LAA TYPE ACCEPTANCE DATA SHEET
TADS E01
ROTAX 2-STROKE ENGINES

Issue 1	Initial issue	Dated 01/09/20	JP

This TADS is intended as a summary of available information about the engine type and should be used during the overhaul, operation and permit revalidation phases to help owners and inspectors. Although it is hoped that this document is as complete a summary as possible, other sources contain more complete information, e.g. the manufacturer's website.

Section 1 contains general information about the engine type and its variants.

Section 2 contains information about the engine type that the LAA considers mandatory and must be complied with.

Section 3 contains advisory information that owners and inspectors should review to help them maintain the engine in an airworthy condition. If due consideration and circumstances suggest that compliance with the requirements in this section can safely be deferred, is not required or not applicable, then this is a permitted judgement call. This section also provides a useful repository for advisory information gathered through defect reports and experience.

Section 1 - Introduction

1.1 UK distributor

Contact: CFS Aeroproducts Ltd

Address: Harris Road
Warwick
Warwickshire
CV34 5FY

Tel: 024 7630 5873
Email: http://www.cfsaero.com/rotax/
Website: rotax@cfsaero.com

Manufacturer contact information:

Address: BRP-Rotax GmbH & Co KG
Rotaxstrasse 1
4623 Gunskirchen
Austria

Tel: +43(0) 7246 6010
Website: https://www.flyrotax.com/home.html

1.2 Description

Rotax is the brand name for a range of engines designed and produced by the Austrian manufacturer BRP-Rotax GmbH & Co KG. The parent company is Bombardier Recreational Products. Rotax was originally founded in 1920 specialising in the development and manufacturing of innovative drive systems. In the last 50 years, they have developed in excess of 350 engine models. To date, over nine million engines have been manufactured by the company.

Rotax produces a number of different engine types for use in aircraft, in both 2-stroke twin cylinder 'inline' and 4-stroke four-cylinder 'boxer' format. Only part of Rotax's production is aircraft engines, they also make engines for small land and sea-based recreational vehicles as well as engines for various motorcycle manufacturers.

2-Stroke Engine Models

Model	Capacity and power output	Remarks
277	268cc 26hp @ 6100 rpm	Single-cylinder air-cooled (fan or free air cooled). May be fitted with A type gearbox. Production now discontinued.
377	368cc 35hp @ 6500 rpm	Twin-cylinder air-cooled (fan or free air cooled). Bosch contact breaker ignition. Rare twin carb 40hp version was also produced. Up to approximately 1989 can be fitted with A type gearbox. After this a new crankshaft and crankcase was used, which could be fitted with B type gearbox. Production now discontinued.
447 CB	436cc 40hp @ 6500 rpm	Twin-cylinder air-cooled (fan or free air cooled). Bosch contact breaker ignition. Rare twin carb 42hp version was also produced). Up to approximately 1989 can be fitted with A type gearbox. After this a new crankshaft and crankcase was used, which could be fitted with B type gearbox. Production now discontinued.
447 SCDI	436cc 40hp @ 6500 rpm	Twin-cylinder air-cooled (fan or free air-cooled). Ducati single electronic ignition. Other details as for 447 CB, except only produced with crankcase for B, C & E type gearbox. Production now discontinued.
503 CB	496cc 50hp @ 6500 rpm (twin carb) 46hp @ 6500 Rpm (single carb)	Twin-cylinder air-cooled (fan or free air cooled). Bosch contact breaker ignition. Up to approximately 1989 can only be fitted with A type gearbox. After this a new crankshaft and crankcase was used, allowing fitting of B, C & E type gearboxes. Production now discontinued.
503 DCDI	496cc 50hp @ 6500 rpm (twin carb) 46hp @ 6500 Rpm (single carb)	Twin-cylinder air-cooled (fan or free air cooled). Ducati dual capacitor discharge electronic ignition. Other details as for 503 CB. Production now discontinued.
462	462cc 52hp @ 6500 rpm.	Twin-cylinder liquid-cooled. Bosch contact breaker ignition. Some 'Low noise' versions were also sold using a special exhaust and giving 38hp @ 5500 rpm. Engine may be fitted with A type gearbox only. Production now discontinued.
532	521cc 64hp @ 6600 rpm (twin carb) 60hp @ 6500 rpm (single carb)	Twin-cylinder liquid-cooled. Bosch contact breaker ignition. Pre 1989 can only be fitted with A type gearbox. After this a new crankcase was used, allowing fitting of B type gearbox. Production now discontinued.
582	580cc 64hp @ 6500 rpm (582/48	Twin-cylinder liquid-cooled. Twin carburettors. Ducati dual capacitor discharge electronic ignition. Engine may be fitted with

	standard version) 53hp @ 6000 rpm (582/40 'low noise' version)	B, C & E type gearbox. Engine currently in production.
618	617cc 74hp @ 6750 rpm	Twin-cylinder liquid-cooled. Twin carburettors. Rotax Adjustable Variable Exhaust (RAVE) valves fitted. Ducati dual capacitor discharge electronic ignition. Engine may only be fitted with C or E type gearbox. Production now discontinued.

Section 2 Mandatory information for owners, operators and inspectors

At all times, responsibility for the maintenance and airworthiness of an aircraft rests with the owner. A condition stated on a Permit to Fly requires that: *"the aircraft shall be maintained in an airworthy condition".*

2.1 Lifed Items

LAA Technical Leaflet TL 2.23 Engine Overhaul Life and Operating 'On Condition' provides a large amount of information on dealing with engine life for engines installed in LAA administered aircraft.

For reference purposes, Rotax publishes the recommended Time Before Overhaul (TBO) limits for their engines in the applicable Maintenance Manual which can be downloaded from the Rotax website Technical Documentation section.

The Maintenance Manual and other technical documentation should be monitored for revisions to engine TBO and other lifed items.

2.2 Operator's manual

Operator's manuals for specific Rotax engines are available for free download from the Rotax website in the Technical Documentation.

2.3 Maintenance Schedule

Regular maintenance is the key to stress free flying. Rotax engines are generally fitted to LAA administered aircraft that are maintained either in accordance with the CAA Light Aircraft Maintenance Schedule (LAMS) CAP411 or the LAA Generic Maintenance Schedule, further details of which can be found in LAA Technical Leaflet TL 2.19. These maintenance schedules were originally written around the maintenance requirements of traditional aircraft engines rather than those produced by Rotax.

It is recommended that the applicable maintenance schedule found in the engine type's Rotax Maintenance Manual (Line Maintenance) is consulted when carrying out maintenance on a Rotax engine. Consult the Technical Documentation section of the Rotax website for the applicable Maintenance Manual (Line Maintenance).

Being a 2-stroke, these engines rely on scrupulous and frequent maintenance for reliability. Experience has shown that if kept in tip-top condition and maintained to plan, these engines are potentially reliable. However, neglect can lead to sudden engine failure without warning, unlike 4-stroke engines which generally tend to show signs of trouble through rough running

or reducing oil pressure, etc. Pilots new to 2-strokes should make themselves aware of important operating techniques and parameters, etc, by referring, for example, to Rotax service information.

Some aircraft have mandated maintenance requirements and/or schedules which are stated on the aircraft's Operating Limitations document and these must be followed.

More information on maintenance schedules can be found in the Aircraft Maintenance section of the LAA website.

2.4 Airworthiness Directives

There are no applicable Airworthiness Directives (ADs) for 2-stroke Rotax engines as they are not certified engines.

2.5 Mandatory Permit Directives

Up until 31 January 2012, when the publication ceased to be amended, CAP661 listed the Mandatory Permit Directives issued by the CAA.

The CAA now provides links to current MPDs on the CAA MPD Listing page of their website.

There are no Mandatory Permit Directives for 2-stroke Rotax engines but the LAA website should be checked for MPDs that are non-type specific (TL 2.22).

2.6 CAA Mandatory Requirements for Airworthiness CAP747 and Civil Aircraft Airworthiness Information and Procedures (CAAIP) CAP562

CAA publications CAP747 and CAP562 contain information that may be relevant to LAA administered aircraft and should be checked for applicability.

In particular, for older engines operating beyond the manufacturer's recommended life, Generic Requirement No 24: 'Light Aircraft Piston Engine Overhaul Periods' should be read alongside LAA Technical Leaflet TL 2.23: Engine Overhaul Life and Operating 'On Condition'. Generic Requirements can be found in CAP747: Section 2 'Mandatory Information'.

2.7 LAA Required Modifications (including LAA issued AILs, SBs, etc)

None currently issued.

2.8 Additional Engine Operating Limitations to be Placarded or Shown by Instrument Markings

Notes:

- Refer to the engine manufacturer's latest documentation for the definitive parameter values and recommended instruments.
- Where an instrument is not fitted, the limit need not be displayed.
- Data stated on the aircraft's Operating Limitations document must be displayed by means of cockpit placards or instrument markings.

Where the engine manufacturer's operating data shows an operating limitation then a means to monitor that parameter must be installed, except when otherwise agreed with LAA Engineering. It may be acceptable to install temporary instrumentation for the flight test programme.

A more restricted operating limitation may be imposed through an aircraft's Operating Limitations or Certificate of Clearance which will take precedence over any other limitation, e.g. if a particular propeller is not approved for an engine's maximum RPM.

Section 3 Advice to owners, operators and inspectors

3.1 General

Rotax provides a lot of Technical Documentation free of charge on the Rotax website.

3.2 Standard Options

There are no Standard Options for 2-stroke Rotax engines at this time.

3.3 Manufacturer's Information (including Service Bulletins, Service Letters, etc)

Rotax provides all of their Technical Documentation free of charge on the Rotax website.

Another good source of information is the Rotax-owner.com website. There is a facility on this non-factory website for subscribing to continuing airworthiness data that will be emailed free of charge to the subscriber.

In the absence of any over-riding LAA classification, inspections and modifications published in the manufacturer's continuing airworthiness data should be satisfied according to the recommendations therein. It is the owner's responsibility to be aware of and supply such information to their Inspector.

3.4 Special Inspection Points

1. Rotax Engine Installations

   A Rotax 2-Stroke Engine Installation Checklist must be completed and forwarded to LAA Engineering with all Rotax powered new-build aircraft paperwork submissions or for an aircraft that is being re-engined.

2. Rotax Engine Overhaul

   Owners should be aware that there is a potential for increased risk of failure of crankshafts that are operated beyond their manufacturer's recommended overhaul life, especially when the engine is installed in a heavy or 'draggy' aircraft, i.e. those that spend a high proportion of their life running at almost full throttle.

   Owners of LAA administered aircraft may elect, at their own discretion, to continue to use an engine beyond the engine manufacturer's recommended Time Before Overhaul (TBO). The extent of the inspection and checks required in order to be reasonably satisfied that an engine should be allowed to remain in service beyond the manufacturer's recommended TBO, depends on a number of factors, not least the known history of the engine and its planned usage.

   CAA Generic Requirement No 24 in CAP 747: Mandatory Requirements for Airworthiness covers the subject of Light Aircraft Piston Engine Overhaul Periods. Although this GR is primarily concerned with engines installed in aircraft holding a Certificate of Airworthiness, its inspection requirements do provide useful guidance as to what inspections and checks might be appropriate when considering the operation

of an engine beyond the manufacturer's recommended TBO on an LAA administered aircraft.

3. Who Can Overhaul a Rotax?

   Work carried out on Rotax engines that is outside permitted 'pilot maintenance' (LAA Technical Leaflet TL 2.05: Pilot Maintenance refers) must be checked and signed for by a suitably approved LAA inspector. Clearly any major engine work carried out by the owner would fall into this category. To check inspector suitability, refer to the inspector's card and current LAA Inspector Approval Scheme notes. When engines have been overhauled by a recognised Rotax engine overhaul workshop, then a LAA inspector may accept the engine on this basis, concentrating on checking and signing for the installation of the engine.

4. Noise Certificates

   A large proportion of the UK Rotax 2-stroke engine population is installed in aircraft that are in the microlight category. Aircraft in this category may have a CAA Noise Certificate and this certificate records the type details of the engine, propeller, inlet and exhaust muffler.

   The mandatory requirement for microlight aircraft to hold a valid noise certificate was cancelled by the CAA in 2019. Details can be found in CAA ORS 4 No 1313.

5. Rotax Engine Maximum RPM

   Apart from the de-tuned 'low noise' models and the high revving 'top of the range' Rotax 618, most Rotax 2-strokes have a rated maximum continuous rpm of 6500, which develops peak power. The 'never exceed' red line rpm is 6800. Depending on the installation, speed of aircraft etc, the aircraft's Operating Limitations may specify either of the above as the maximum permitted engine rpm.

6. Rotax Engine Propeller Strikes/Engine Shock Load Inspection

   Inspection procedures to be followed following a propeller strike are detailed in the applicable engine Maintenance Manual (Heavy) which can be downloaded from the Rotax website in the Technical Documentation section.

7. Carburettor Ice Protection

   Rotax 2-stroke engines are not immune to the effects of carburettor icing. Proprietary carburettor ice prevention kits are available for Rotax engines and their installation is recommended. Installation may be carried out without direct reference to LAA Engineering in accordance with LAA Standard Mod SM10671.

8. Engine Logbooks

   All maintenance and repair details regarding any Rotax engine installed in a LAA aircraft must be recorded in an appropriate engine logbook.

9. Unleaded Fuel & Fuel Flow Checks

   Rotax 2-stroke engines in LAA administered aircraft may be cleared for use with unleaded Mogas in accordance with the requirements detailed in the LAA Technical Leaflet TL 2.26: Procedures for Use of E5 Unleaded Mogas to EN228 and LAA/IC-ULM-Rotax 2-Stroke Inspection Checks.

   The LAA no longer advises an aircraft is approved to operate on Ethanol-free Mogas due to the vast majority of Mogas now containing 5% Ethanol.

10. Fuel Systems

Fuel system problems are the biggest cause of engine failures. Carefully check all aspects of an installation. A permanently installed fuel pressure gauge is highly recommended. It should be noted that PVC fuel hose (normally colourless or transparent) is not to be used for lines which continuously carry fuel. Urethane fuel hose should be satisfactory, but if in any doubt, the hose specification should be checked. On the engine side of the firewall the fuel hose should be fire resistant – reinforced synthetic rubber is normally used. Fire sleeving over the hose or metal braided fuel line is a good idea, and is essential if the hose runs close to the exhaust.

Installations with a high mounted engine and low fuel tank are particularly prone to problems – restrictions in the fuel line, and the slightest air leak on the suction side of the fuel pump, will reduce the efficiency of the fuel system, possibly causing fuel starvation and engine failure.

11. Propeller Balance & Matching

Vibration due to a propeller unbalance is the cause of many failures of bearings, exhausts, electrics etc. Even new propellers may be out of balance. Engine anti-vibration mounts may mask an unbalanced propeller. It is also very important that the propeller is correctly matched to the engine to prevent serious damage to the engine. A number of LAA inspectors offer a propeller dynamic balancing service.

12. Cooling System

Coolant radiator(s) should be isolated from engine vibration by soft anti-vibration mounts to prevent destruction of the delicate radiator structure by vibration. A coolant temperature gauge is essential, as excessive coolant temperature will quickly melt the engine water pump seals.

13. Carburettor Needles

A modification to prevent carburettor jet needles rotating with vibration and causing wear in the circlip grooves has been incorporated into new engines for a number of years. The modification comprised a new plastic cup and an O-ring which grips the needle. All new engines with type 54 carbs with code numbers 54/36/20xx and 54/36/21xx will already have the modification incorporated.

Many engines with the older type carbs (54/36/15xx and 54/36/16xx) delivered to customers after mid-1997 were converted before delivery. It is unlikely that any pre-mod carburettors remain in use but if the carb on an engine being inspected has a code number beginning with 54/36/15 or 54/36/16, then it is wise to check, and retrofit the modification kit if not already fitted, as this should prevent rotation and wear of the needle groove. Needles still need changing at the required intervals due to sliding wear on the outside diameter. Excessive wear in the circlip grooves leads to needle breakage and sudden power loss, which in one instance resulted in a fatal accident.

14. Potential Engine Post Storage Issues

Engines stored for a long period of time, whether new or used, may suffer from internal corrosion, the most critical of which is to crankshaft bearings. Corrosion can cause rapid and catastrophic failure of big end and main bearings in 2-stroke engines after very low operating hours, although the hours may be low enough for the owner not to realise the cause.

The sealing lips of oil and water pump seals may stick to the rotating shaft of long inactive engines, damaging the sealing lip when the engine is first turned, causing a

leak. A careful check for oil and coolant leaks should be carried out during the first operating hours of stored engines. On fan-cooled engines, check for corrosion on the fan belt pulleys, which can cause very rapid wear on the fan belt during the first few hours of operation causing engine overheating and consequent risk of seizure. Inspectors should consider requesting the owner of a long-stored engine to have it inspected by a Rotax expert.

15. High EGT Indications

During the first ground runs and flights particular attention should be paid to operating temperatures. High exhaust gas temperatures in particular indicate a problem that could cause catastrophic engine failure. EGTs must not exceed 650°C (1200°F).

Normally the highest temperature is recorded during cruise and when the throttle is slightly reduced and airspeed increased to cruise after a full power climb. Exhaust temperatures are normally slightly lower at full throttle.

16. Annual Permit to Fly Revalidation Inspections

a. Maintenance History

It is important to check that an engine has been maintained to a satisfactory standard. Ideally, maintenance should have been carried out according to a Rotax maintenance schedule but depending on the intensity and type of usage, some flexibility can be considered at the discretion of the inspector. Inspectors must use their engineering skill and judgement in determining the depth of inspection needed and other matters which could affect the airworthiness of the aircraft/engine.

All maintenance should be logged in a form that indicates exactly what has been done. It is not considered good practice to log, for example: '50 Hour service'; unless a separate worksheet is provided in the aircraft file detailing what maintenance tasks have been accomplished.

Any replacement parts should be of the correct type. Examples of incorrect components that have been fitted, causing problems or complete engine failures are:

i. Spark plugs with 'screw on' aluminium tops instead of fixed steel tops
ii. Incorrect pulse fuel pump types without the necessary bleed hole

b. Accident History

The most likely accident to an engine is a propeller strike. This should of course be logged and a shock load inspection should be carried out. A log entry of a new propeller, or new blades, may be a sign that a propeller strike has occurred, even if the propeller strike has not been recorded).

A propeller strike can result in engine damage including cracked gearbox casing, bent propeller shaft, bent or twisted crankshaft and cracked gears in the gearbox. Following a propeller strike the engine should be examined by a competent person before returning to service. Even a tiny bend in a propeller shaft, undetectable visually, can cause a catastrophic failure many operating hours after the incident.

c. Inspection of Engine Installation

The most useful guide to the engine inspection is a very thorough daily inspection and pre-flight check.

It is also useful to check the installation against a blank installation checklist. Some unsatisfactory aspects of the installation may have been missed previously, or the owner may have incorporated some modifications into the installation.

Experience has shown that the following items need to be looked at particularly carefully:

d. Fuel Systems

Thoroughly check connections for possible fuel and air leaks into the system. Check for fuel line deterioration. Check fuel filter(s) for contamination. Note: With 2-stroke engines a sludge can form in the fuel filter due to a combination of two stroke oil and water, causing a filter blockage which may not be visible even if the filter casing is transparent. Pay particular attention to carburettor rubber sockets, which can deteriorate and split due to ha variety of reasons including heat, vibration, ultra violet light, fuel and stress caused by unsupported intake silencers, etc. Because of the complexity and difficulty of a total inspection, an annual fuel flow test to demonstrate at least 125% flow @ 0.2 bar should be considered.

e. Carburettor Needles

See item 13 above. The O-ring modification is highly recommended if not previously complied with. On engines which have not been modified a careful inspection with a x10 magnifying glass should be carried out. Look for wear in the needle groove where the circlip sits. Both carbs of a twin carb installation should be carefully checked, as wear has been known to occur on only one carb of a pair.

f. Crankshafts

A small number of premature crankshaft failures have occurred over the years. These are mainly failures of connecting rod big end bearings to engines on heavy, high drag aircraft which require the engine to be working hard most of the time.

Internal corrosion of bearing surfaces can precipitate pitting and premature catastrophic crankshaft failure, so engines which are laid up for long periods of time are more prone to failure.

Frequent checking of the crankshaft bearing clearance using an appropriate device will give a useful guide as to the wear of conrod bearings but cannot always predict a failure due to pitting or fatigue. Inspectors should consider a check on infrequently used engines, heavily loaded engines and those with high crankshaft hours or dubious maintenance history.

g. Ignition Generator Coils

This only applies to the ignition generator coil on Rotax 2-stroke engines with contact breaker ignition. If the green and green/black wires from the low power lighting coil are shorted together or if this coil is used for providing power to anything other than a tachometer, it can cause the adjacent generator coil to run hotter with the possibility of an early failure. A failure of the generator coil will cause the engine to stop. Inspectors can check for correct use of the green wires and carry out a resistance check of the generator coil.

h. Loosening of Type A Gearboxes

Applies to all 462 engines and 377, 447, 503 and 532 engines prior to the introduction of the Type B gearbox in about 1989. During an inspection check for grey/black aluminium dust at the backplate/crankcase joint. Dust indicates loosening gearbox which could detach with catastrophic results if left, as bolts could shear off.

i. M4 Starter Motors

M4 starters were manufactured in the UK and were fitted to a range of 2-stroke Rotax engines. Due to their relatively large unsupported weight a number of cracks in engine crankcases and starter mounting brackets are known to have resulted. The prospect of

a heavy starter being released within the cowling and swinging about on its cable connection does not bear thinking about. The manufacturer of the starter published Service Bulletin M4/1 in 1996, requiring close inspection. Other manufacturers produced starter motors which seem to have not caused any issues but nevertheless owners and inspectors should be alert to the hazard potential.

j. Fan Belt Pulley Condition – Fatal Accident

Some years ago, an AAIB investigation into a fatal accident involving a Rans S6 determined that the Rotax 503 engine showed evidence of extensive overheating over a significant period of time. It was noted that the drive belt for the cooling fan was slack, imparting little or no torque to the fan.

Further examination revealed that the belt was excessively worn on its bevelled working surfaces. The flat surface on the inside of the belt was reduced to about half its normal width, and the maximum width of the belt (ie the surface visible on the outside of the installed belt) was reduced from 10 mm to approximately 8.2 mm. Both belt pulleys were found to be excessively corroded. It is known that roughness of the working surfaces of the pulleys, resulting from corrosion, causes rapid wear of the cooling fan belt.

Inspectors should be alert to the risk of corrosion developing in the fan belt pulley groove and causing engine failure through accelerated fan belt wear.

k. Rotax 618 Information

The following information concerns the Rotax 618 and is reproduced here with information from the type's Airworthiness Approval Note.

The Rotax 618 engine is a two-cylinder two-stroke rated at 75 BHP at 6750 rpm which was developed from the existing type 582, which develops 65 BHP at 6500 rpm. Capacity was increased to 617 cc and a stronger crankshaft and bearings fitted. The engine includes an oil injection system as standard, essentially the same as that previously offered as an option on the Rotax 582 engine. A new feature incorporated in the engine was an automatic variable exhaust valve which was intended to provide a more linear throttle response and increased low rpm torque by altering the effective exhaust port timing depending on the engine rpm. The engine also incorporates a thermostatically controlled coolant flow system in which the coolant bypasses the radiator until the coolant reaches normal operating temperature. This assures a low temperature gradient between the top and bottom ends of the cylinders during warm-up and minimises the risk of cold seizure occurring. The engine may be fitted with either the Rotax C type gearbox or the E type gearbox.

The engine was supplied as a complete package including integral radiators and oil tank and is virtually directly interchangeable with the Rotax 582 package, sharing identical mounting arrangements etc.

The same propeller and E type reduction gearbox was used as for the previous Rotax 582 installation. The weight increase of the engine installation was kept to 2 kg by removing the intake silencer and after-muffler on the 618 installation. Some installations utilised stiffer engine rubber vibration mounts.

3.5 Operational Issues

1. Stolen Rotax Engines

   Rotax publish a list of stolen 2-stroke engines (by serial number) in Service Letter SL-2ST-007. The current revision of this Service Letter can be found in the Technical Documentation section of their website.

2. *Safety Spot* references

   The following *Safety Spot* articles are relevant to Rotax 2-stroke engines:

Light Aviation issue	Subject
None currently indexed	n/a

3. Non-Aviation Fuel

   Rotax 2-stroke engines in LAA administered aircraft may be cleared for use with unleaded Mogas in accordance with the requirements detailed in the LAA Technical Leaflet TL 2.26: Procedures for Use of E5 Unleaded Mogas to EN228 and LAA/IC-ULM-Rotax 2-Stroke Inspection Checks.

   The LAA no longer advises approval for Ethanol-free Mogas due to the majority of Mogas including 5% Ethanol.

3.6 Standard Modifications

The following Standard Modifications have been approved on the type. The Standard Modification leaflet associated with each modification (published on the website) must be followed and an LAA/MOD 1 form completed and return to LAA Engineering in each case (see also LAA Technical Leaflet TL 3.06: Using an LAA Approved Standard Mod).

Standard Mod no.	Issue	Description
SM10671	1	Carburettor Heater for Rotax 2-Stroke Engines

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Please report any errors or omissions to LAA Engineering: engineering@laa.uk.com