.1**	Intake Silencer must be used with all parts as shown below. 

	17.2	Case bottom must be marked inside with Rotax part no. **225 015**. Case top must be marked inside with Rotax part no. **225 025**.
	17.3	The intake silencer must be mounted on the support bracket (Rotax part no. **251 720**) in a manner to prevent rotation. 
	17.4	Air filter must be installed as shown in diagram above. The two halves of the intake silencer must be securely screwed together using four M6 screws and nuts. All four screws must be sufficiently tightened to securely clamp the two halves of the intake silencer together.
18. Carburettor	**18.1**	**Dell'orto** type **VHSB 34** (cast in body) **QD** or **QS** (stamped on body). All parts used must be unmodified genuine Rotax or Dell'orto parts as supplied by Rotax.
	18.2	The inlet bore of the main body of the carburettor must have a cast finish. This does not include the venture insert which is machined.
	18.3	Main Jet: Free
	18.4	Needle Jet Atomiser: Stamped **FN 266** (must have four rows of four holes cross-drilled through the tube)
	18.5	Carb. slide: **40** cast in slide top, bottom end of slide must show cast surface
	18.6	Needle: Stamped **K27** or **K98**
	18.7	Choke Jet: Stamped **60**
	18.8	Float Needle Valve (Inlet Needle Valve): Marked **150**
	18.9	Float Arm: Part no. **261 290**
	18.10	Float bowl plug screw (part no. **261 373**) or alternative plug screw (part no. **261 030**) may be used.

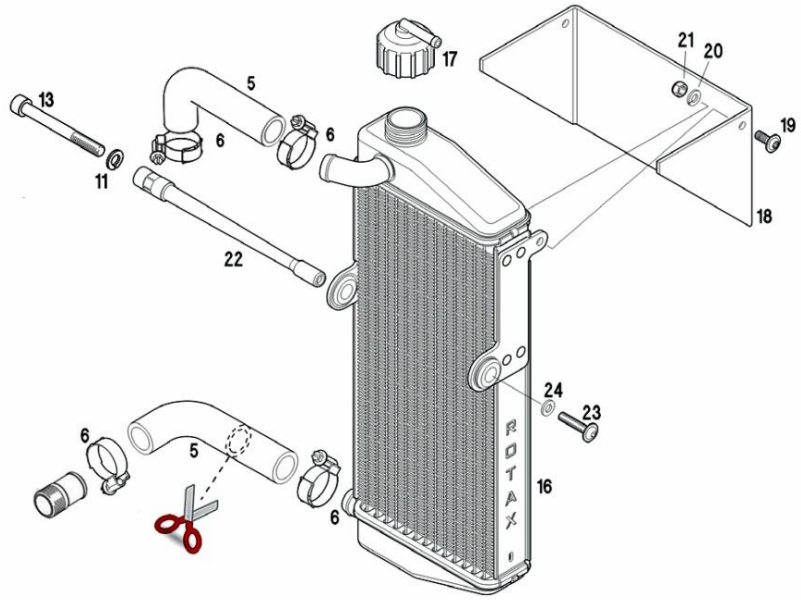
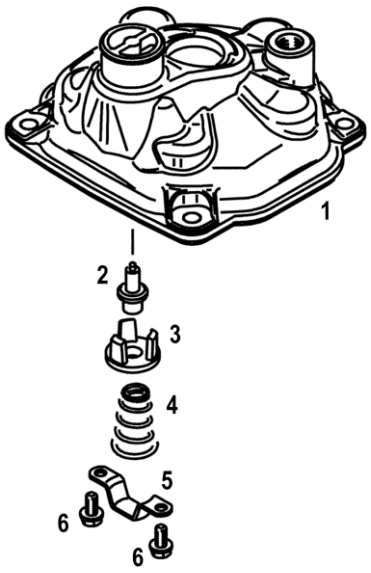
	18.11	The following combinations of floats and idle jets are permitted:

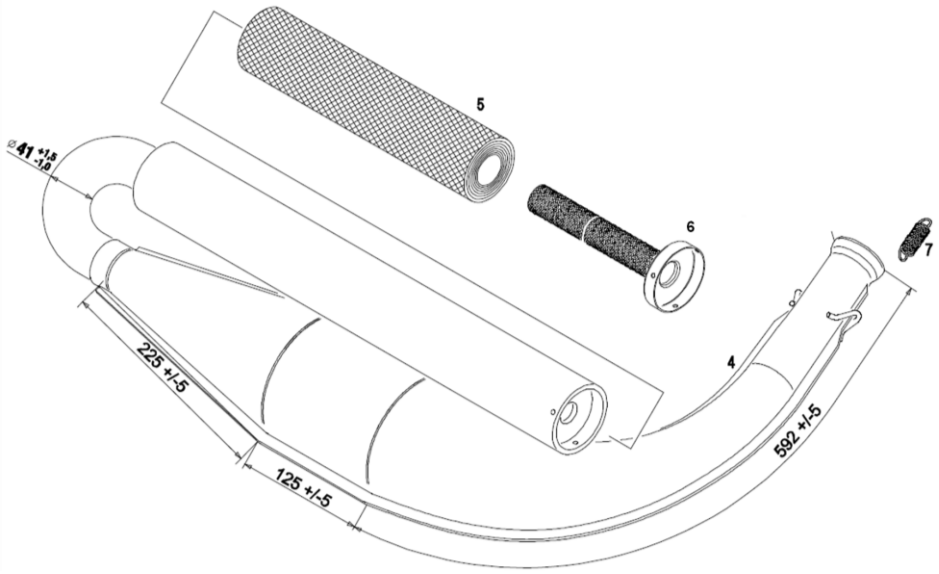
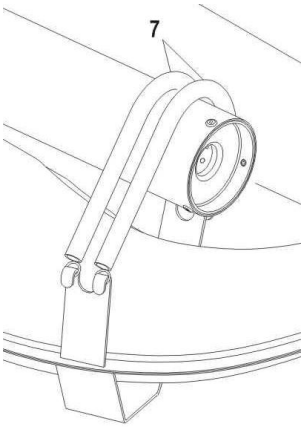
	Combination 1:	*Combination 2:*
Floats (marked with weight):	**5.2gr**	**3.6gr**
Idle Jet (stamped):	**30**	**60**
Idle Jet Emulsion Tube (stamped):	**30**	**60**
Venturi – **34** in casting and stamped:	**8.5 or 12.5**	**8.5 or 12.5**

19. Atomiser	**19.1**	Atomiser: Type 2 only. No modifications allowed.



20. Fuel Pump	**20.1**	**MIKUNI** fuel pump **DF 44-210** part no. **994 482**.
	20.2	The fuel pump must be fitted to the bottom or side of the standard air intake bracket. Only a single length of pulse tube from crankcase connector to fuel pump may be used.
21. Fuel Filter	**21.1**	Only a single length of fuel line from fuel pump to carburettor may be used. It is permitted to use the in-line fuel filter as supplied by Rotax (part no. **274 160** shown below – no modifications permitted) between the fuel tank and fuel pump. An internal fuel tank filter is also permitted.

22. Radiator	**22.1**	Single aluminium radiator, as shown below. Part no. **295 928**. 
	22.2	Radiator must be fitted to the right hand side of the engine with all components as shown above. The use of alternative hose clips and screw fixings is permitted.
	22.3	*Cooling area:* Height: 290mm Width: 138mm Thickness of radiator: 34mm
	22.4	Use of cooling flap is optional. No additional cooling device is allowed.
	22.5	To fit the radiator the bottom hose (part no. **222 746**) needs to be shortened by approximately 57mm.
	22.6	Thermostat Head Cover & Thermostat shown below must be used. The removal of the thermostat from the cylinder head cover is permitted. 

23. Radiator Coolant	**23.1**	The only permitted coolants are water (H_2O) or a mixture of water (H_2O) and aluminium compatible anti-freeze (make free).
24. Exhaust System	**24.1**	Must be Type **B** as shown below and as supplied by BRP-POWERTRAIN, with no modifications other than those detailed below. 
	24.2	There are two versions of the Type **B** exhaust system, the version with the welded on silencer as shown above and the version with the silencer supported by two springs as shown below. Both versions are permitted. 
	24.3	*Exhaust Dimensions:* Diameter of hole of end cap (6): 21.0mm max. Length of inlet cone: 592 ± 5mm (measured on the outside) Length of cylindrical part of exhaust pipe: 125mm ± 5mm Length of end cone: 225mm ± 5mm Outside diameter of 180º bent tube: 41mm +1.5mm, -1.0mm (measured at beginning and end of bend)
	24.4	Just one piece of silencer absorption material (isolating mat) is permitted to be used. Replacement of the silencer absorption material (isolating mat) is permitted.

	24.5	The use of threaded fasteners in place of the rivets for securing the silencer end cap is permitted.
	24.6	Standard engine/pipe coupling must be used. One original gasket must be used between the exhaust socket (flange) and the cylinder.
	24.7	It is permitted to paint the exhaust system with black paint, no other coating or plating is permitted.
	24.8	It is permitted to make minor repairs by welding or brazing to the exhaust system providing there are no alterations to the original dimensions.

END

Appendix 1

HOMOLOGATION OF KART ENGINE – SUPPLEMENT

Category	**ROTAX JUNIOR MAX & MINIMAX**
Manufacturer	Bombardier Rotax
Model	FR125
UK Agent	JAG Engineering
Valid From	1st June 2011
Number of pages	4

This Homologation Form reproduces descriptions, illustrations and dimensions of the engine at the moment of the MSA Homologation. This document may be supplemented by official amendment. This document must be read in conjunction with the appropriate Class Regulations.

Photo of drive side of engine

Photo of opposite side of engine

SIGNATURE AND STAMP OF THE MSA	
MSA	Date: **1st June 2011** Signed by: **John Ryan** Position: **MSA Technical Executive**

Any reproduction must be authorised by the MSA

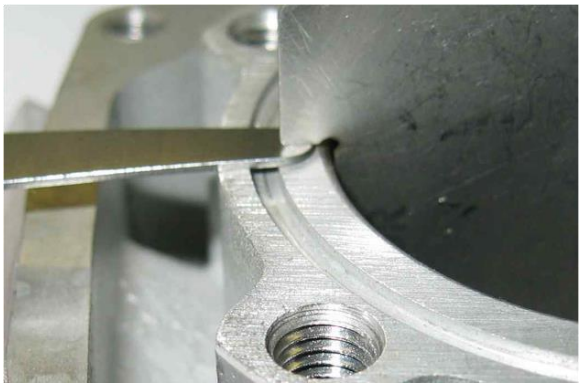
Photo of rear of engine

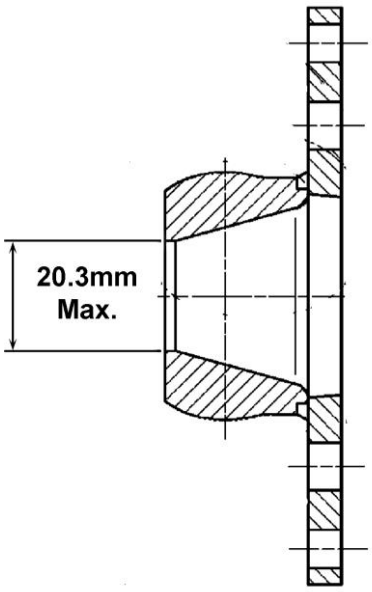
Photo of front of engine

Photo of top of engine

TECHNICAL INFORMATION

All parts of the preceding **Rotax FR125 Senior Max** fiche are applicable and remain unchanged with the exception of the following points:

1. Squish Gap	**1.1**	Minimum: 1.20mm Average of two measurements. To be measured on both sides across the piston pin axis using 2.0mm solder.
2. Combustion Chamber Insert	**2.5**	Volume of combustion chamber mounted on engine, with piston at TDC: 11.4cc (to the top of the spark plug thread) minimum using a Class A or digital burette.
5. Cylinder	**5.4**	Cylinder without exhaust power valve. Cylinder must be marked with "**ROTAX**" and part number **223 994**: 
6. Exhaust Port Timing	**6.1**	The exhaust port timing must be checked using the Rotax template (part no. **277 397**). Insert the template into the cylinder, so that it is touching the cylinder wall and so 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 feeler gauge between the top of the cylinder and the template. It must not be possible to fit a feeler gauge of **1.10mm** between the top of the cylinder and the template.  **NB:** Take care to use the correct Junior template.

7. Exhaust Valve	**7.1**	*Not applicable*
	7.2	*Not applicable*
	7.3	*Not applicable*
	7.4	*Not applicable*
	7.5	*Not applicable*
	7.6	*Not applicable*
24. Exhaust System	**24.1**	*Unchanged.*
	24.2	*Unchanged.*
	24.3	*Unchanged.*
	24.4	*Unchanged.*
	24.5	*Unchanged.*
	24.6	*Unchanged.*
	24.7	*Unchanged.*
	24.8	*Unchanged.*
	24.9	**MiniMax Engines Only:** Exhaust flange restrictor must be fitted. 20.3mm maximum round bore, all exhaust gases must pass through this restrictor. One original gasket must be used between the exhaust socket (flange) and the cylinder. 

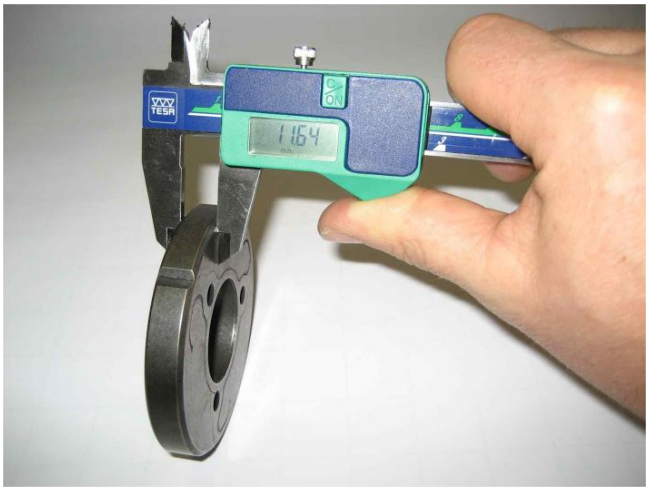
END

Appendix 2

HOMOLOGATION OF KART ENGINE
ADDITIONAL INFORMATION

Category	**ALL ROTAX CLASSES**
Manufacturer	Bombardier Rotax
Model	FR125
UK Agent	JAG Engineering
Valid From	1st June 2011
Number of pages	2

MEASUREMENT GUIDELINES FOR ROTAX STEEL CLUTCH

Clutch Measurements	**1**	**Height of Clutch –** Minimum: 11.45mm 
	2	**Thickness of Clutch Shoe –** No measurement may be below: 24.10mm Measurement has to be taken at the three open ends of the clutch shoes, 5mm – 10mm from the machined groove (all clutch shoes must be completely closed at measurement – no gap). 

	3	**Outer Diameter of Clutch Drum –** Minimum diameter: 89.50mm Diameter has to be measured with a sliding caliper just beside the radius from the shoulder (no at the open end of the clutch drum). 
	4	**Inner Diameter of Clutch Drum –** Maximum diameter: 84.90mm The inner diameter has to be measured with a sliding caliper. The measurement has to be taken in the centre of the clutch drum (on the contact area of the clutch drum). 
	5	**Height of Sprocket with Clutch Drum Assembly –** Minimum: 33.90mm 

END

Appendix 3

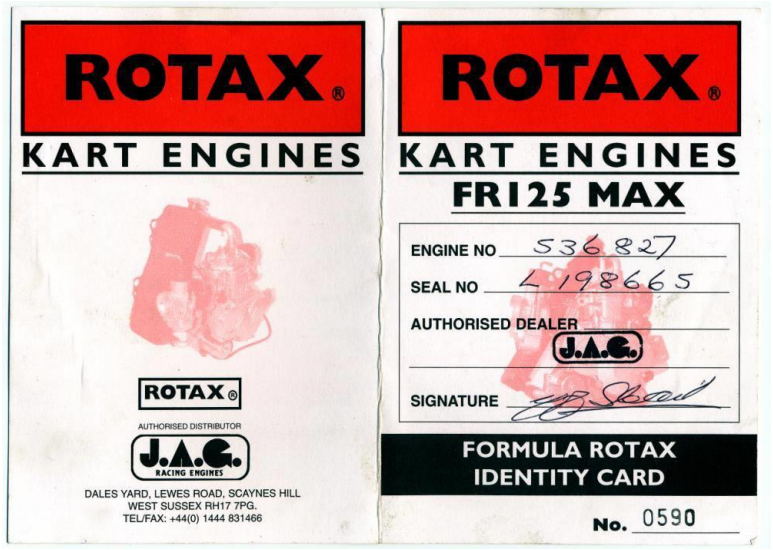
HOMOLOGATION OF KART ENGINE
ADDITIONAL INFORMATION

Category	**ROTAX SENIOR MAX**
Manufacturer	Bombardier Rotax
Model	FR125
UK Agent	JAG Engineering
Valid From	1st June 2011
Number of pages	2

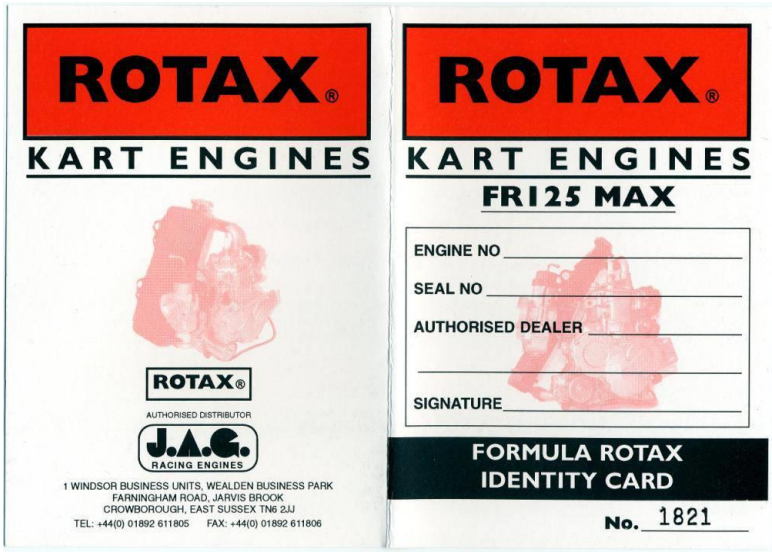
OFFICIAL ID CARDS

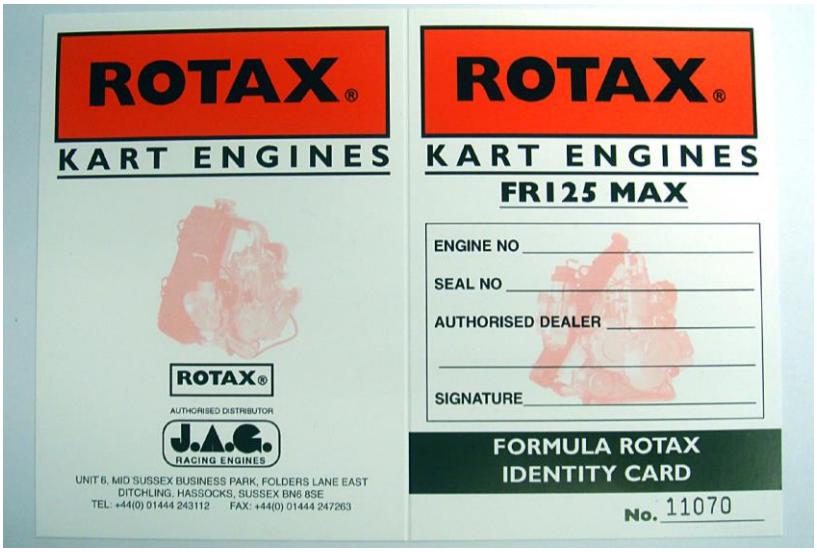
ID Cards	**1**	**Type A**
	2	**Type B**

Type A

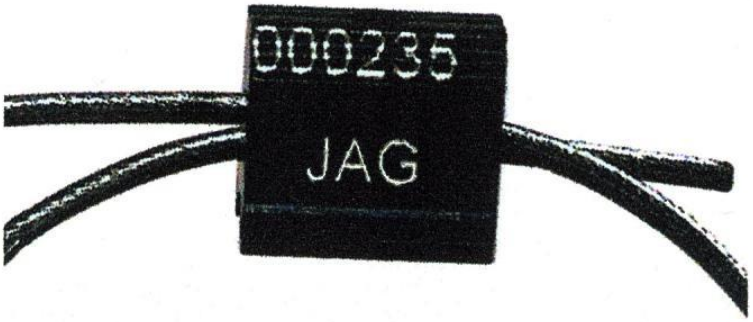
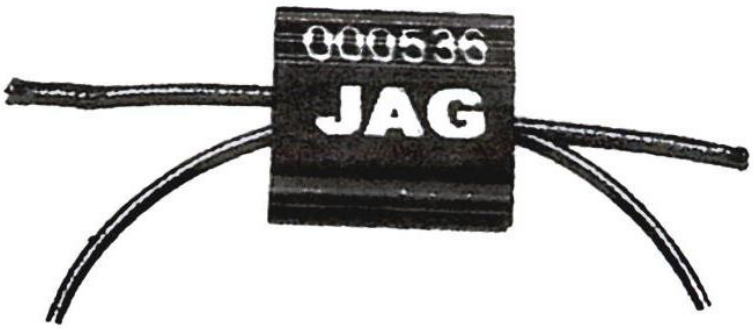


Type B



	3	**Type C** 

OFFICIAL SEALS

Seals	**1**	**Type 2** 
	2	**Type 3** 
	3	Note: Earlier Type 1 metal clam seal is not acceptable

END

Appendix 4

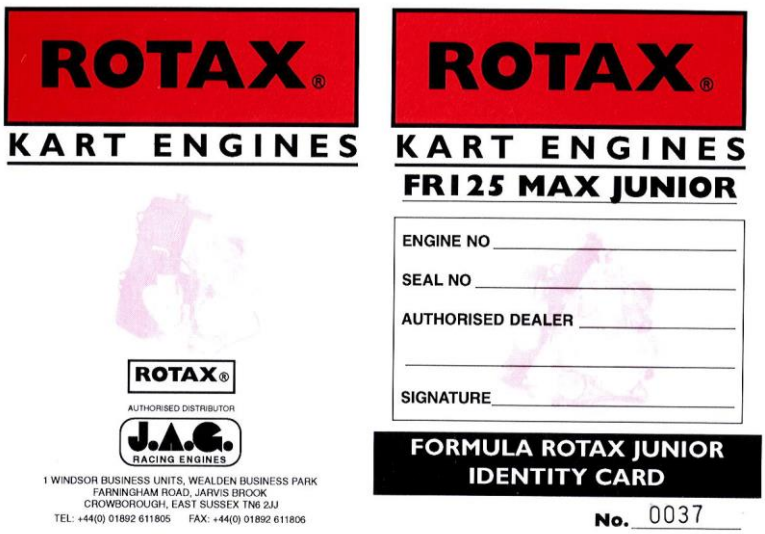
HOMOLOGATION OF KART ENGINE
ADDITIONAL INFORMATION

Category	**ROTAX JUNIOR MAX & MINIMAX**
Manufacturer	Bombardier Rotax
Model	FR125
UK Agent	JAG Engineering
Valid From	1st June 2011
Number of pages	2

OFFICIAL ID CARDS

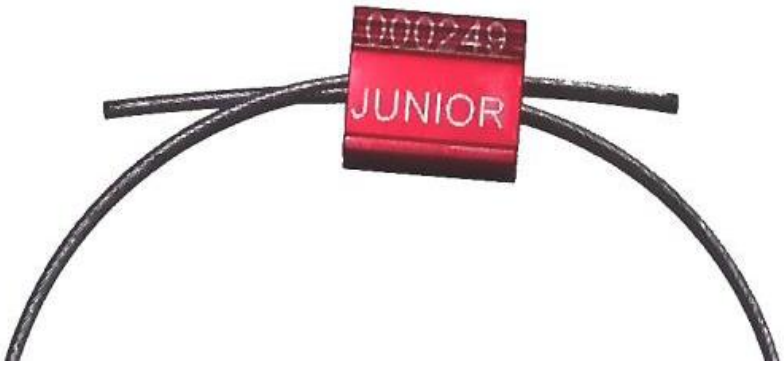
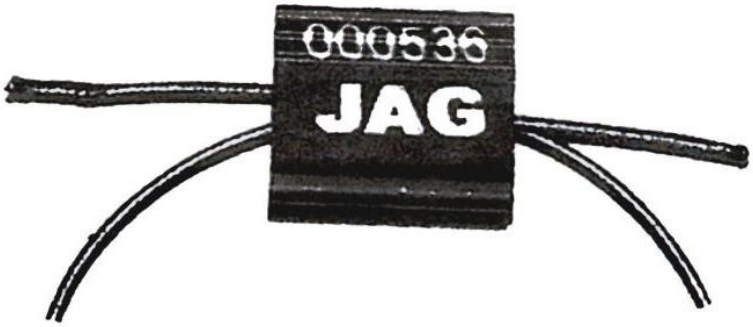
ID Card	**1**	**Type 1**
	2	**Type 2**

Type 1



Type 2

OFFICIAL SEALS

Seal	**1**	**Type 1** 
	2	**Type 2** 

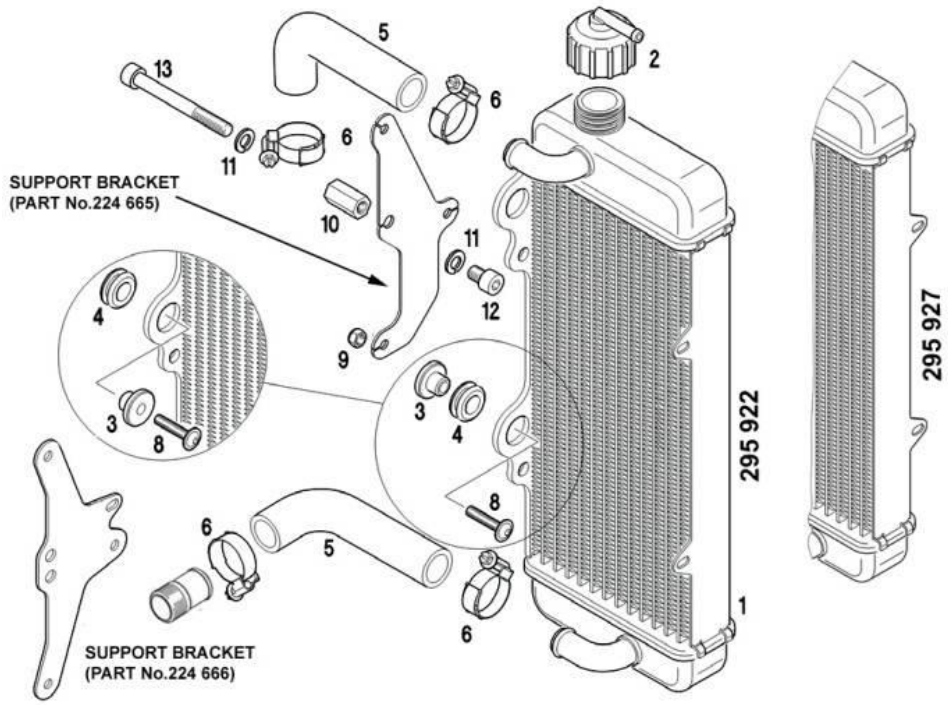
END

Appendix 5

HOMOLOGATION OF KART ENGINE – VARIANT

Category	**ALL ROTAX CLASSES**
Manufacturer	Bombardier Rotax
Model	FR125
UK Agent	JAG Engineering
Valid From	1st June 2011
Number of pages	2

ALTERNATIVE RADIATOR

22. Radiator	**22.1**	Single aluminium radiator, as shown below. Part no. **295 922** or **295 927**. 
	22.2	Radiator must be fitted to the right hand side of the engine with all components as shown above. The use of alternative hose clips and screw fixings is permitted. There are two permitted methods of mounting the radiator to the retaining plate as shown. There are two different variations of retaining plate as shown (part no. **224 666** and **224 665**). Both radiators **295 922** and **295 927** may be used with either retaining plate.
	22.3	*Cooling area:* Height: 290mm Width: 133mm Thickness of radiator: 32mm

	22.4	No additional cooling device is allowed.
	22.5	*Not applicable.*
	22.6	*Unchanged.*

END

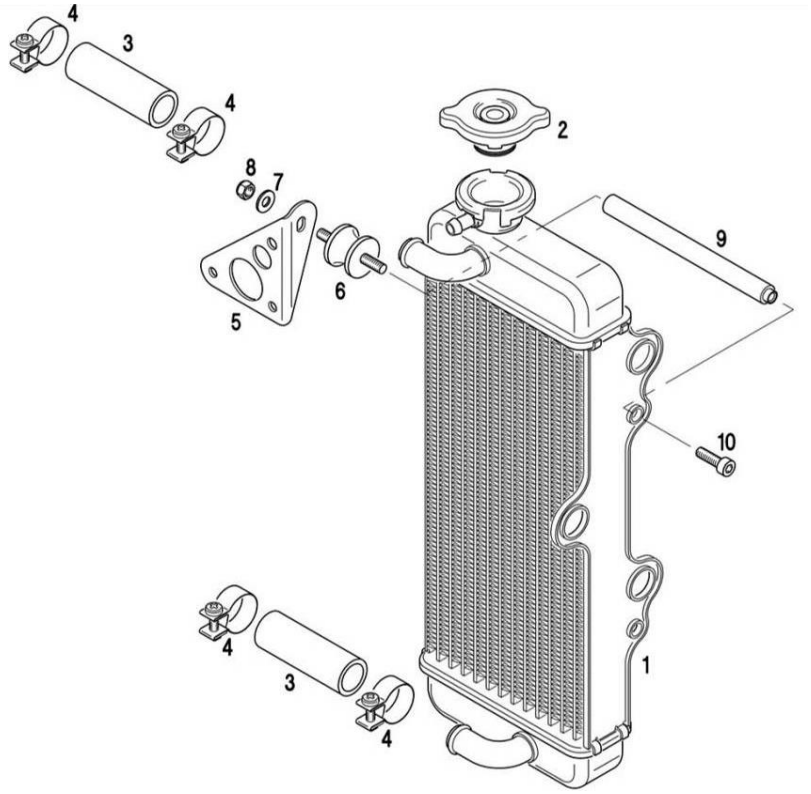
SIGNATURE AND STAMP OF THE MSA	
	Date: **1st June 2011** Signed by: **John Ryan** Position: **MSA Technical Executive**

Appendix 6

HOMOLOGATION OF KART ENGINE – VARIANT

Category	**ALL ROTAX CLASSES**
Manufacturer	Bombardier Rotax
Model	FR125
UK Agent	JAG Engineering
Valid From	1st June 2011
Number of pages	2

ALTERNATIVE RADIATOR

22. Radiator	**22.1**	Single aluminium radiator, as shown below. Part no. **295 920**. This radiator cannot be used with thermostat head cover. 
	22.2	Radiator must be fitted to the right hand side of the engine with all components as shown above. The use of alternative hose clips and screw fixings is permitted. It is permitted to drill a hole in the radiator cap to allow it to be secured by a locking wire or cable tie.
	22.3	*Cooling area:* Height: 290mm Width: 133mm Thickness of radiator: 32mm

	22.4	No additional cooling device is allowed.
	22.5	*Not applicable.*
	22.6	Radiator (part no. **295 920**) cannot be used with thermostat head cover and thermostat.

END

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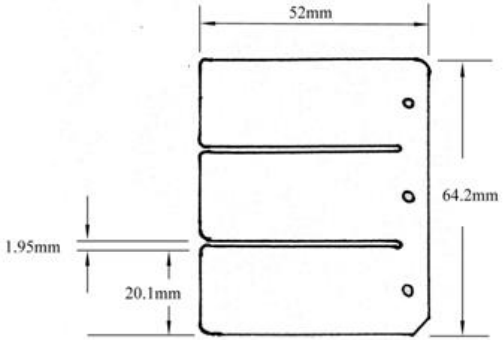
Appendix 7

HOMOLOGATION OF KART ENGINE – VARIANT

Category	**ALL ROTAX CLASSES**
Manufacturer	Bombardier Rotax
Model	FR125
UK Agent	JAG Engineering
Valid From	1st June 2011
Number of pages	1

ALTERNATIVE REED VALVE ASSEMBLY

8. Inlet System	**8.1**	*Unchanged.*
	8.2	The reed valve assembly (part no. **224 387**) consists of two petal stops and two reeds consisting of three petals each. The thickness of the reeds is 0.60mm ± 0.08mm.   The reed stops must form an arc, no other shaping is permitted. One original Rotax reed block gasket must be used between the reed block and cylinder.
	8.3	*Unchanged.*

END

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Appendix 8

HOMOLOGATION OF KART ENGINE – VARIANT

Category	**ROTAX SENIOR MAX**
Manufacturer	Bombardier Rotax
Model	FR125
UK Agent	JAG Engineering
Valid From	1st June 2011
Number of pages	2

ALTERNATIVE EXHAUST POWER VALVE ASSEMBLY

7. Exhaust Valve	**7.1**	*Unchanged.*
	7.2	*Unchanged.*
	7.3	*Unchanged.*
	7.4	Exhaust power valve stud (part no. **441 350** or **941 145**)  Exhaust power valve piston (part no. **253 255**)  Exhaust power valve bellow (part no. **260 728**)  Exhaust power valve bellow spring (part no. **239 043**) 

		Exhaust power valve adjustment screw (part no. **241 220**) 
	7.5	*Unchanged.*
	7.6	*Unchanged.*

END

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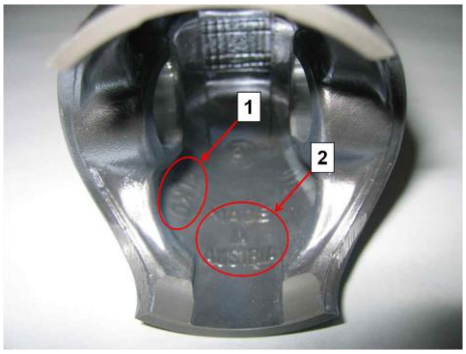
Appendix 9

HOMOLOGATION OF KART ENGINE – VARIANT

Category	**ALL ROTAX CLASSES**
Manufacturer	Bombardier Rotax
Model	FR125
UK Agent	JAG Engineering
Valid From	1st June 2011
Number of pages	1

ALTERNATIVE PISTONS

3. Piston & Rings	**3.1**	Coated or uncoated cast aluminium piston, with one piston ring.  Inside of piston to be marked "**ELKO**" (1) and "**MADE IN AUSTRIA**" (2). 
	3.2	*Unchanged.*
	3.3	*Unchanged.*

END

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Appendix 10

HOMOLOGATION OF KART ENGINE – VARIANT

Category	**ROTAX SENIOR MAX**
Manufacturer	Bombardier Rotax
Model	FR125
UK Agent	JAG Engineering
Valid From	1st June 2011
Number of pages	1

ALTERNATIVE CYLINDER

5. Cylinder	**5.1**	*Unchanged.*
	5.2	*Unchanged.*
	5.3	*Unchanged.*
	5.4	Cylinder with exhaust power valve. Cylinder must be marked with **"ROTAX"** and part no. **223 996**. 
	5.5	*Unchanged.*
	5.6	*Unchanged.*
	5.7	*Unchanged.*
	5.8	*Unchanged.*
	5.9	*Unchanged.*

END

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MSA	Date: **1st June 2011** Signed by: **John Ryan** Position: **MSA Technical Executive**

Appendix 11

HOMOLOGATION OF KART ENGINE – VARIANT

Category	**ROTAX SENIOR MAX**
Manufacturer	Bombardier Rotax
Model	FR125
UK Agent	JAG Engineering
Valid From	1st June 2011
Number of pages	2

ALTERNATIVE CYLINDER

5. Cylinder	**5.1**	*Unchanged.*
	5.2	*Unchanged.*
	5.3	*Unchanged.*
	5.4	Cylinder with exhaust power valve. Cylinder must be marked with **"ROTAX"** and part no. **223 997**. 
	5.5	*Unchanged.*
	5.6	*Unchanged.*
	5.7	*Unchanged.*
	5.8	*Unchanged.*
	5.9	*Unchanged.*

6. Exhaust Port Timing	**6.1**	Exhaust port timing measured using 0.4 x 3mm feeler gauge. Exhaust 27.8mm minimum before TDC min. Exhaust port chord measurement 38.7 mm max. To check exhaust port timing: Set dial gauge to zero at TDC. Rotate crank until exhaust port is open. Hold feeler gauge against roof of exhaust port at highest point. Rotate crank until piston touches gauge and record port height before TDC. All measurements are minimum taken at maximum possible point.

END

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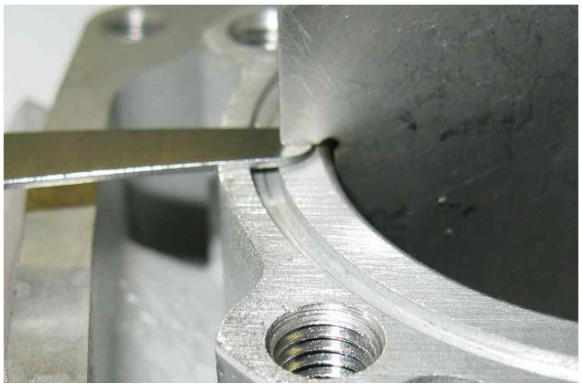
Appendix 12

HOMOLOGATION OF KART ENGINE – VARIANT

Category	**ROTAX JUNIOR MAX & MINIMAX**
Manufacturer	Bombardier Rotax
Model	FR125
UK Agent	JAG Engineering
Valid From	1st June 2011
2	2

ALTERNATIVE CYLINDER

5. Cylinder	**5.1**	*Unchanged.*
	5.2	*Unchanged.*
	5.3	*Unchanged.*
	5.4	Cylinder without exhaust power valve. Cylinder must be marked with **"ROTAX"** and part no. **223 998**. 
	5.5	*Unchanged.*
	5.6	*Unchanged.*
	5.7	*Unchanged.*
	5.8	*Unchanged.*
	5.9	*Unchanged.*
6. Exhaust Port Timing	**6.1**	The exhaust port timing must be checked using the Rotax template (part no. **277 398**). Insert the template into the cylinder, so that it is touching the cylinder wall and so 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 feeler gauge between the top of the cylinder and the template.

		It must not be possible to fit a feeler gauge of **0.9mm** between the top of the cylinder and the template.  **NB:** Take care to use the correct Junior template.

END

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MSA	Date: **1st June 2011** Signed by: **John Ryan** Position: **MSA Technical Executive**

Appendix 13

HOMOLOGATION OF KART ENGINE – VARIANT

Category	**ROTAX JUNIOR MAX & MINIMAX**
Manufacturer	Bombardier Rotax
Model	FR125
UK Agent	JAG Engineering
Valid From	1st June 2011
Number of pages	2

ALTERNATIVE CYLINDER

5. Cylinder	**5.1**	*Unchanged.*
	5.2	*Unchanged.*
	5.3	*Unchanged.*
	5.4	Cylinder without exhaust power valve. Cylinder must be marked with **"ROTAX"** and part no. **223 999**. 
	5.5	*Unchanged.*
	5.6	*Unchanged.*
	5.7	*Unchanged.*
	5.8	*Unchanged.*
	5.9	*Unchanged.*

6. Exhaust Port Timing	**6.1**	Exhaust port timing measured using 0.4 x 3mm feeler gauge. Exhaust 31.6mm minimum before TDC min. Exhaust port chord measurement 36.5mm max. Front transfer port, a single port in front of cylinder. To check exhaust port timing: Set dial gauge to zero at TDC. Rotate crank until exhaust port is open. Hold feeler gauge against roof of exhaust port at highest point. Rotate crank until piston touches gauge and record port height before TDC. All measurements are minimum taken at maximum possible point.

END

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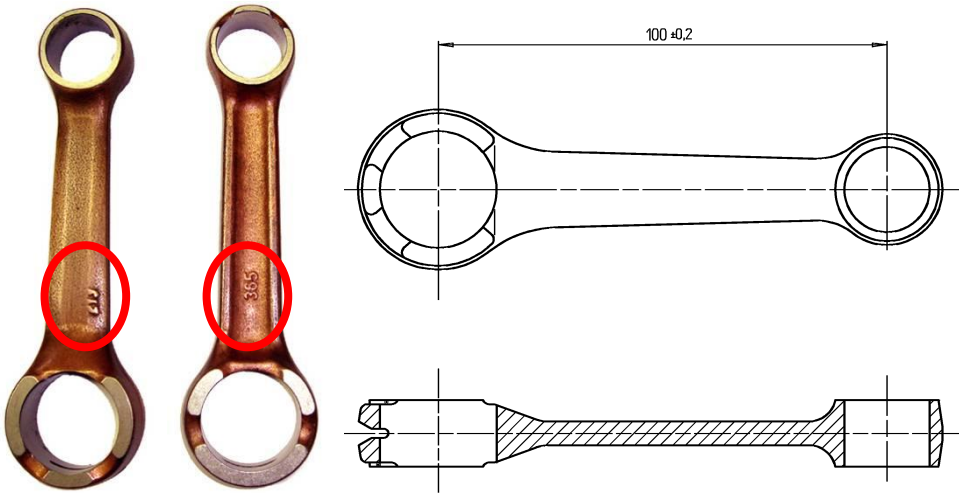
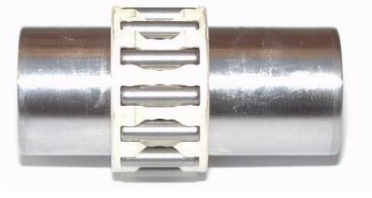
Appendix 14

HOMOLOGATION OF KART ENGINE – VARIANT

Category	**ALL ROTAX CLASSES**
Manufacturer	Bombardier Rotax
Model	FR125
UK Agent	JAG Engineering
Valid From	1st June 2011
Number of pages	2

ALTERNATIVE CRANKSHAFT COMPONENTS

9. Crankshaft	**9.1**	*Unchanged.*
	9.2	Con rod with part number **213** or **365** marked on shaft:  No modification is allowed. Shaft of con rod is not machined (copper plated).
	9.3	Copper plated Big End Thrust Washer. 
	9.4	Big End bearing with 13 captive needle rollers. 

	9.5	Steel water pump drive gear (part no. **634 421**).  Steel water pump drive gear must be used with crankshaft shown below.
	9.6	Crank shaft to be used with steel water pump gear. 
	9.7	Main Bearing part no. **932 583** (SKF plastic cage) or **832 592** (Koyo steel cage). **952 583:**  **832 592:** 

END

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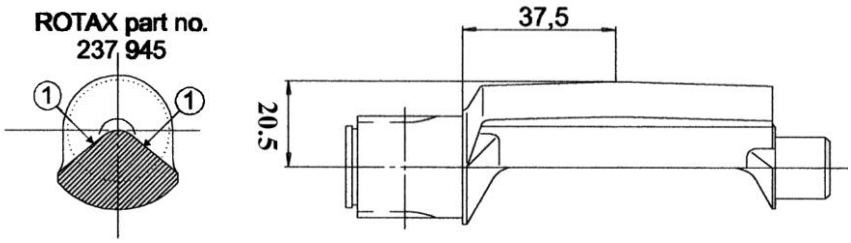
	Date: **1st June 2011** Signed by: **John Ryan** Position: **MSA Technical Executive**

Appendix 15

HOMOLOGATION OF KART ENGINE – VARIANT

Category	**ALL ROTAX CLASSES**
Manufacturer	Bombardier Rotax
Model	FR125
UK Agent	JAG Engineering
Valid From	1st June 2011
Number of pages	1

ALTERNATIVE BALANCE SHAFT

10. Balance Shaft	**10.1**	Balance Shaft (part no. **237 945**) must be installed and operational. 
	10.2	*Unchanged.*
	10.3	*Unchanged.*
	10.4	Measurement from centre of balance shaft to outer diameter of flyweight of balance shaft must not be lower than 20.5mm
	10.5	Minimum weight of dry balance shaft: 355g

END

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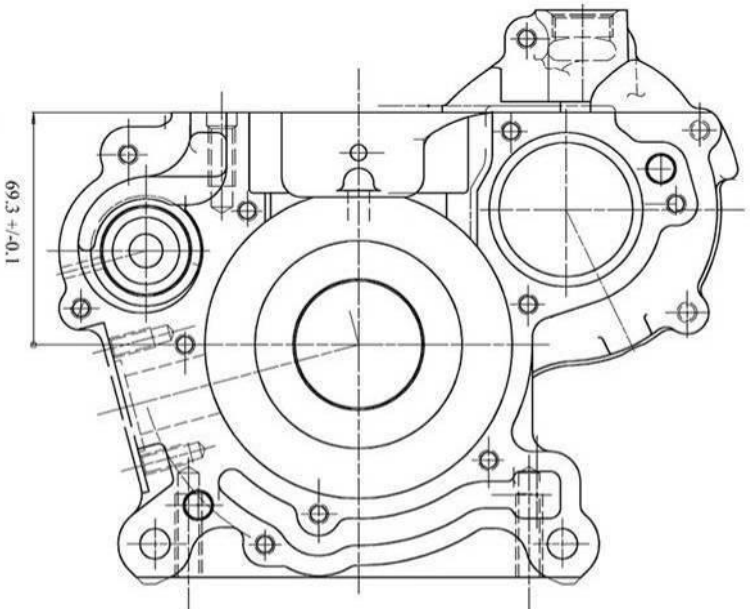
MSA	Date: **1st June 2011** Signed by: **John Ryan** Position: **MSA Technical Executive**

Appendix 16

HOMOLOGATION OF KART ENGINE – VARIANT

Category	**ROTAX SENIOR MAX**
Manufacturer	Bombardier Rotax
Model	FR125
UK Agent	JAG Engineering
Valid From	1st June 2011
Number of pages	1

ALTERNATIVE CRANKCASE

11. Crankcase	**11.1**	Rotax part no. **295 910**, sand-cast crankcase as supplied by manufacturer without any additional grinding, polishing or machining. No modifications are allowed (see drawing below). Minimal fettling is permitted to repair damaged surfaces due to mechanical failure. 
	11.2	*Unchanged.*
	11.3	*Not applicable.*
	11.4	*Unchanged*.

END

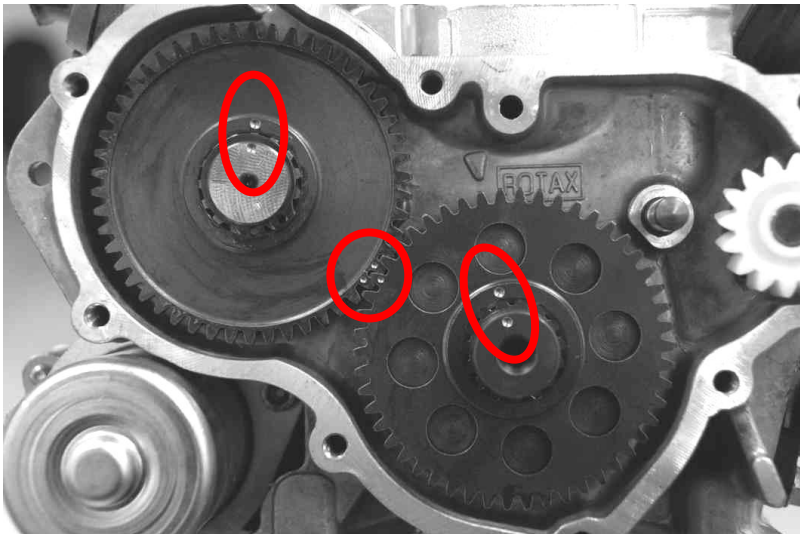
SIGNATURE AND STAMP OF THE MSA	
MSA	Date: **1st June 2011** Signed by: **John Ryan** Position: **MSA Technical Executive**

Appendix 17

HOMOLOGATION OF KART ENGINE – VARIANT

Category	**ALL ROTAX CLASSES**
Manufacturer	Bombardier Rotax
Model	FR125
UK Agent	JAG Engineering
Valid From	1st June 2011
Number of pages	1

ALTERNATIVE BALANCE GEARS

12. Balance Drive	**12.1**	6mm thick steel balance gears (Rotax part no. **234 436**) must be installed and must be aligned as shown below.  9mm and 6mm steel balance gears must not be mixed.

END

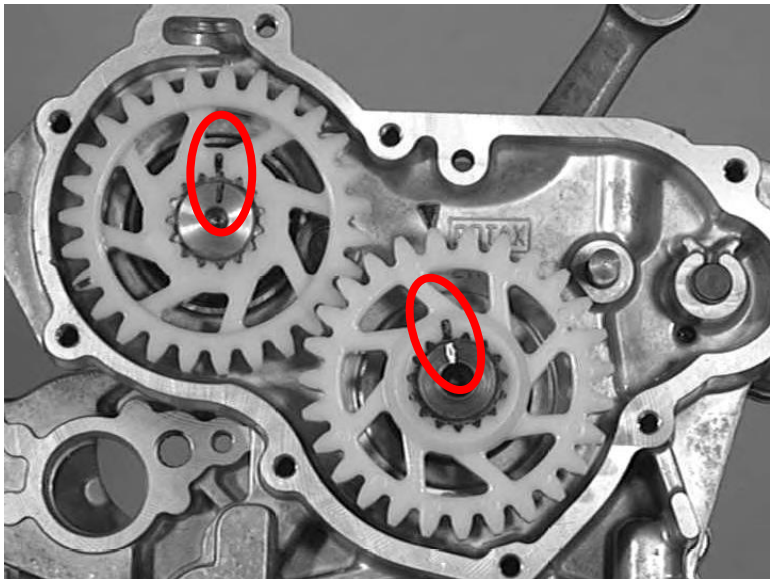
SIGNATURE AND STAMP OF THE MSA	
MSA	Date: **1st June 2011** Signed by: **John Ryan** Position: **MSA Technical Executive**

Appendix 18

HOMOLOGATION OF KART ENGINE – VARIANT

Category	**ALL ROTAX CLASSES**
Manufacturer	Bombardier Rotax
Model	FR125
UK Agent	JAG Engineering
Valid From	1st June 2011
Number of pages	1

ALTERNATIVE BALANCE GEARS

12. Balance Drive	**12.1**	Plastic balance gears (Rotax part no. **234 431**) must be installed and must be aligned as shown below.  Plastic balance gears may not be used with any steel type clutch assembly.

END

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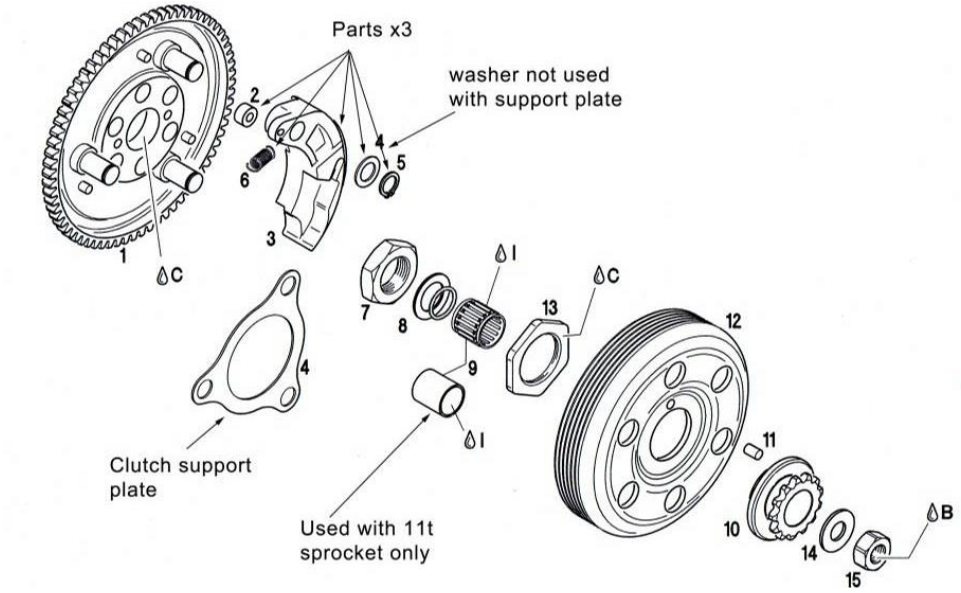
	Date: **1st June 2011** Signed by: **John Ryan** Position: **MSA Technical Executive**

Appendix 19

HOMOLOGATION OF KART ENGINE – VARIANT

Category	**ALL ROTAX CLASSES**
Manufacturer	Bombardier Rotax
Model	FR125
UK Agent	JAG Engineering
Valid From	1st June 2011
Number of pages	2

ALTERNATIVE CLUTCH

16. Clutch	**16.1**	Dry centrifugal clutch, engagement at maximum 4000 rpm. Three segments controlled by three springs. Secured by two hooks on the same plane. 
	16.2	Clutch with support plate: Clutch without support plate:   Support plate part numbers **251 675**, **251 674** (both used with starter gear **634 907/8**) and **251 676** (used with starter gear **634 909**) may all be used.

	16.3	*Spring dimensions:* Closed length: 13mm No. of coils: 7.5 Wire diameter: 2.0mm
	16.4	*Unchanged.*

END

SIGNATURE AND STAMP OF THE MSA	
	Date: **1st June 2011** Signed by: **John Ryan** Position: **MSA Technical Executive**

MOTOR SPORTS ASSOCIATION UNITED KINGDOM MSA

Appendix 20

HOMOLOGATION OF KART ENGINE – VARIANT

Category	**ALL ROTAX CLASSES**
Manufacturer	Bombardier Rotax
Model	FR125
UK Agent	JAG Engineering
Valid From	1st June 2011
Number of pages	1

ALTERNATIVE CLUTCH

16. Clutch	**16.1**	*Unchanged.*
	16.2	Steel clutch element as shown below, either untreated or nitrated (as in picture). 
	16.3	*Unchanged.*
	16.4	*Unchanged.*

END

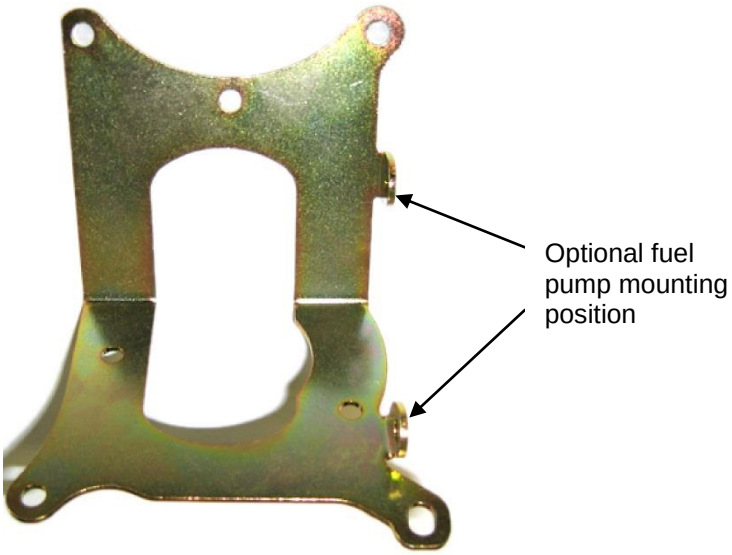
SIGNATURE AND STAMP OF THE MSA	
MSA	Date: **1st June 2011** Signed by: **John Ryan** Position: **MSA Technical Executive**

Appendix 21

HOMOLOGATION OF KART ENGINE – VARIANT

Category	**ALL ROTAX CLASSES**
Manufacturer	Bombardier Rotax
Model	FR125
UK Agent	JAG Engineering
Valid From	1st June 2011
Number of pages	1

ALTERNATIVE INTAKE SILENCER SUPPORT BRACKET

17. Intake Silencer	**17.1**	*Unchanged.*
	17.2	*Unchanged.*
	17.3	The intake silencer must be mounted on the support bracket with optional fuel pump mounting lugs (Rotax part no. **251 720**) in a manner to prevent rotation. 
	17.4	*Unchanged.*

END

SIGNATURE AND STAMP OF THE MSA	
	Date: **1st June 2011** Signed by: **John Ryan** Position: **MSA Technical Executive**

Appendix 22

HOMOLOGATION OF KART ENGINE – VARIANT

Category	**ALL ROTAX CLASSES**
Manufacturer	Bombardier Rotax
Model	FR125
UK Agent	JAG Engineering
Valid From	1st August 2011
Number of pages	1

ALTERNATIVE PISTON RING

3. Piston & Rings	**3.1**	*Unchanged.*
	3.2	*Unchanged.*
	3.3	1mm rectangular piston ring marked with **ROTAX 215 548** 

END

SIGNATURE AND STAMP OF THE MSA	
MSA	Date: **29th July 2011** Signed by: **John Ryan** Position: **MSA Technical Executive**

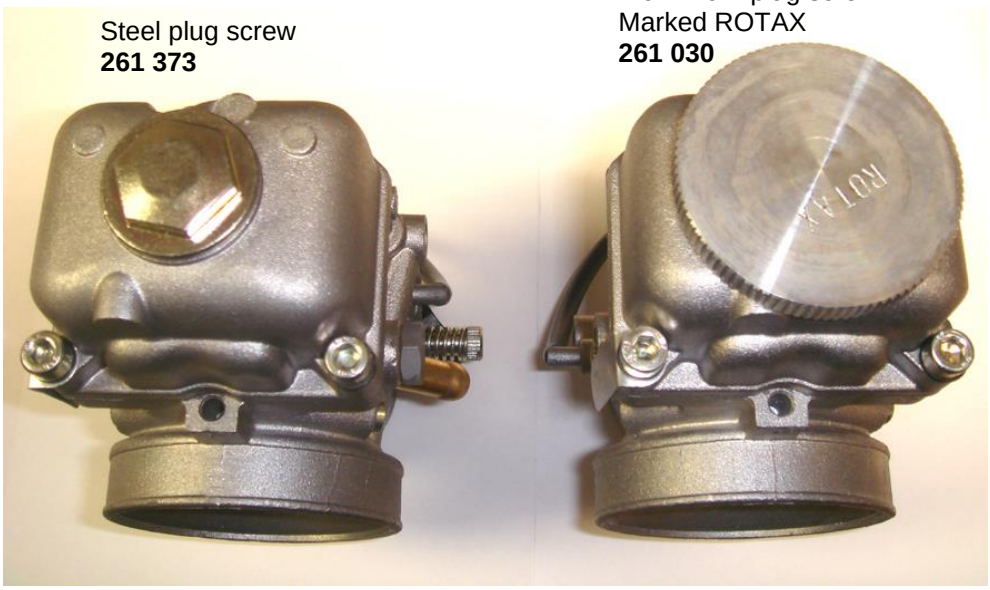
Appendix 23

HOMOLOGATION OF KART ENGINE
ADDITIONAL INFORMATION

Category	**ALL ROTAX CLASSES**
Manufacturer	Bombardier Rotax
Model	FR125
UK Agent	JAG Engineering
Valid From	12th December 2011
Number of pages	2

FLOAT BOWL PLUG SCREW CLARIFICATION

18. Carburettor	**18.1**	*Unchanged.*
	18.2	*Unchanged.*
	18.3	*Unchanged.*
	18.4	*Unchanged.*
	18.5	*Unchanged.*
	18.6	*Unchanged.*
	18.7	*Unchanged.*
	18.8	*Unchanged.*
	18.9	*Unchanged.*
	18.10	Steel float bowl plug screw (part no. **261 373**) or alternative aluminium plug screw (part no. **261 030**) may be used.



	18.11	*Unchanged.*

END

SIGNATURE AND STAMP OF THE MSA	
	Date: **12th December 2011** Signed by: **John Ryan** Position: **MSA Technical Executive**

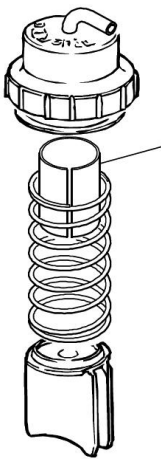
Appendix 24

HOMOLOGATION OF KART ENGINE
ADDITIONAL INFORMATION

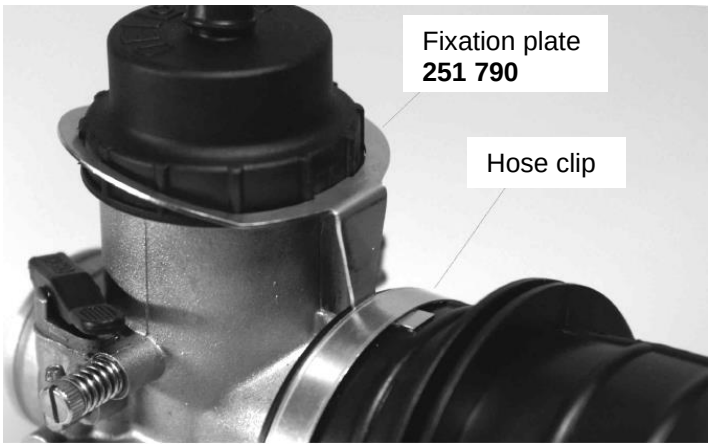
Category	**ROTAX MINIMAX**
Manufacturer	Bombardier Rotax
Model	FR125
UK Agent	JAG Engineering
Valid From	1st January 2012
Number of pages	2

MINIMAX INLET THROTTLE RESTRICTOR

18. Carburettor	**18.1**	*Unchanged.*
	18.2	*Unchanged.*
	18.3	*Unchanged.*
	18.4	*Unchanged.*
	18.5	*Unchanged.*
	18.6	*Unchanged.*
	18.7	*Unchanged.*
	18.8	*Unchanged.*
	18.9	*Unchanged.*
	18.10	*Unchanged.*
	18.11	*Unchanged.*
	18.12	**MiniMax Engines Only:** Inlet throttle restrictor must be in place at all times. The restrictor must be as supplied by J.A.G. It must be fitted to the carburettor cap, as shown below, to limit the opening of the throttle.



Restrictor fitted to carburettor cap

		The length of the spacer must be 33.5mm +0.2/-0.0mm. The carburettor cap must be completely screwed and tightened on to the carburettor. Only 1 original rubber gasket must be used in the carburettor cap. The fixation plate (Rotax part no. **251 790**) must be fitted and the hose clip securely tightened to prevent the carburettor cap from being unscrewed. 

END

SIGNATURE AND STAMP OF THE MSA	
MSA	Date: **12th December 2011** Signed by: **John Ryan** Position: **MSA Technical Executive**

Appendix 25

HOMOLOGATION OF KART ENGINE – VARIANT

Category	**ALL ROTAX CLASSES**
Manufacturer	Bombardier Rotax
Model	FR125
UK Agent	JAG Engineering
Valid From	1st February 2012
Number of pages	1

ALTERNATIVE FUEL FILTER

21. Fuel Filter	**21.1**	Only a single length of fuel line from fuel pump to carburettor may be used. It is permitted to use the in-line fuel filter as supplied by Rotax (part no. **274 161** shown below – no modifications permitted) between the fuel tank and fuel pump. An internal fuel tank filter is also permitted. 

END

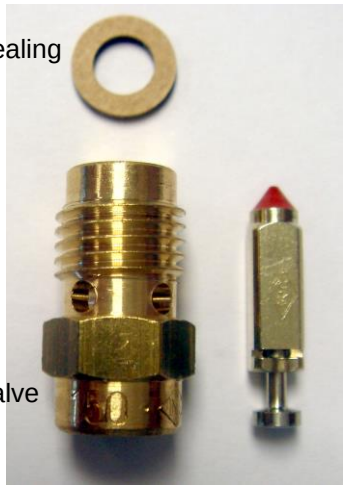
SIGNATURE AND STAMP OF THE MSA	
MSA	Date: **31st January 2012** Signed by: **John Ryan** Position: **MSA Technical Executive**

Appendix 26

HOMOLOGATION OF KART ENGINE – AMENDMENT

Category	**ALL ROTAX CLASSES**
Manufacturer	Bombardier Rotax
Model	FR125
UK Agent	JAG Engineering
Valid From	1st July 2012
Number of pages	2

FLOAT NEEDLE VALVE

18. Carburettor	**18.1**	*Unchanged.*
	18.2	*Unchanged.*
	18.3	*Unchanged.*
	18.4	*Unchanged.*
	18.5	*Unchanged.*
	18.6	*Unchanged.*
	18.7	*Unchanged.*
	18.8	All classes must use the standard 150 float needle valve set as supplied by Rotax. The set consists of the following parts, all as depicted below: Needle valve seat: Must be marked 150 Inlet needle: Must be spring-loaded type with Viton tip and must be marked with the diamond INC logo. No additional marking permitted. Fibre sealing washer Fibre sealing washer  Needle valve seat Inlet needle with INC logo: 

	18.9	*Unchanged.*
	18.10	*Unchanged.*
	18.11	*Unchanged.*
	18.12	*Unchanged.*

END

SIGNATURE AND STAMP OF THE MSA	
	Date: **1st July 2012** Signed by: **John Ryan** Position: **MSA Technical Executive**

Appendix 27

HOMOLOGATION OF KART ENGINE – VARIANT

Category	**ALL ROTAX CLASSES**
Manufacturer	Bombardier Rotax
Model	FR125
UK Agent	JAG Engineering
Valid From	1st January 2013
Number of pages	1

ADDITIONAL EXHAUST STEEL ISOLATION MAT

24. Exhaust System	**24.1**	*Unchanged.*
	24.2	*Unchanged.*
	24.3	*Unchanged.*
	24.4	The addition of a square steel isolating mat (part no. **297 983**) beneath the standard exhaust isolating mat is permitted. Dimensions 165mm x 165mm (+10mm). The use of the clamp (1) supplied in the kit is optional.  The maximum number of isolating mats that may be used is 2 (standard mat + optional steel mat detailed above)
	24.5	*Unchanged.*
	24.6	*Unchanged.*
	24.7	*Unchanged.*
	24.8	*Unchanged.*

END

SIGNATURE AND STAMP OF THE MSA	
MSA	Date: **9th November 2012** Signed by: **John Ryan** Position: **MSA Technical Executive**

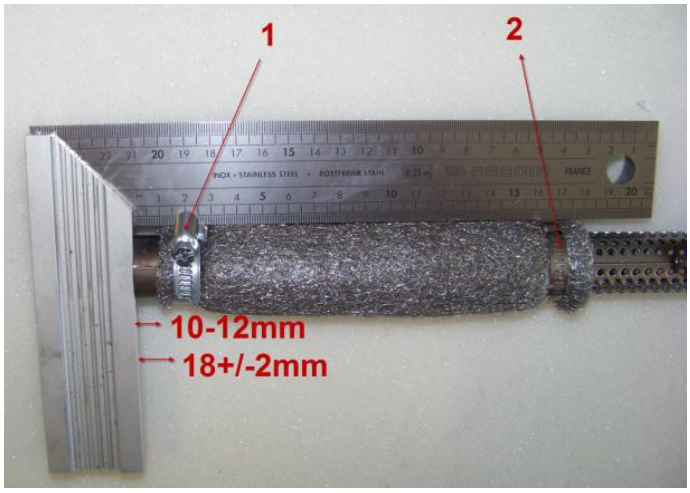
Appendix 28

HOMOLOGATION OF KART ENGINE – ERRATUM

This Appendix fully replaces Appendix 27

Category	**ALL ROTAX CLASSES**
Manufacturer	Bombardier Rotax
Model	FR125
UK Agent	JAG Engineering
Valid From	1st January 2013
Number of pages	2

ADDITIONAL EXHAUST STEEL ISOLATION MAT

24. Exhaust System	**24.1**	*Unchanged.*
	24.2	*Unchanged.*
	24.3	*Unchanged.*
	24.4	The addition of a square steel isolating mat (part no. **297 983**) beneath the standard exhaust isolating mat is permitted. Dimensions 165mm x 165mm (+10mm). Clamp (1) must be fitted at a distance of 18 ± 2mm from the end of the tube as shown. 10-12mm is guidance for assembly purposes. Clamp (2) must be fitted at the end area of the steel isolation mat. Clamp (2) may be of the same type as Clamp (1).  The maximum number of isolating mats that may be used is 2 (standard mat + optional steel mat detailed above).
	24.5	*Unchanged.*
	24.6	*Unchanged.*

	24.7	*Unchanged.*
	24.8	*Unchanged.*

END

SIGNATURE AND STAMP OF THE MSA	
	Date: **19th December 2012** Signed by: **John Ryan** Position: **MSA Technical Executive**

MOTOR SPORTS ASSOCIATION UNITED KINGDOM MSA

Appendix 29

HOMOLOGATION OF KART ENGINE – AMENDMENT

Category	**ALL ROTAX CLASSES**
Manufacturer	Bombardier Rotax
Model	FR125
UK Agent	JAG Engineering
Valid From	1st January 2013
Number of pages	1

INTAKE SILENCER TUBE AND CARBURETTOR SOCKET

17. Intake Silencer	**17.1**	*Unchanged.*
	17.2	*Unchanged.*
	17.3	*Unchanged.*
	17.4	*Unchanged.*
	17.5	Intake silencer tube and airbox-to-carburettor socket must be marked with ROTAX as shown.  

END

SIGNATURE AND STAMP OF THE MSA	
MSA	Date: **19th December 2012** Signed by: **John Ryan** Position: **MSA Technical Executive**

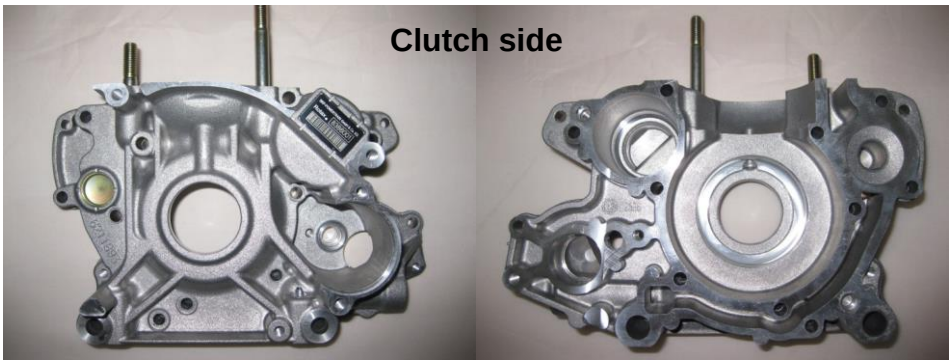
Appendix 30

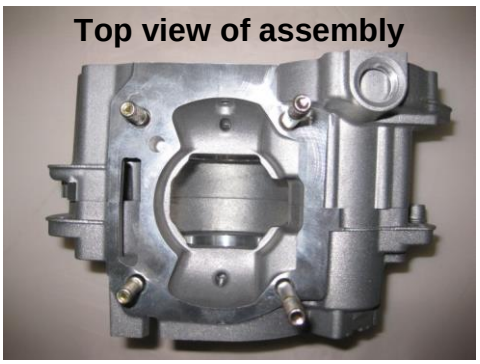
HOMOLOGATION OF KART ENGINE – VARIANT

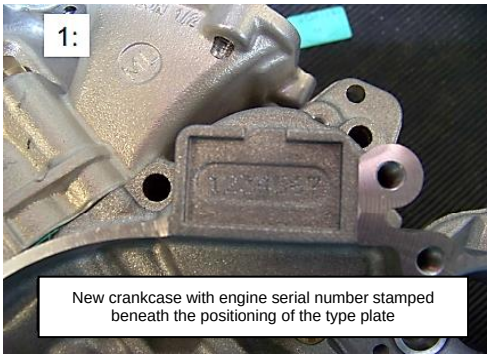
Category	**ALL ROTAX CLASSES**
Manufacturer	Bombardier Rotax
Model	FR125
UK Agent	JAG Engineering
Valid From	1st January 2013
Number of pages	2

NEW PRODUCTION CRANKCASE

11. Crankcase	**11.1**	Rotax part no. **295 913**, as supplied by manufacturer without any additional grinding, polishing or machining other than specified herein. No modifications are allowed (see images below). Minimal fettling is permitted to repair damaged surfaces due to mechanical failure.





	11.2	*Unchanged.*
	11.3	***Not applicable.***
	11.4	*Unchanged.*
	17.5	New engines supplied with this crankcase will be stamped with the engine serial number (1), using 4mm high numbers. In addition a type plate with the engine serial number (and serial number barcode) will be fixed to the crankcase over the stamping (2).  New crankcase with engine serial number stamped beneath the positioning of the type plate  New crankcase with type plate mounted. Crankcases used as replacement parts on previous engines will be stamped with 4mm high numbers only (1) and no type plate.

END

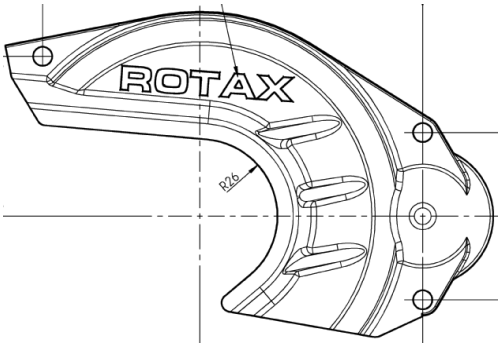
SIGNATURE AND STAMP OF THE MSA	
 	Date: **19th December 2012** Signed by: **John Ryan** Position: **MSA Technical Executive**

Appendix 31

HOMOLOGATION OF KART ENGINE – VARIANT

Category	**ALL ROTAX CLASSES**
Manufacturer	Bombardier Rotax
Model	FR125
UK Agent	JAG Engineering
Valid From	18th January 2013
Number of pages	1

CLUTCH/REDUCTION GEAR COVER

11. Crankcase	**11.1**	*Unchanged.*
	11.2	*Unchanged.*
	11.3	*Unchanged.*
	11.4	*Unchanged.*
	11.5	The plastic clutch/reduction gear cover (Rotax part no. **260 772**) may be fitted to the crankcase. It has been introduced to protect the radiator from chain lube, reduce noise emissions from clutch and chain drive and to improve protection in contact. The cover is compatible with all crankcase types.  

END

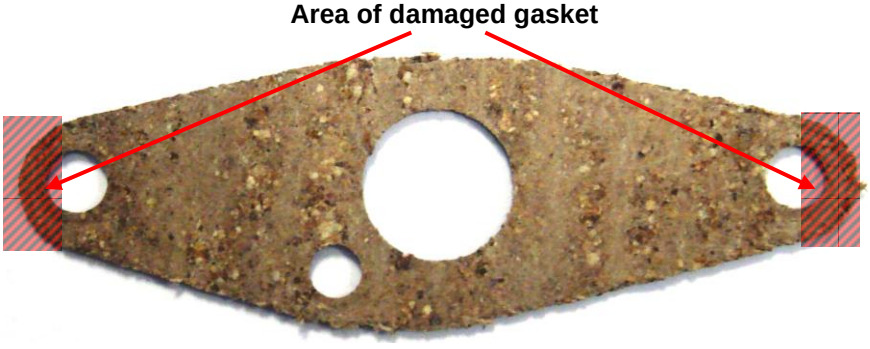
SIGNATURE AND STAMP OF THE MSA	
MSA	Date: **17th January 2013** Signed by: **John Ryan** Position: **MSA Technical Executive**

Appendix 32

HOMOLOGATION OF KART ENGINE – AMENDMENT

Category	**ALL ROTAX CLASSES**
Manufacturer	Bombardier Rotax
Model	FR125
UK Agent	JAG Engineering
Valid From	01 May 2013
Number of pages	1

EXHAUST VALVE GASKET

7. Exhaust Valve	**7.1**	*Unchanged.*
	7.2	*Unchanged.*
	7.3	*Unchanged.*
	7.4	*Unchanged.*
	7.5	*Unchanged.*
	7.6	One original exhaust valve gasket may be fitted between the exhaust valve housing and cylinder. The fitting of more than one exhaust valve gasket is not permitted. The exhaust valve gasket may become damaged or broken as shown below. Parts of the gasket may also be missing in the areas shown. Damaged, broken and missing gasket is permissible in the areas shown. **Area of damaged gasket** 

END

SIGNATURE AND STAMP OF THE MSA	
MSA	Date: **01 May 2013** Signed by: **John Ryan** Position: **MSA Technical Executive**

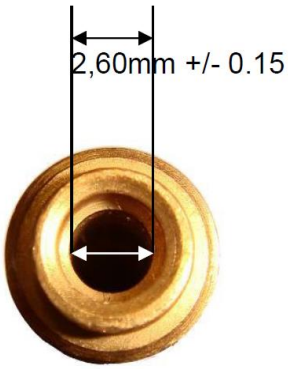
Appendix 33

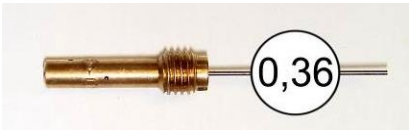
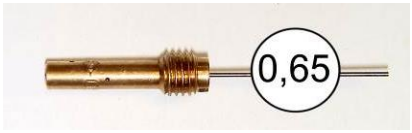
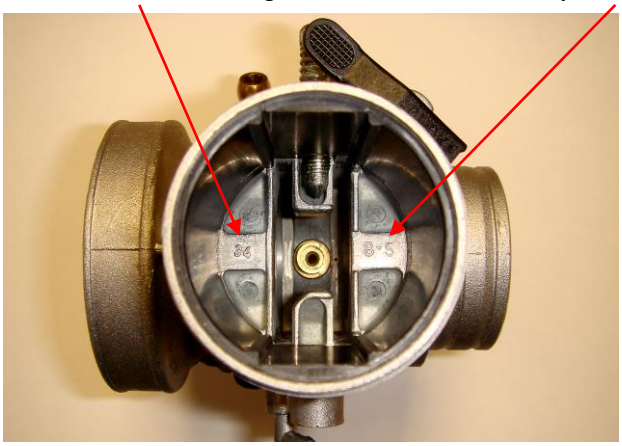
HOMOLOGATION OF KART ENGINE
ADDITIONAL INFORMATION

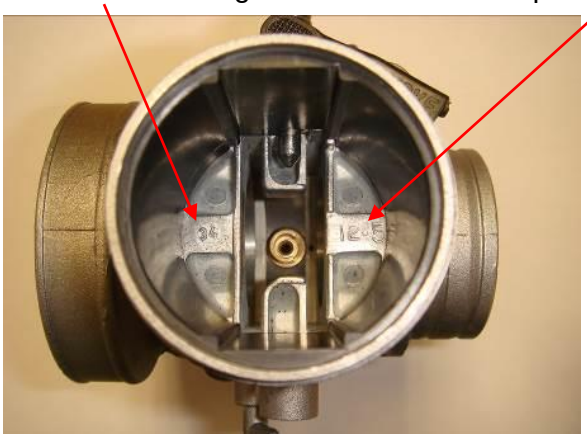
Category	**ALL ROTAX CLASSES**
Manufacturer	Bombardier Rotax
Model	FR125
UK Agent	JAG Engineering
Valid From	16th January 2014
Number of pages	4

DELL'ORTO CARBURETTOR MEASUREMENTS

18. Carburettor	**18.1**	*Unchanged.*
	18.1.1	All jets must be correctly seated and securely fitted at all times.
	18.2	*Unchanged.*
	18.3	*Unchanged.*
	18.4	*Unchanged.*
	18.4.1	Needle jet atomiser, total length: 54.00mm ± 0.3mm 
	18.4.2	Needle jet atomiser, length of bottom section: 11.50mm ± 0.2mm 

	18.4.3	Needle jet atomiser, internal bore diameter: 2.60mm ± 0.15mm  
	18.4.4	Needle jet atomiser, cross-drilled hole diameter: 0.90mm pin gauge must be used and must not enter any of the 16 cross-drilled holes 
	18.6	*Unchanged.*
	18.7	*Unchanged.*
	18.8	*Unchanged.*
	18.9	*Unchanged.*
	18.10	*Unchanged.*
	18.11	*Unchanged.*
	18.11.1	Idle jets: 0.36mm pin gauge must be used and must not enter the bore of idle jet stamped **30**  0.65mm pin gauge must be used and must not enter the bore of idle jet stamped **60** 

	18.11.2	Idle jet emulsion tube: 0.36mm pin gauge must be used and must not enter bore of emulsion tube stamped **30**  0.65mm pin gauge must be used and must not enter bore of emulsion tube stamped **60**  0.65mm pin gauge must be used and must not enter any of the 4 cross-drilled holes on idle jet emulsion tubes stamped **30** or **60** 
	18.11.3	Venturi insert 8.5: Must show **34** in casting Must be stamped **8.5**  Angular bore: 0.60mm pin gauge must be used and must not fit into angular bore  Vertical bore: 0.90mm pin gauge must be used and must not fit into vertical bore 

	18.11.4	Venturi insert 12.5: Must show **34** in casting Must be stamped **12.5**  Angular bore: 0.60mm pin gauge must be used and must not fit into angular bore  Vertical bore: 1.30mm pin gauge must be used and must not fit into vertical bore 

END

SIGNATURE AND STAMP OF THE MSA	
MSA	Date: **11 February 2014** Signed by: **Joe Hickerton** Position: **MSA Technical Administrator**

Appendix 34

HOMOLOGATION OF KART ENGINE – ERRATUM

This Appendix fully replaces the relevant section(s) of the main fiche

Category	**ALL ROTAX CLASSES**
Manufacturer	Bombardier Rotax
Model	FR125
UK Agent	JAG Engineering
Valid From	06 February 2014
Number of pages	1

CLUTCH DIMENSIONS

24. Clutch	**16.1**	*Unchanged.*
	16.2	*Unchanged.*
	16.3	*Clutch dimensions:* Height: 11.45mm minimum Thickness: 24.10mm minimum *Clutch Drum dimensions:* Outer Diameter: 89.50mm minimum Inner Diameter: 84.90mm maximum Height of sprocket with clutch drum assembly: 33.90mm minimum
	16.4	*Unchanged.*

END

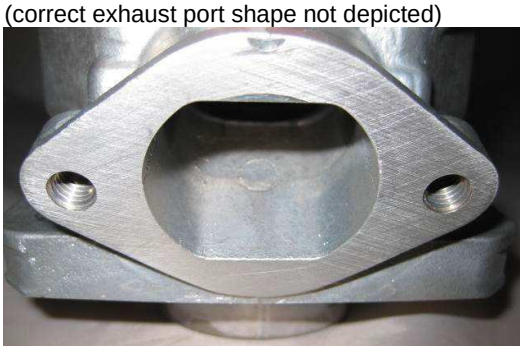
SIGNATURE AND STAMP OF THE MSA	
MSA	Date: **06 February 2014** Signed by: **Joe Hickerton** Position: **MSA Technical Administrator**

Appendix 35

HOMOLOGATION OF KART ENGINE – VARIANT

Category	**ALL ROTAX CLASSES**
Manufacturer	Bombardier Rotax
Model	FR125
UK Agent	JAG Engineering
Valid From	21st January 2015
Number of pages	1

ALTERNATIVE MACHINING FINISH ON EXHAUST SOCKET

5. Cylinder	**5.1**	*Unchanged.*
	5.2	*Unchanged.*
	5.3	*Unchanged.*
	5.4	*Unchanged.*
	5.5	*Unchanged.*
	5.6	*Unchanged.*
	5.7	*Unchanged.*
	5.8	The sealing flange for the exhaust socket is machined completely flat. The surface finish will be either machined finish or ground finish as shown below. Machined finish: (Junior cylinder sealing flange shown)  Ground finish: (correct exhaust port shape not depicted) 
	5.9	*Unchanged.*

END

SIGNATURE AND STAMP OF THE MSA	
MSA	Date: **21 January 2015** Signed by: **Joe Hickerton** Position: **MSA Technical Administrator**

Appendix 36

HOMOLOGATION OF KART ENGINE – VARIANT

Category	**ALL ROTAX CLASSES**
Manufacturer	Bombardier Rotax
Model	FR125
UK Agent	JAG Engineering
Valid From	01 January 2016
Number of pages	1

ALTERNATIVE CRANKCASE COLOUR

11. Crankcase	**11.1**	Black coloured variant – as exampled below – of the newer-style crankcase as detailed in Appendix 30 may be used. All other details unchanged. 
	11.2	*Unchanged.*
	11.3	*Unchanged (from Appendix 30).*
	11.4	*Unchanged.*
	11.5	*Unchanged (from Appendix 30).*

END

SIGNATURE AND STAMP OF THE MSA	
MSA	Date: **03 November 2015** Signed by: **Joe Hickerton** Position: **MSA Technical Administrator**

Appendix 37

HOMOLOGATION OF KART ENGINE – VARIANT

Category	**ALL ROTAX CLASSES**
Manufacturer	Bombardier Rotax
Model	FR125
UK Agent	JAG Engineering
Valid From	01 January 2016
Number of pages	1

ALTERNATIVE GEAR COVER & HEAD COLOURS

		Black coloured variant of the gear cover may be used, as shown below: 
		Red coloured variant of the head cover may be used, as shown below: 

END

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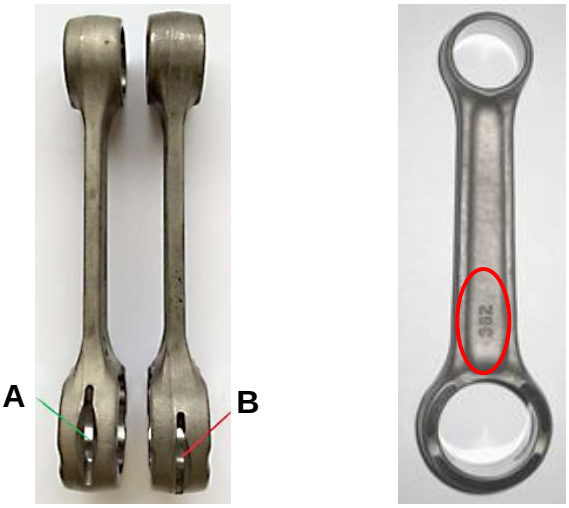
MSA	Date: **03 November 2015** Signed by: **Joe Hickerton** Position: **MSA Technical Administrator**

Appendix 38

HOMOLOGATION OF KART ENGINE – VARIANT

Category	**ALL ROTAX CLASSES**
Manufacturer	Bombardier Rotax
Model	FR125
UK Agent	JAG Engineering
Valid From	01 January 2016
Number of pages	1

ALTERNATIVE CON ROD

9. Crankshaft	**9.1**	*Unchanged.*
	9.2	Con rod with part number **362** (either recessed or embossed) marked on shaft. Lubrication slot may be either position A or B as shown below:  No modification is allowed. Shaft of con rod is not machined.
	9.3	*Unchanged.*
	9.4	*Unchanged.*
	9.5	*Unchanged.*
	9.6	*Unchanged.*
	9.7	*Unchanged.*

END

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MSA	Date: **03 November 2015** Signed by: **Joe Hickerton** Position: **MSA Technical Administrator**

Appendix 39

HOMOLOGATION OF KART ENGINE – VARIANT

Category	**ALL ROTAX CLASSES**
Manufacturer	Bombardier Rotax
Model	FR125
UK Agent	JAG Engineering
Valid From	01 January 2016
Number of pages	1

ALTERNATIVE AIR FILTER ELEMENT

9. Intake Silencer	**17.1**	*Unchanged.*
	17.2	*Unchanged.*
	17.3	*Unchanged.*
	17.4	*Unchanged.*
	17.5	Alternative green and black air filter element as shown below may be used: 

END

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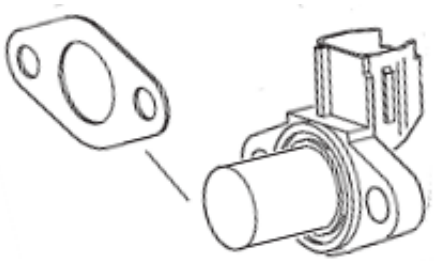
	Date: **03 November 2015** Signed by: **Joe Hickerton** Position: **MSA Technical Administrator**

Appendix 40

HOMOLOGATION OF KART ENGINE – AMENDMENT

Category	**ALL ROTAX CLASSES**
Manufacturer	Bombardier Rotax
Model	FR125
UK Agent	JAG Engineering
Valid From	01 January 2016
Number of pages	1

IGNITION PICK-UP GASKET

13. Ignition Unit	**13.1**	*Unchanged.*
	13.2	*Unchanged.*
	13.3	*Unchanged.*
	13.4	*Unchanged.*
	13.5	*Unchanged.*
	13.6	*Unchanged.*
	13.7	It is permitted to fit a maximum of 2 gaskets (Rotax part no. **431 500**), thickness 0.8mm, between the ignition pick-up and the crankcase. 

END

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MSA	Date: **03 November 2015** Signed by: **Joe Hickerton** Position: **MSA Technical Administrator**

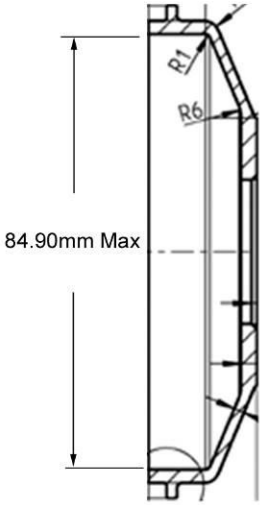
MOTOR SPORTS ASSOCIATION UNITED KINGDOM MSA

Appendix 41

HOMOLOGATION OF KART ENGINE – VARIANT

Category	**ALL ROTAX CLASSES**
Manufacturer	Bombardier Rotax
Model	FR125
UK Agent	JAG Engineering
Valid From	01 January 2016
Number of pages	1

ALTERNATIVE CLUTCH DRUM

16. Clutch	**16.1**	*Unchanged.*
	16.2	*Unchanged.*
	16.3	*Unchanged.*
	16.4	*Unchanged.*
	16.5	Clutch drum design:  Note: Clutch drum measurement procedure (Appendix 2) remains unchanged; there is no measurement for the outer diameter of the exterior reinforcement ring.

END

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MSA	Date: **03 November 2015** Signed by: **Joe Hickerton** Position: **MSA Technical Administrator**

Appendix 42

HOMOLOGATION OF KART ENGINE – AMENDMENT

Category	**ALL ROTAX CLASSES**
Manufacturer	Bombardier Rotax
Model	FR125
UK Agent	JAG Engineering
Valid From	01 January 2016
Number of pages	1

DELETION OF PISTON RING MARKINGS

3. Piston & Rings	**3.1**	*Unchanged.*
	3.2	*Unchanged.*
	3.3	1mm rectangular piston ring (markings no longer relevant). *NB: This also applies to Appendix 22.*

END

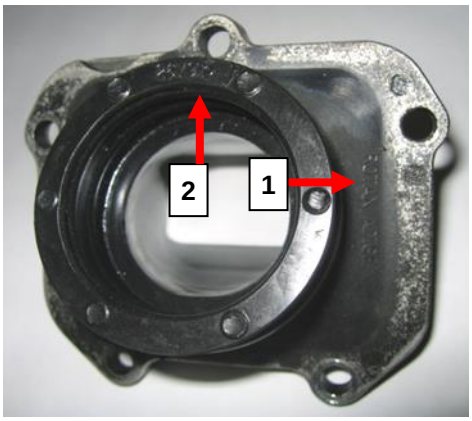
SIGNATURE AND STAMP OF THE MSA	
	Date: **03 November 2015** Signed by: **Joe Hickerton** Position: **MSA Technical Administrator**

Appendix 43

HOMOLOGATION OF KART ENGINE – VARIANT

Category	**ALL ROTAX CLASSES**
Manufacturer	Bombardier Rotax
Model	FR125
UK Agent	JAC Engineering
Valid From	01 January 2016
Number of pages	1

ALTERNATIVE INLET MANIFOLD

8. Inlet System	**8.1**	Inlet manifold must be marked with "**ROTAX**" (1) and the ID code **267 916** (2)  Some factory flash removal may be present in the area 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 3mm in width. No additional grinding or machining is permitted.
	8.2	*Unchanged.*
	8.3	*Unchanged.*

END

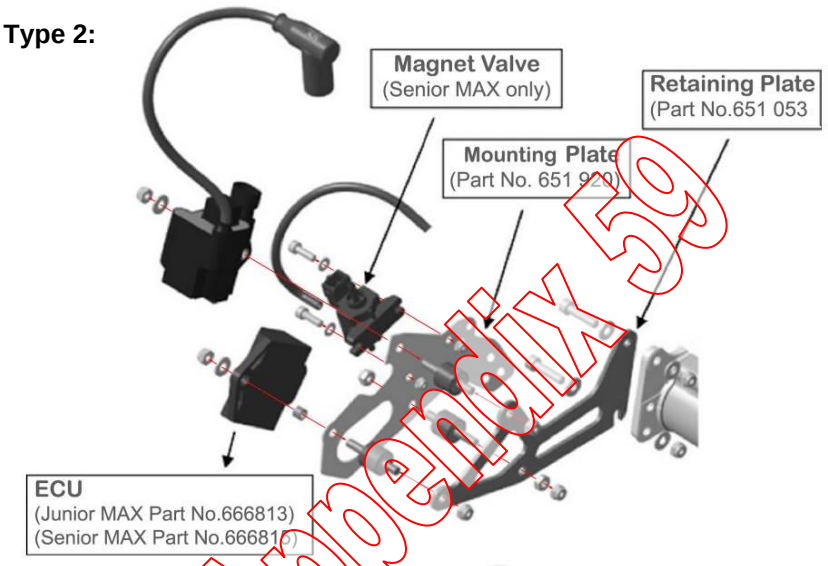
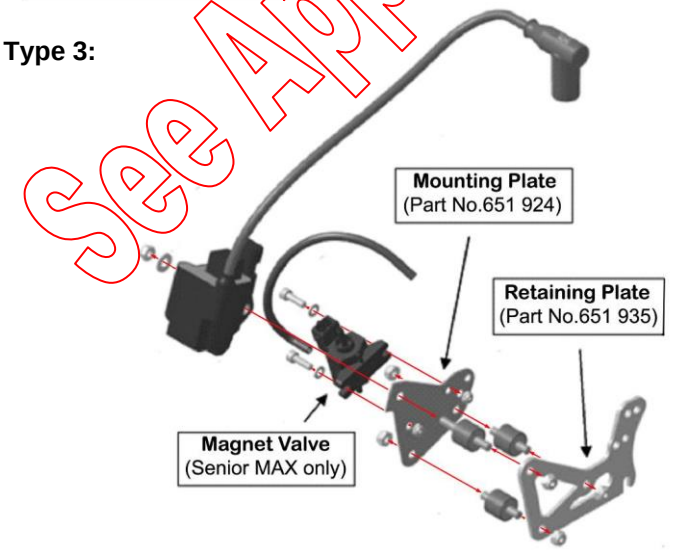
SIGNATURE AND STAMP OF THE MSA	
MSA	Date: **02 December 2015** Signed by: **Joe Hickerton** Position: **MSA Technical Administrator**

Appendix 44

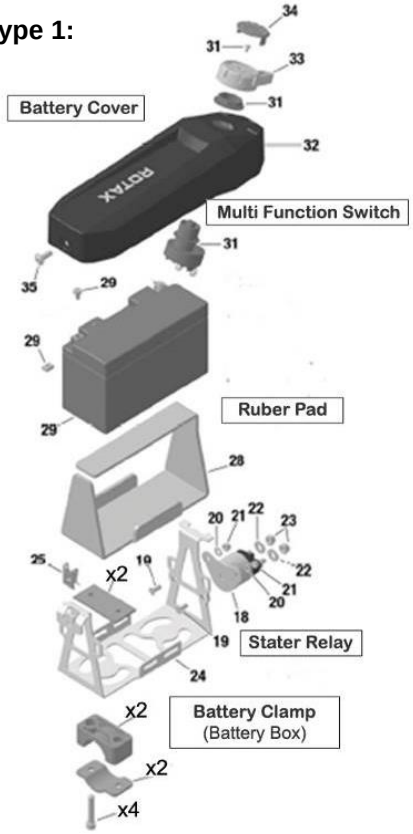
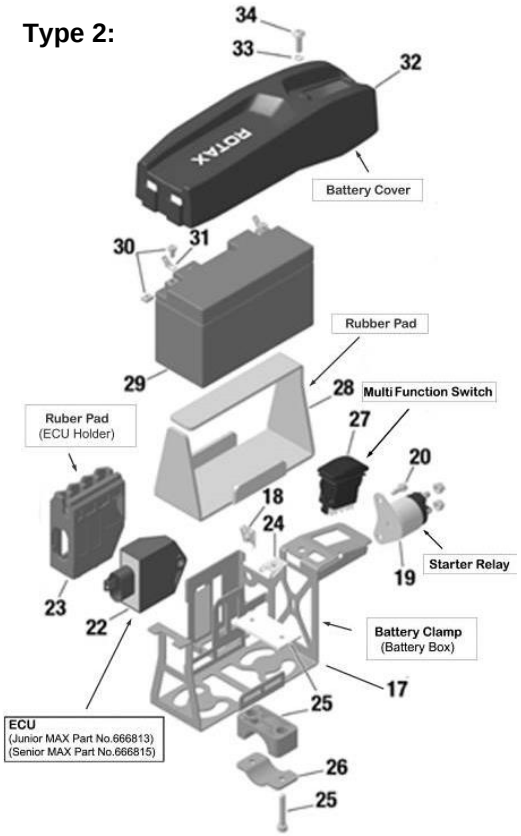
HOMOLOGATION OF KART ENGINE – VARIANT

Category	**ROTAX SENIOR MAX & JUNIOR MAX**
Manufacturer	Bombardier Rotax
Model	FR125
UK Agent	JAG Engineering
Valid from	01 January 2017
Number of pages	4

ALTERNATIVE IGNITION SYSTEM

13. Ignition Unit	**13.1**	EVO Dell'orto ignition system: Ignition coil and separate Junior or Senior specification ECU must be fitted.
	13.2	Only Type 2 or Type 3 mounting plate and retaining plate are permitted (in combination as shown below): **Type 2:**  **Type 3:** 

		It is permitted to use 2 spacers, one per mounting hole, with a maximum thickness of 20mm between the retaining plate and the gearbox cover.
	13.3	Type 2 ignition mounting plate (part no. **651 920**) and retaining plate (part no. **651 053**) must only be used in conjunction with Type 1 battery clamp (battery box). Type 3 ignition mounting plate (part no. **651 924**) and retaining plate (part no. **651 935**) must only be used in conjunction with Type 2 battery clamp (battery box). See Appendix 59
	13.4	The visual appearance of the ignition coil must be as shown here:   The ignition coil is still permitted if one or both of the stickers (“BRP 666820” or “NIG 0105”) is unreadable or missing.
	13.5	The ignition coil must show 2 pins at the terminal.
	13.6	Minimum length of ignition wire (HT lead): 210mm. Measured from outlet of cable at ignition coil to outlet of cable at spark plug connector (= visible length of the wire).
	13.7	The ECU (electronic control unit) is labelled with stickers carrying the part number, but remains permitted if one or more of the stickers are unreadable or missing. Junior Max ECU part no. **666 813**. Senior Max ECU part no. **666 815**.
	13.8	The ECU has to be checked with the Rotax ECU tester (part no. **276 230**), in accordance with the 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. – Every time the ECU tester is connected to the battery the software version of the ECU tester will be indicated on the display for approx. 2 seconds. The software version indicated on the display must be 2V00 – Start the test by pressing the button “✓” on the ECU tester. – After approx. 3 seconds: ① the type of ECU being tested will be indicated in the second line of the display. – After approx. 30 seconds: ② the result of the test will be indicated in the first line of the display.

		– The ECU tester must indicate the following results: *Junior Max:* ①: 666813JNRMAX ②: !! Test OK !! *Senior Max:* ①: 666815MAX ②: !! Test OK !!  
	13.9	Only an original battery with one of the following specifications is permitted to be used with the EVO Dell'orto ignition system: YUASA YT7B-BS (with or without Rotax branding) ROTAX RX7-12B or RX7-12L (Lithium Iron Phosphate type)
	13.10	The battery must be fitted with the original battery clamp (battery box) and battery cover as shown below: **Type 1:**  **Type 2:** 

	13.11	Battery clamp (battery box) must be fixed to the left side of the chassis, next to the sheet, using both chassis clamps and all 4 fixings screws.

END

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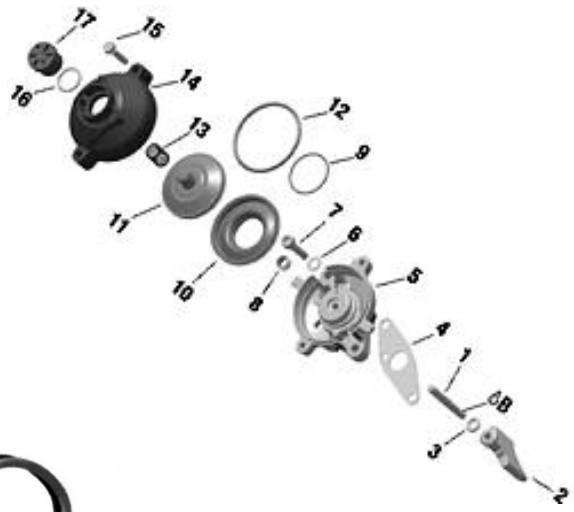
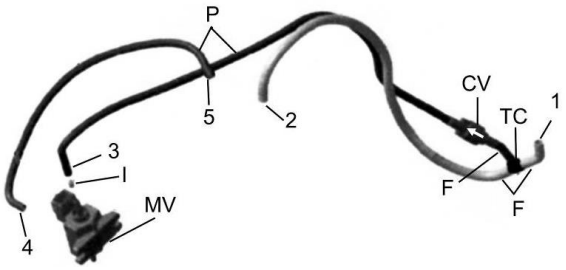
	Date: **01 January 2017** Signed by: **Joe Hickerton** Position: **MSA Technical Manager**

Appendix 45

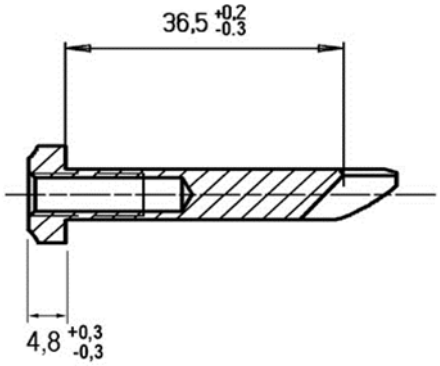
HOMOLOGATION OF KART ENGINE – VARIANT

Category	**ROTAX SENIOR MAX**
Manufacturer	Bombardier Rotax
Model	FR125
UK Agent	JAG Engineering
Valid from	01 January 2017
Number of pages	2

ALTERNATIVE EXHAUST VALVE

7. Exhaust Valve	**7.1**	EVO electronic timed exhaust valve: Must only be used in conjunction with the EVO Dell'orto ignition system.
	7.2	All components as shown below must be fitted: **Electronic timed exhaust valve:**  **Hose connections:** 

MV	Magnetic Valve Must be fitted to mounting plate (part no. **651 920** or **651 925**)
CV	Check Valve
TC	Tee Connector
F	Fuel Line
P	Pressure hose
I	Original Impulse Nozzle (optional). Fitted into pressure hose connected to magnet valve.
1	Connect to impulse connector on fuel pump
2	Connect to impulse connector on gearbox cover
3	Connect to top of Magnetic Valve
4	Connect to side of Magnetic Valve
5	Connect to Electronic Exhaust Valve

	7.3	Exhaust valve dimensions (item 2 of electronic timed exhaust valve diagram): Length: 36.5mm +0.2mm, -0.3mm Width of collar: 4.8mm ±0.3mm 
	7.4	Green coloured exhaust bellows (item 10 of electronic timed exhaust valve diagram, Rotax part no. **260 723**) must be used.
	7.5	*Not applicable.*
	7.6	*Not applicable.*

END

SIGNATURE AND STAMP OF THE MSA	
MSA	Date: **01 January 2017** Signed by: **Joe Hickerton** Position: **MSA Technical Manager**

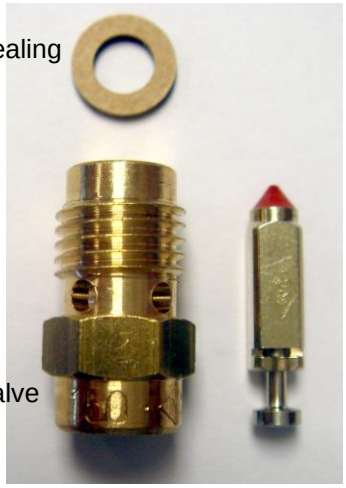
Appendix 46

HOMOLOGATION OF KART ENGINE – VARIANT

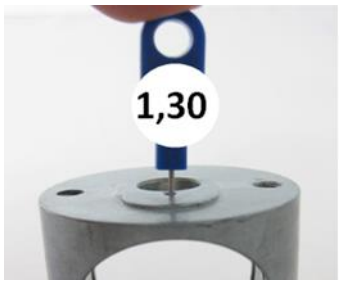
Category	**ROTAX SENIOR MAX & JUNIOR MAX**
Manufacturer	Bombardier Rotax
Model	FR125
UK Agent	JAG Engineering
Valid from	01 January 2017
Number of pages	4

ALTERNATIVE CARBURETTOR

18. Carburettor	**18.1**	**Dell'orto** type **VHSB 34** (cast in body) **XS** (stamped on body). All parts used must be unmodified genuine Rotax or Dell'orto parts. All jets must be correctly seated and securely fitted at all times.
	18.2	*Unchanged.*
	18.3	Any Dell'orto main jet number may be used, even if not supplied by Rotax.
	18.4	Needle Jet: Stamped **DP267**
	18.4.1	Total length: 51.0 ± 0.5mm 
	18.4.2	Length of bottom section: 33.0 ± 0.45mm 

	18.4.3	Top bore diameter: 2.67 ± 0.1mm 
	18.5	Carburettor slide: **45** cast in slide top
	18.6	Needle: Stamped **K57**
	18.7	*Unchanged.*
	18.8	Standard 150 float needle valve set as supplied by Rotax. The set consists of the following parts, all as depicted below: Needle valve seat: Must be marked **150** Inlet needle: Must be spring-loaded type with Viton tip and must be marked with the diamond INC logo. No additional marking permitted. Fibre sealing washer Fibre sealing washer  Needle valve seat Inlet needle with INC logo: 
	18.9	*Unchanged.*
	18.10	*Unchanged.*

	18.11	Only the following combination of float and idle jets is permitted: Float (marked with weight: **4gr** Idle Jet (stamped) **60** Idle Emulsion Tube (stamped): **45** Venturi insert (stamped): **12.5**
	18.11.1	Idle jet: 0.65mm plug / pin gauge must not enter the bore. 
	18.11.2	Idle jet emulsion tube: 0.50mm plug/pin gauge must not enter the central bore. 
	18.11.3	Venturi insert: Stamped **12.5**. 

	18.11.4	Venturi insert: Angular bore: 0.60mm plug / pin gauge must not enter the bore.  Vertical bore: 1.30mm plug / pin gauge must not enter the bore. 

END

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	Date: **01 January 2017** Signed by: **Joe Hickerton** Position: **MSA Technical Manager**

Appendix 47

HOMOLOGATION OF KART ENGINE – AMENDMENT

Category	**ALL ROTAX CLASSES**
Manufacturer	Bombardier Rotax
Model	FR125
UK Agent	JAG Engineering
Valid from	01 January 2017
Number of pages	1

CARBURETTOR FLOAT ARM HEIGHT

18. Carburettor	**18.1**	*Unchanged.*
	…	
	18.12	*Unchanged.*
	18.13	Applicable to Dell'orto **VHSB 34 QD**, **VHSB 34 QS** and **VHSB 34 XS**. Float lever arm height: Using the Rotax gauge (part no. **277400**), the float arms must both fit between the gauge slot without touching. The carburettor must be upside down on a horizontal flat surface. The gauge must sit on the metal body of the carburettor without gasket. 

END

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MSA	Date: **01 January 2017** Signed by: **Joe Hickerton** Position: **MSA Technical Manager**

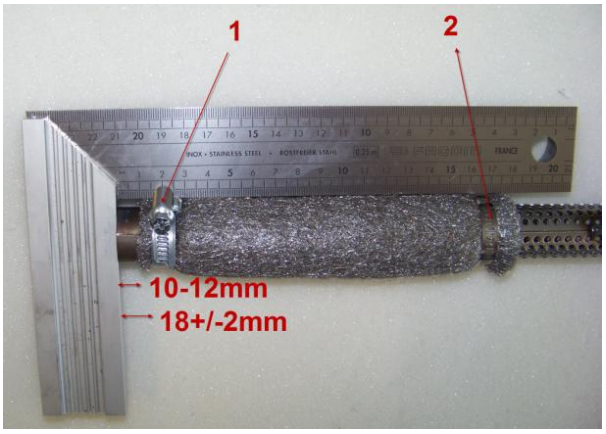
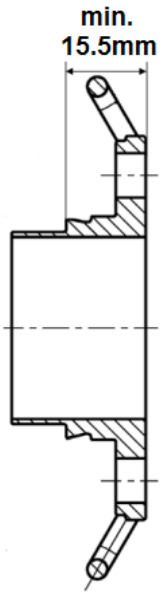
Appendix 48

HOMOLOGATION OF KART ENGINE – VARIANT

Category	**ALL ROTAX CLASSES**
Manufacturer	Bombardier Rotax
Model	FR125
UK Agent	JAG Engineering
Valid from	01 January 2017
Number of pages	2

ALTERNATIVE EXHAUST

24. Exhaust system	**24.1**	EVO exhaust system: 
	24.2	Perforated silencer tube and end plate with 90º outlet must be used.
	24.3	Rotax gasket ring must be fitted between exhaust system and silencer.
	24.4	The addition of a square steel isolating mat (part no. **297 983**) beneath the standard exhaust isolating mat is permitted. Dimensions 165mm x 165mm (+10mm). Clamp (1) must be fitted at a distance of 18 ± 2mm from the end of the tube as shown. 10-12mm is guidance for assembly purposes. Clamp (2) must be fitted at the end area of the steel isolation mat. Clamp (2) may be of the same type as Clamp (1).

		 The maximum number of isolating mats that may be used is 2 (the standard mat + optional steel mat detailed above).
	24.5	*Unchanged.*
	24.6	Alternative exhaust socket. One original exhaust gasket must be used between the exhaust socket (flange) and the cylinder. Rotax gasket ring must be fitted between exhaust socket and exhaust system.  
	24.7	It is permitted to use additional springs to secure the silencer.
	24.8	*Unchanged.*

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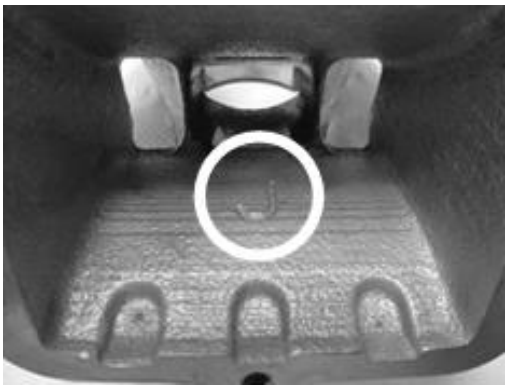
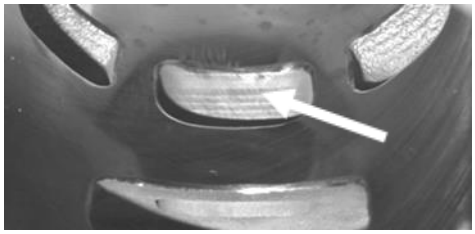
	Date: **01 January 2017** Signed by: **Joe Hickerton** Position: **MSA Technical Manager**

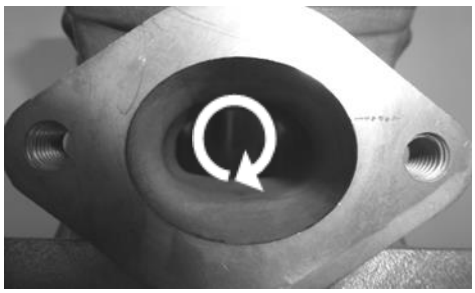
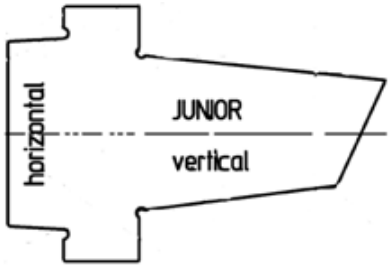
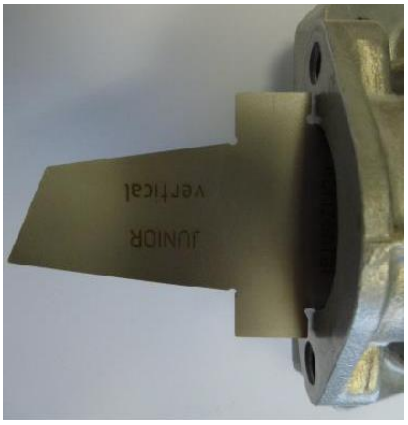
Appendix 49

HOMOLOGATION OF KART ENGINE – VARIANT

Category	**ROTAX JUNIOR MAX & MINI MAX**
Manufacturer	Bombardier Rotax
Model	FR125
UK Agent	JAG Engineering
Valid from	01 January 2017
Number of pages	2

ALTERNATIVE CYLINDER WITH CNC MACHINING

5. Cylinder	**5.1**	*Unchanged.*
	5.2	*Unchanged.*
	5.3	*Unchanged.*
	5.4	Cylinder without exhaust power valve. Cylinders marked with **ROTAX** and part no. **223994**, and showing cast letter **J** in the inlet port.  
	5.5	*Unchanged.*
	5.6	*Unchanged.*
	5.7	All ports may have chamfered edges to prevent ring snagging. Top edge of the central boost port is CNC machined. Any additional fettling or machining is not permitted. 
	5.8	*Unchanged.*

	5.9	CNC machined exhaust port. Any additional fettling or machining is not permitted. 
	5.9.1	The Rotax go/no-go gauge (part no. **676 240**) is used to check the exhaust port on cylinders marked **223994** and with the letter **J** cast in the inlet port.  Insert the side of the gauge marked 'horizontal' in a horizontal position. The gauge must not touch the exhaust port flange.  Insert the side of the gauge marked 'vertical', in a vertical position. The gauge must not touch the exhaust port flange. 

END

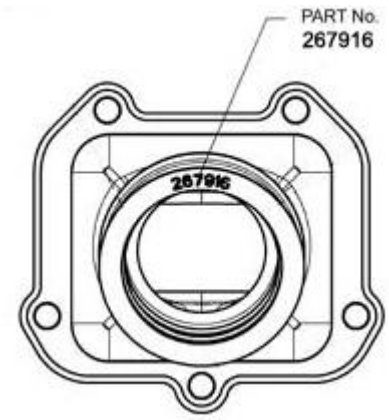
SIGNATURE AND STAMP OF THE MSA	
MSA	Date: **01 January 2017** Signed by: **Joe Hickerton** Position: **MSA Technical Manager**

Appendix 50

HOMOLOGATION OF KART ENGINE – VARIANT

Category	**ALL ROTAX CLASSES**
Manufacturer	Bombardier Rotax
Model	FR125
UK Agent	JAC Engineering
Valid from	01 January 2017
Number of pages	1

ALTERNATIVE INLET MANIFOLD

8. Inlet System	**8.1**	Inlet manifold marked with Rotax part no. **267916**. 
	8.2	*Unchanged.*
	8.3	*Unchanged.*

END

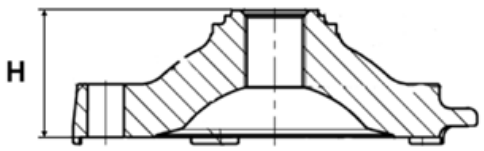
SIGNATURE AND STAMP OF THE MSA	
	Date: **01 January 2017** Signed by: **Joe Hickerton** Position: **MSA Technical Manager**

Appendix 51

HOMOLOGATION OF KART ENGINE – AMENDMENT

Category	**ALL ROTAX CLASSES**
Manufacturer	Bombardier Rotax
Model	FR125
UK Agent	JAG Engineering
Valid from	01 January 2017
Number of pages	1

COMBUSTION CHAMBER INSERTS

2. Combustion Chamber Insert	**2.1**	Only inserts with the following ID codes will be permitted: **223 389** **223 389 1** **223 389 2** **223 389 2/1** **223 389 2/2**
	2.2	*Unchanged.*
	2.3	Height of combustion chamber insert: **H:** 28.8 ± 0.2mm 

END

SIGNATURE AND STAMP OF THE MSA	
	Date: **01 January 2017** Signed by: **Joe Hickerton** Position: **MSA Technical Manager**

Appendix 52

HOMOLOGATION OF KART ENGINE – AMENDMENT

Category	**ALL ROTAX CLASSES**
Manufacturer	Bombardier Rotax
Model	FR125
UK Agent	JAG Engineering
Valid from	01 January 2017
Number of pages	1

GUDGEON PIN MINIMUM WEIGHT

4. Gudgeon Pin	**4.1**	*Unchanged.*
	4.2	*Unchanged.*
	4.3	Minimum weight: 31.00g

END

SIGNATURE AND STAMP OF THE MSA	
	Date: **01 January 2017** Signed by: **Joe Hickerton** Position: **MSA Technical Manager**

Appendix 53

HOMOLOGATION OF KART ENGINE – AMENDMENT

Category	**ALL ROTAX CLASSES**
Manufacturer	Bombardier Rotax
Model	FR125
UK Agent	JAG Engineering
Valid from	01 January 2017
Number of pages	2

ATOMISER MEASUREMENTS

19. Atomiser	**19.1**	Type 2 only. No modifications allowed.
	19.2	Total length: QD & QS carburettors: 23.75 ± 0.45mm XS carburettor: 23.75 ± 0.35mm 
	19.3	Length of cylindrical section: QD, QS & XS carburettors: 15.75 ± 0.25mm 
	19.4	Dimension of cutaway: QD & QS carburettors: 6.00 ± 0.15mm XS carburettor: 5.80 ± 0.30mm 

	19.5	Diameter of cross bore: QD & QS carburettors: 4.05 ± 0.15mm XS carburettor: 5.00 ± 0.15mm	

END

SIGNATURE AND STAMP OF THE MSA	
MSA	Date: **01 January 2017** Signed by: **Joe Hickerton** Position: **MSA Technical Manager**

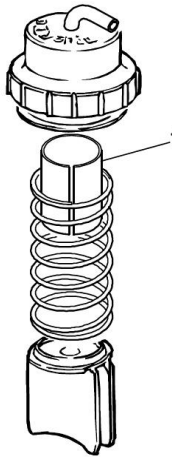
Appendix 54

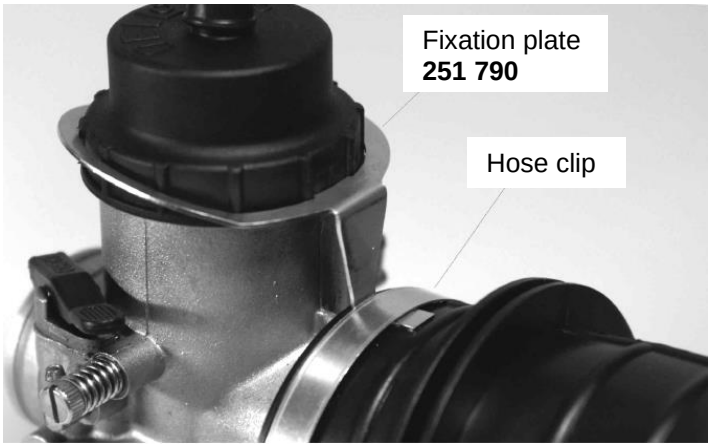
HOMOLOGATION OF KART ENGINE – AMENDMENT

This Appendix fully replaces Appendix 24

Category	**ROTAX MINI MAX**
Manufacturer	Bombardier Rotax
Model	FR125
UK Agent	JAG Engineering
Valid from	01 January 2017
Number of pages	2

MINI MAX INLET THROTTLE RESTRICTOR SPACER

18. Carburettor	**18.1**	*Unchanged.*
	…	
	18.11	*Unchanged.*
	18.12	**MiniMax Engines Only:** Inlet throttle restrictor must be in place at all times. The restrictor must be as supplied by J.A.G. It must be fitted to the carburettor cap, as shown below, to limit the opening of the throttle.  Throttle Restrictor Restrictor fitted to carburettor cap  The length of the spacer must be 33.5mm minimum. The carburettor cap must be completely screwed and tightened on to the carburettor. Only 1 original rubber gasket must be used in the carburettor cap.

		The fixation plate (Rotax part no. **251 790**) must be fitted and the hose clip securely tightened to prevent the carburettor cap from being unscrewed. 

END

SIGNATURE AND STAMP OF THE MSA	
 	Date: **01 January 2017** Signed by: **Joe Hickerton** Position: **MSA Technical Manager**

Appendix 55

HOMOLOGATION OF KART ENGINE – AMENDMENT

This Appendix fully replaces Appendix 39

Category	**ALL ROTAX CLASSES**
Manufacturer	Bombardier Rotax
Model	FR125
UK Agent	JAG Engineering
Valid from	01 January 2017
Number of pages	1

ALTERNATIVE AIR FILTER ELEMENT

17. Intake Silencer	**17.1**	*Unchanged.*
	…	
	17.4	*Unchanged.*
	17.5	Alternative double layer air filter element marked TwinAir (variable colour) may be used. 

END

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MSA	Date: **01 January 2017** Signed by: **Joe Hickerton** Position: **MSA Technical Manager**

Appendix 56

HOMOLOGATION OF KART ENGINE – AMENDMENT

Category	**ROTAX SENIOR MAX & JUNIOR MAX**
Manufacturer	Bombardier Rotax
Model	FR125
UK Agent	JAG Engineering
Valid from	01 January 2017
Number of pages	1

EXHAUST PORT TIMING

6. Exhaust Port Timing	**6.1**	The exhaust port height must be checked using the Rotax go/no-go gauge (part no. **277 402**). The gauge must not touch the cylinder wall when inserted into the exhaust port as shown. 

END

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	Date: **01 January 2017** Signed by: **Joe Hickerton** Position: **MSA Technical Manager**

Appendix 57

HOMOLOGATION OF KART ENGINE – VARIANT

Category	**ALL ROTAX CLASSES**
Manufacturer	Bombardier Rotax
Model	FR125
UK Agent	JAG Engineering
Valid from	01 January 2017
Number of pages	1

ALTERNATIVE CRANKCASE

11. Crankcase	**11.1**	Black coloured variant – as exampled below – of the newer-style crankcase as detailed in Appendix 30 may be used. All other details unchanged. 
	11.2	*Unchanged.*
	11.3	*Unchanged (from Appendix 30).*
	11.4	*Unchanged.*
	11.5	*Unchanged (from Appendix 30).*
	11.6	Crankcase with two M6 metric threads (instead of Taptite screws) for crank sensor. At the same time the sealing location surface for the crankshaft sensor will be machined to a specific dimension from the center of the crankshaft to minimize tolerances. This will result in a faultless signal for the ignition system (suitable for Denso and Dell'orto ignition system).

END

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MSA	Date: **01 January 2017** Signed by: **Joe Hickerton** Position: **MSA Technical Manager**

Appendix 58

HOMOLOGATION OF KART ENGINE
ADDITIONAL INFORMATION

Category	**ALL ROTAX CLASSES**
Manufacturer	Bombardier Rotax
Model	FR125
UK Agent	JAG Engineering
Valid From	02 March 2017
Number of pages	1

NEEDLE JET ATOMISER FINISH

18. Carburettor	**18.1**	*Unchanged.*
	…	*Unchanged.*
	18.4	*Unchanged.*
	18.4.1	Needle Jet Atomiser may show shot blast finish and/or deburring of the 16 cross-drilled holes.
	18.5	*Unchanged.*
	…	
	18.11	*Unchanged.*

END

SIGNATURE AND STAMP OF THE MSA	
	Date: **02 March 2017** Signed by: **Joe Hickerton** Position: **MSA Technical Manager**

Appendix 59

HOMOLOGATION OF KART ENGINE – ERRATUM

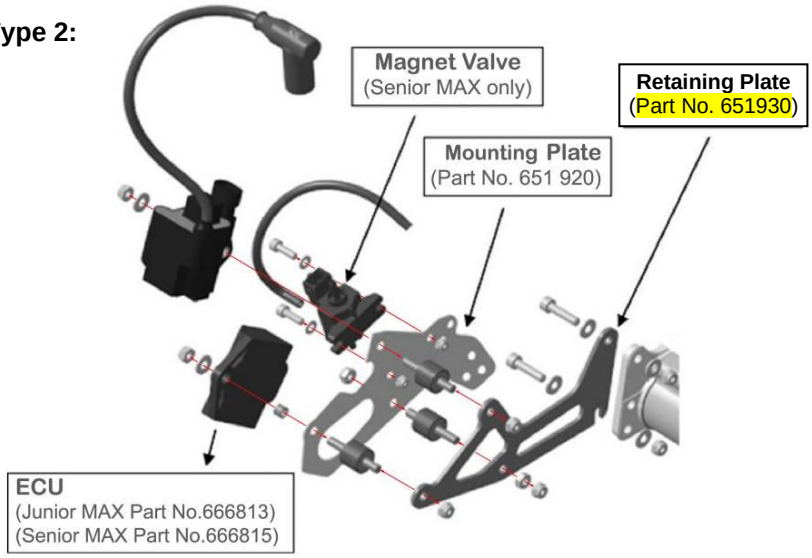
This Appendix fully replaces the relevant sections of Appendix 44

Category	**ROTAX SENIOR MAX & JUNIOR MAX**
Manufacturer	Bombardier Rotax
Model	FR125
UK Agent	JAG Engineering
Valid From	09 August 2017
Number of pages	2

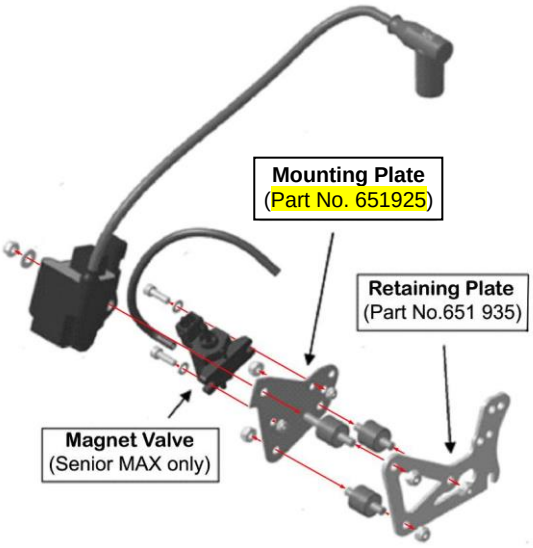
ALTERNATIVE IGNITION SYSTEM

13. Ignition Unit	**13.1**	*Unchanged.*
	13.2	Only Type 2 or Type 3 mounting plate and retaining plate are permitted (in combination as shown below):

Type 2:



Type 3:



		It is permitted to use 2 spacers, one per mounting hole, with a maximum thickness of 20mm between the retaining plate and the gearbox cover.
	13.3	Type 2 ignition mounting plate (part no. **651 920**) and retaining plate (part no. **651 930**) must only be used in conjunction with Type 1 battery clamp (battery box). Type 3 ignition mounting plate (part no. **651 925**) and retaining plate (part no. **651 935**) must only be used in conjunction with Type 2 battery clamp (battery box).
	13.4	*Unchanged.*
	…	*Unchanged.*
	13.11	*Unchanged.*

END

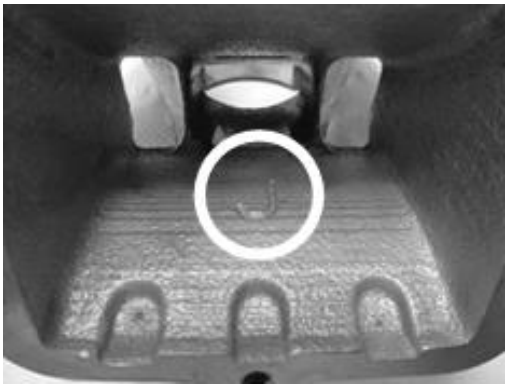
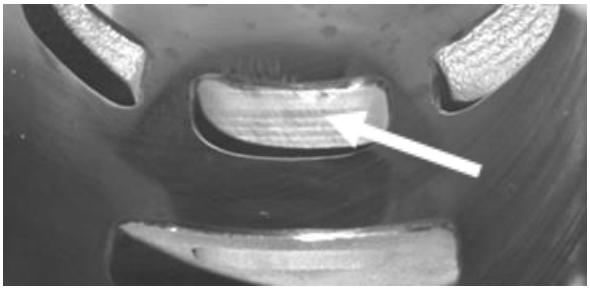
SIGNATURE AND STAMP OF THE MSA	
MSA	Date: **09 August 2017** Signed by: **Joe Hickerton** Position: **MSA Technical Manager**

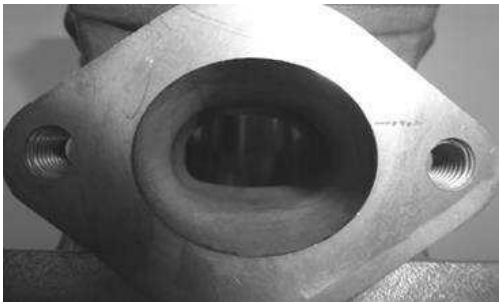
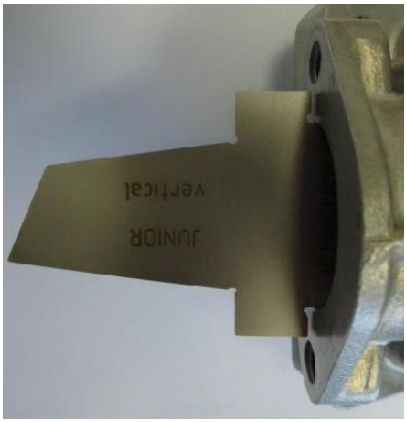
Appendix 60

HOMOLOGATION OF KART ENGINE – VARIANT

Category	**ROTAX SENIOR MAX**
Manufacturer	Bombardier Rotax
Model	FR125
UK Agent	JAG Engineering
Valid from	01 January 2018
Number of pages	2

ALTERNATIVE CYLINDER

5. Cylinder	**5.1**	*Unchanged.*
	5.2	*Unchanged.*
	5.3	*Unchanged.*
	5.4	Cylinders marked with **ROTAX** and part no. **223993**, and showing cast letter (e.g. **J**) in the inlet port.  
	5.5	*Unchanged.*
	5.6	*Unchanged.*
	5.7	All ports may have chamfered edges to prevent ring snagging. Top edge of the central boost port is CNC machined. Any additional fettling or machining is not permitted. 

	5.8	Unchanged.
	5.9	CNC machined exhaust port. Any additional fettling or machining is not permitted. 
	5.9.1	The Rotax go/no-go gauge (part no. **676 245**) is used to check the exhaust port on cylinders marked **223993** and with a letter (e.g. **J**) cast in the inlet port. Insert the side of the gauge marked 'horizontal' in a horizontal position. The gauge must not touch the exhaust port flange.  Insert the side of the gauge marked 'vertical', in a vertical position. The gauge must not touch the exhaust port flange. 

END

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MSA	Date: **01 January 2018** Signed by: **Joe Hickerton** Position: **MSA Technical Manager**

Appendix 61

HOMOLOGATION OF KART ENGINE – VARIANT

Category	**ALL ROTAX CLASSES**
Manufacturer	Bombardier Rotax
Model	FR125
UK Agent	JAG Engineering
Valid from	01 January 2018
Number of pages	1

ALTERNATIVE SPARK PLUG CAP

14. Spark Plug	**14.1**	*Unchanged.*
	14.2	*Unchanged.*
	14.3	Red spark plug cap for DENSO and EVO Dell'orto ignition coils, marked: **NGK** as shown: 

END

SIGNATURE AND STAMP OF THE MSA	
MSA	Date: **01 January 2018** Signed by: **Joe Hickerton** Position: **MSA Technical Manager**

Appendix 62

HOMOLOGATION OF KART ENGINE
ADDITIONAL INFORMATION

Category	**ALL ROTAX CLASSES**
Manufacturer	Bombardier Rotax
Model	FR125
UK Agent	JAG Engineering
Valid From	01 January 2018
Number of pages	1

CON ROD COLOUR

9. Crankshaft	**9.1**	*Unchanged.*
	9.2	*Unchanged.*
	9.2.1	On con rods with part number **362**, the colour may vary between grey and brown (shade may vary), examples shown here: 
	9.3	*Unchanged.*
	9.4	*Unchanged.*
	9.5	*Unchanged.*
	9.6	*Unchanged.*
	9.7	*Unchanged.*

END

SIGNATURE AND STAMP OF THE MSA	
MSA	Date: **01 January 2018** Signed by: **Joe Hickerton** Position: **MSA Technical Manager**

Appendix 63

HOMOLOGATION OF KART ENGINE
ADDITIONAL INFORMATION

Category	**ALL ROTAX CLASSES**
Manufacturer	Bombardier Rotax
Model	FR125
UK Agent	JAG Engineering
Valid From	01 January 2018
Number of pages	1

CRANKSHAFT IGNITION SIGNAL CHECKING TEMPLATE

9. Crankshaft	**9.1**	*Unchanged.*
	9.2	*Unchanged.*
	9.3	*Unchanged.*
	9.4	*Unchanged.*
	9.5	*Unchanged.*
	9.6	*Unchanged.*
	9.7	*Unchanged.*
	9.8	Fit the template (part no. **277391**) on the crankshaft. Align the hole in the template with the big end pin on the crankshaft. The 2 edges of the crankshaft must be in line (± 0.5mm) with the corresponding edges (marked **MAX**) of the template. 

END

SIGNATURE AND STAMP OF THE MSA	
MSA	Date: **01 January 2018** Signed by: **Joe Hickerton** Position: **MSA Technical Manager**

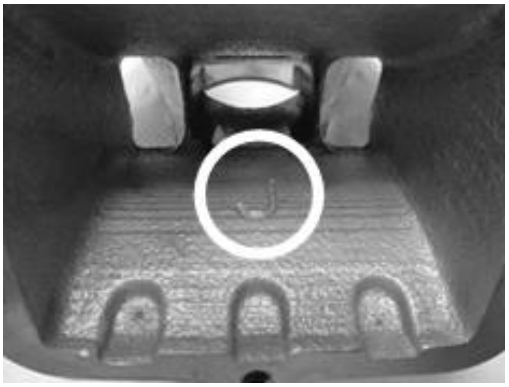
Appendix 64

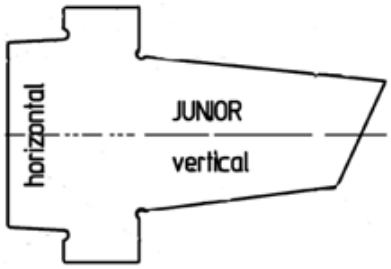
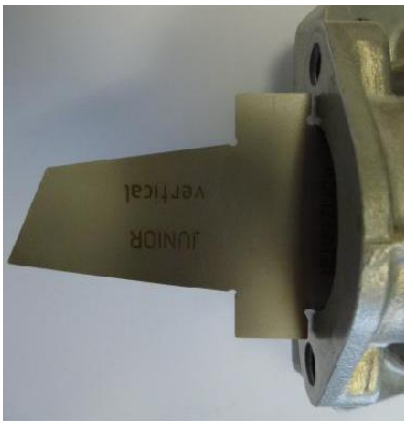
HOMOLOGATION OF KART ENGINE – ERRATUM

This Appendix fully replaces the relevant sections of Appendix 49

Category	**ROTAX JUNIOR MAX & MINI MAX**
Manufacturer	Bombardier Rotax
Model	FR125
UK Agent	JAC Engineering
Valid From	09 January 2018
Number of pages	2

ALTERNATIVE CYLINDER WITH CNC MACHINING

5. Cylinder	**5.1**	*Unchanged.*
	5.2	*Unchanged.*
	5.3	*Unchanged.*
	5.4	Cylinder without exhaust power valve. Cylinders marked with **ROTAX** and part no. **223994**, and showing cast letter (e.g. **J**) in the inlet port.  
	5.5	*Unchanged.*
	5.6	*Unchanged.*
	5.7	*Unchanged.*
	5.8	*Unchanged.*
	5.9	*Unchanged.*

	5.9.1	The Rotax go/no-go gauge (part no. **676 240**) is used to check the exhaust port on cylinders marked **223994** and with a letter (e.g. **J**) cast in the inlet port.	
		Insert the side of the gauge marked 'horizontal' in a horizontal position. The gauge must not touch the exhaust port flange.	
		Insert the side of the gauge marked 'vertical', in a vertical position. The gauge must not touch the exhaust port flange.	

END

SIGNATURE AND STAMP OF THE MSA	
MSA	Date: **09 January 2018** Signed by: **Joe Hickerton** Position: **MSA Technical Manager**

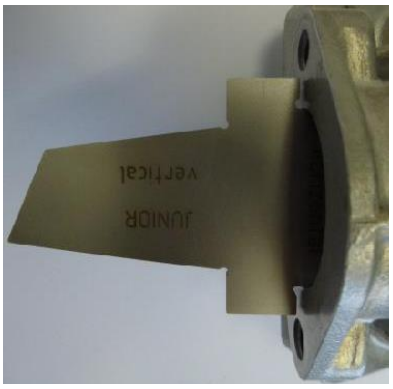
Appendix 65

HOMOLOGATION OF KART ENGINE – AMENDMENT

This Appendix fully replaces the relevant section of Appendix 66

Category	**ROTAX SENIOR MAX**
Manufacturer	Bombardier Rotax
Model	FR125
UK Agent	JAC Engineering
Valid from	30 July 2018
Number of pages	1

EXHAUST PORT GAUGE

5. Cylinder	**5.1**	*Unchanged.*
	…	*Unchanged.*
	5.9	*Unchanged.*
	5.9.1	Rotax gauges **676 245** and **676 245*** are used to check the exhaust port on cylinders marked **223993** and with a letter (e.g. **J**) cast in the inlet port. Insert the side of gauge **676 245** or gauge **676 245*** marked 'horizontal' in a horizontal position. The gauge must not touch the exhaust port flange.  Insert the side of gauge **676 245*** marked 'vertical' in a vertical position. The gauge must not touch the exhaust port flange. **Note:** The side of gauge **676 245** marked 'vertical' cannot be used. 

END

SIGNATURE AND STAMP OF THE MSA	
MSA	Date: **30 July 2018** Signed by: **Joe Hickerton** Position: **MSA Technical Manager**

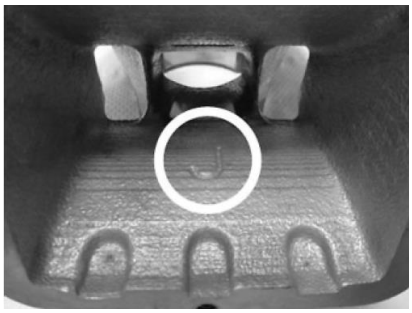
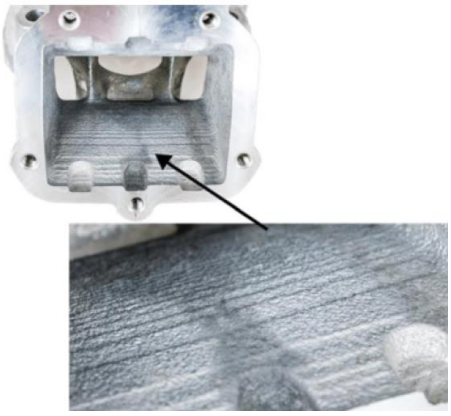
Appendix 66

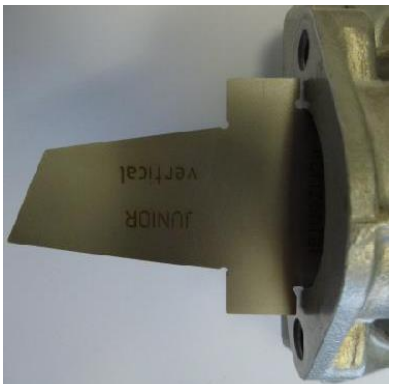
HOMOLOGATION OF KART ENGINE – VARIANT

This Appendix fully replaces Appendix 60 and Appendix 65

Category	**ROTAX SENIOR MAX**
Manufacturer	Bombardier Rotax
Model	FR125
UK Agent	JAG Engineering
Valid from	01 January 2019
Number of pages	2

ALTERNATIVE CYLINDER

5. Cylinder	**5.1**	*Unchanged.*
	5.2	*Unchanged.*
	5.3	*Unchanged.*
	5.4	Single Core cylinder marked with **ROTAX** and part no. **223993** showing a linear textured cast finish in the inlet port. Cylinder may show cast letter (e.g. **J**) in the inlet port.   linear textured cast finish in the inlet port  

	5.5	*Unchanged.*
	…	*Unchanged.*
	5.9	*Unchanged.*
	5.9.1	Rotax gauges **676 245** and **676 245*** are used to check the exhaust port on Single Core cylinders. Insert the side of gauge **676 245** or gauge **676 245*** marked 'horizontal' in a horizontal position. The gauge must not touch the exhaust port flange.  Insert the side of gauge **676 245*** marked 'vertical' in a vertical position. The gauge must not touch the exhaust port flange. **Note:** The side of gauge **676 245** marked 'vertical' cannot be used. 

END

SIGNATURE AND STAMP	
motor sport UK	Date: **01 January 2019** Signed by: **Joe Hickerton** Position: **Technical Manager**

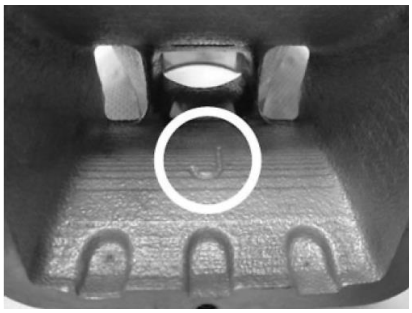
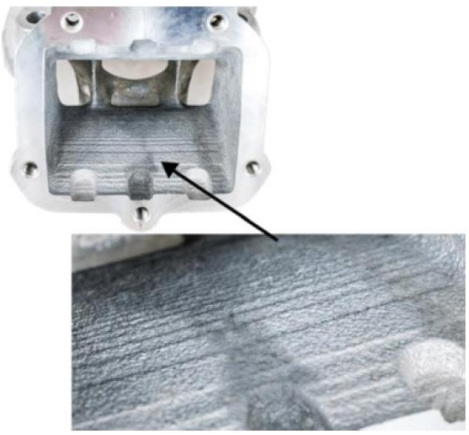
Appendix 67

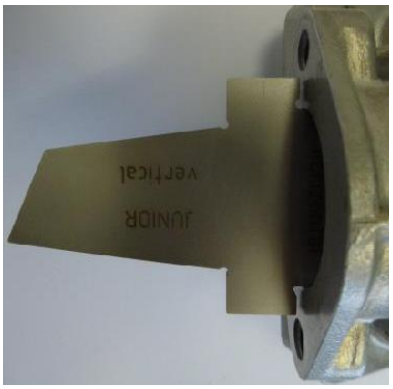
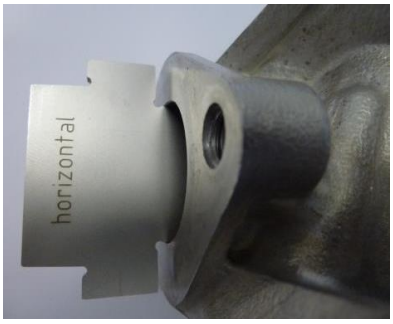
HOMOLOGATION OF KART ENGINE – VARIANT

This Appendix fully replaces Appendix 49 and Appendix 64

Category	**ROTAX JUNIOR MAX & MINI MAX**
Manufacturer	Bombardier Rotax
Model	FR125
UK Agent	JAG Engineering
Valid from	01 January 2019
Number of pages	2

ALTERNATIVE CYLINDER

5. Cylinder	**5.1**	*Unchanged.*
	5.2	*Unchanged.*
	5.3	*Unchanged.*
	5.4	Single Core cylinder marked with **ROTAX** and part no. **223994** showing a linear textured cast finish in the inlet port. Cylinder may show cast letter (e.g. **J**) in the inlet port.   linear textured cast finish in the inlet port 
	5.5	*Unchanged.*
	…	*Unchanged.*
	5.9	*Unchanged.*

	5.9.1	Rotax gauge **676 240** is used to check the exhaust port on Single Core cylinders. Insert the side of gauge **676 240** marked 'horizontal' in a horizontal position. The gauge must not touch the exhaust port flange.  Insert the side of gauge **676 240** marked 'vertical' in a vertical position. The gauge must not touch the exhaust port flange. 

END

SIGNATURE AND STAMP	
motor sport UK	Date: **01 January 2019** Signed by: **Joe Hickerton** Position: **Technical Manager**

Appendix 68

HOMOLOGATION OF KART ENGINE ADDITIONAL INFORMATION

To be read in conjunction with Appendix 3 and Appendix 4

Category	**ALL ROTAX CLASSES**
Manufacturer	Bombardier Rotax
Model	FR125
UK Agent	JAG Engineering
Valid from	01 January 2019
Number of pages	1

OFFICIAL ID CARDS

ID Cards	**1**	*Unchanged.*
	2	*Unchanged.*
	3	*Unchanged.*

OFFICIAL SEALS

Seals	**1**	*Unchanged.*
	2	*Unchanged.*
	3	*Unchanged.*
	3.1	All engines must be sealed between cylinder, crankcases, cylinder head and reed valve block with an official seal to prevent modification. All seals must be crimped with the official Rotax crimping tool part no.**276 110**. Each end of the sealing wire must only pass through the seal once.  

END

SIGNATURE AND STAMP	
motor sport UK	Date: **01 January 2019** Signed by: **Joe Hickerton** Position: **Technical Manager**

Appendix 69

HOMOLOGATION OF KART ENGINE – AMENDMENT

Category	**ROTAX SENIOR MAX**
Manufacturer	Bombardier Rotax
Model	FR125
UK Agent	JAG Engineering
Valid from	30 July 2018
Number of pages	1

EXHAUST VALVE MEASUREMENT

7. Exhaust Valve	**7.1**	*Unchanged.*
	7.2	*Unchanged.*
	7.3	Turn crankshaft until the piston just closes the exhaust port. Insert the exhaust valve gauge part no. **277 030** as shown in the picture until it stops at the flange. At the circular contact area between exhaust valve and the flange of the cylinder, a 0.05mm feeler gauge may fit between the gauge and the flange either on the top or bottom side, but must not fit on both sides. 
	7.4	*Unchanged.*
	7.5	*Unchanged.*
	7.6	*Unchanged.*

END

SIGNATURE AND STAMP	
motor sport UK	Date: **01 January 2019** Signed by: **Joe Hickerton** Position: **Technical Manager**

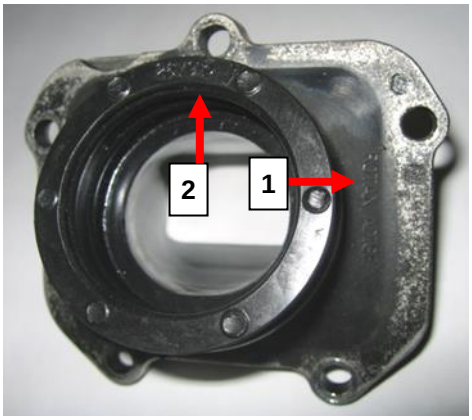
Appendix 70

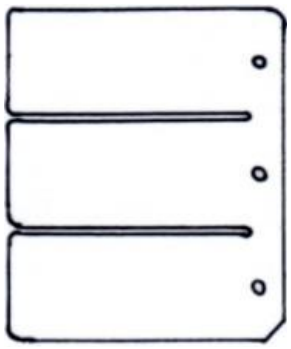
HOMOLOGATION OF KART ENGINE – AMENDMENT

This Appendix fully replaces Appendix 7, Appendix 43 and Appendix 50

Category	**ALL ROTAX CLASSES**
Manufacturer	Bombardier Rotax
Model	FR125
UK Agent	JAG Engineering
Valid from	01 January 2020
Number of pages	2

INLET SYSTEM

8. Inlet System	**8.1**	Inlet manifold must be marked with: – **ROTAX** (1) and Rotax part no. **267915** (2), or; – **ROTAX** (1) and Rotax part no. **267916** (2), or; – Rotax part no. **267916** (2)  Some factory flash removal may be present in the area 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 3mm in width. No additional grinding or machining is permitted.

	8.2	The reed valve assembly consists of two petal stops and two reeds consisting of three petals each. The thickness of the reeds is 0.60mm ± 0.10mm.   The reed stops must form an arc, no other shaping is permitted. One original Rotax reed block gasket must be used between the reed block and cylinder.
	8.3	One original Rotax reed block gasket must be used between the reed block and cylinder. The fitting of more than one reed block gasket is not permitted.

END

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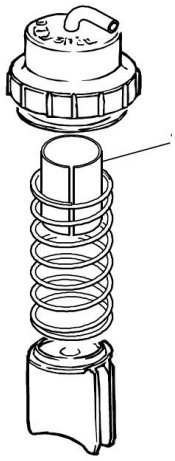
Appendix 71

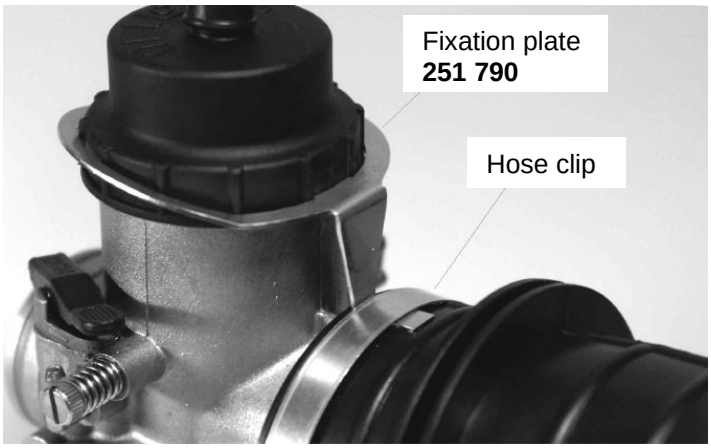
HOMOLOGATION OF KART ENGINE – AMENDMENT

This Appendix fully replaces Appendix 24 and Appendix 54

Category	**ROTAX MINI MAX**
Manufacturer	Bombardier Rotax
Model	FR125
UK Agent	JAG Engineering
Valid from	01 January 2020
Number of pages	1

MINI MAX INLET THROTTLE RESTRICTOR SPACER

18. Carburettor	**18.1**	*Unchanged.*
	…	
	18.11	*Unchanged.*
	18.12	**MiniMax Engines Only:** Inlet throttle restrictor must be in place at all times. The restrictor must be as supplied by J.A.G. It must be fitted to the carburettor cap, as shown below, to limit the opening of the throttle.  Throttle Restrictor Restrictor fitted to carburettor cap  The length of the spacer must be 37.8mm minimum. The carburettor cap must be completely screwed and tightened on to the carburettor. Only 1 original rubber gasket must be used in the carburettor cap.

		The fixation plate (Rotax part no. **251 790**) must be fitted and the hose clip securely tightened to prevent the carburettor cap from being unscrewed. 

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	Date: **01 January 2020** Signed by: **Joe Hickerton** Position: **Technical Manager**

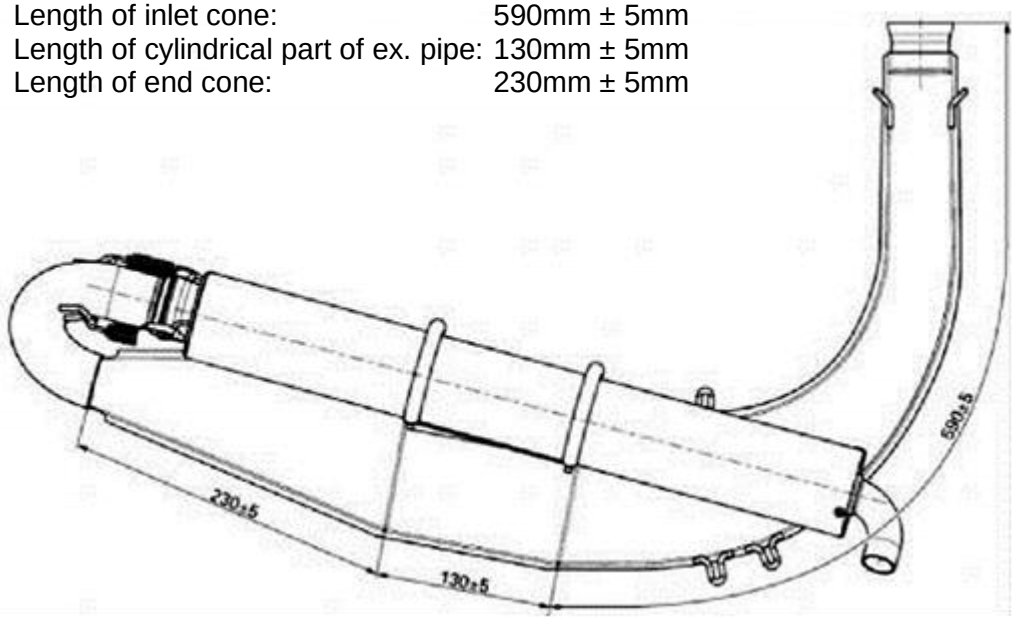
Appendix 72

HOMOLOGATION OF KART ENGINE ADDITIONAL INFORMATION

To be read in conjunction with Appendix 48

Category	**ALL ROTAX CLASSES**
Manufacturer	Bombardier Rotax
Model	FR125
UK Agent	JAG Engineering
Valid from	01 January 2020
Number of pages	1

EVO EXHAUST SYSTEM DIMENSIONS

24. Exhaust system	**24.1**	*Unchanged.*
	…	
	24.8	*Unchanged.*
	24.9	Length of inlet cone: 590mm ± 5mm Length of cylindrical part of ex. pipe: 130mm ± 5mm Length of end cone: 230mm ± 5mm 

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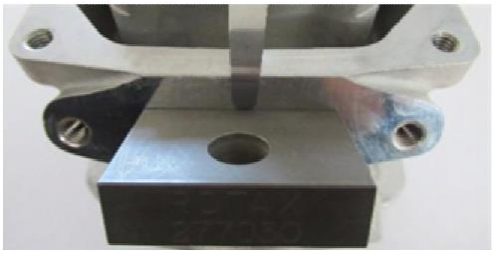
Appendix 73

HOMOLOGATION OF KART ENGINE – AMENDMENT

This Appendix fully replaces Appendix 69

Category	**ROTAX SENIOR MAX**
Manufacturer	Bombardier Rotax
Model	FR125
UK Agent	JAG Engineering
Valid from	01 January 2020
Number of pages	1

EXHAUST VALVE MEASUREMENT

7. Exhaust Valve	**7.1**	*Unchanged.*
	7.2	*Unchanged.*
	7.3	Turn crankshaft until the piston just closes the exhaust port. Insert the exhaust valve gauge part no. **277 030** as shown in the picture until it stops at the flange. At the circular contact area between exhaust valve and the flange of the cylinder, a 0.25mm feeler gauge must not fit between the gauge and the flange. 
	7.4	*Unchanged.*
	7.5	*Unchanged.*
	7.6	*Unchanged.*

END

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Appendix 74

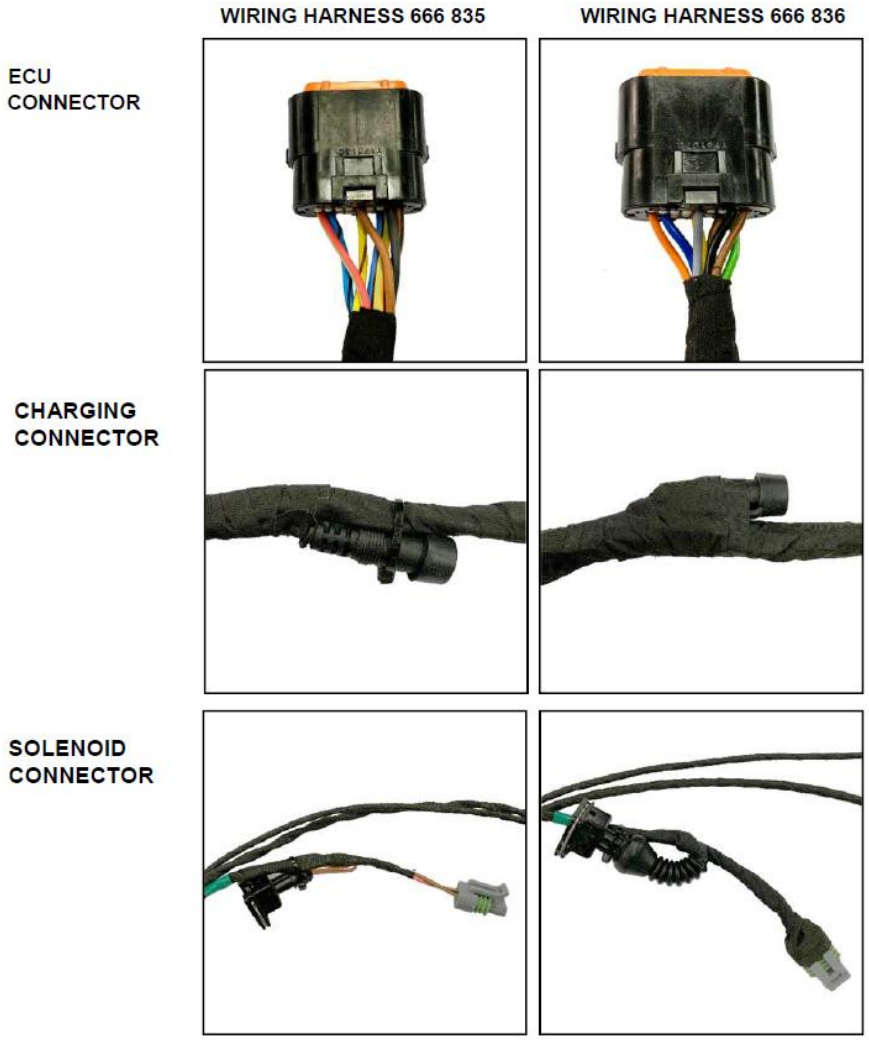
HOMOLOGATION OF KART ENGINE – VARIANT

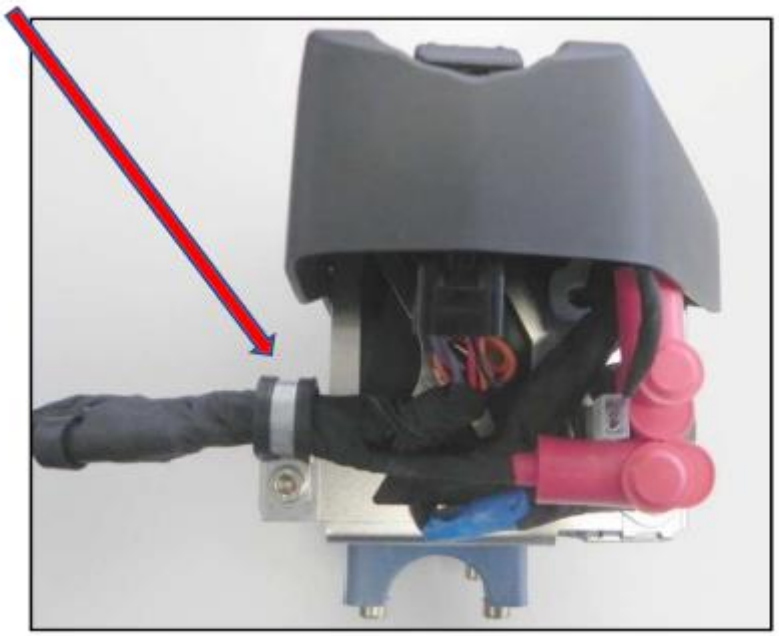
To be read in conjunction with Appendix 44 and Appendix 59

Category	**ALL ROTAX CLASSES**
Manufacturer	Bombardier Rotax
Model	FR125
UK Agent	JAG Engineering
Valid from	13 August 2020
Number of pages	2

ALTERNATIVE WIRING HARNESSES & BATTERY CLAMPS

13. Ignition Unit	**13.1**	*Unchanged.*
	…	*Unchanged.*
	13.11	*Unchanged.*
	13.12	Two variants of wiring harness are permitted, the older style (part no. **666 835**) and the newer style (part no. **666 836**) as detailed below:



	13.13	Wiring harness with part no. **666 835** may be used with battery clamp part no. **251 127** or **251 129**. Wiring harness with part no. **666 836** may only be used with battery clamp part no. **251 129**.
	13.14	Correct installation of wiring harness part no. **666 836** with battery clamp part no. **251 129** is shown below.  Additional parts needed for the installation: - Sheet nut M6 (part no. **242 141**) - Pipe clamp 15/M6 (part no. **851 492**) - M6 Allen screw

END

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