

CIVIL AVIATION AUTHORITY

GYROPLANE TYPE APPROVAL DATA SHEET (TADS)

NO: BG 01 ISSUE: 12

TYPE: **RotorSport UK MT-03**

- (1) MANUFACTURER: RotorSport UK Ltd
Poplar Farm
Prolley Moor
Wentnor
Bishops Castle
SY9 5EJ
- (2) UK IMPORTER: N/A
- (3) CERTIFICATION: BCAR CAP 643 Section T Issue 3
- (4) DEFINITION OF BASIC STANDARD: RotorSport UK Ltd Product Definition Document PDD-002.
- (5) COMPLIANCE WITH THE GYROPLANE DEFINITION
- (a) MTOW 450 kg
500 kg (Mod MC-070/SB-013)
- (b) No. Seats 2
- (c) Permitted range of pilot weights
Front seat 60 – 125 kg.
Rear seat 120 kg max
Permitted total occupant weight: 180 kg (subject to fuel loading)
- (d) Typical Empty Weight (ZFW) 250 kg (912)
260 kg (914)
- (e) ZFW + 180 kg crew + 1 hr fuel
Rotax 912 – 19 litres / 13.4 kg 443.4 kg
Rotax 914 – 15 litres / 11kg 445 kg
- (f) ZFW + 90 kg pilot + full fuel
(70ltrs, 50.4kg)
Rotax 912 aircraft 390.4 kg
Rotax 914 aircraft 400.4 kg

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(g) Max ZFW at initial permit issue	MTOW 450kg
Rotax 912 aircraft	259 kg
Rotax 914 aircraft	265 kg

Modification MC-070; SB-013 fitted	MTOW 500kg
Rotax 912 aircraft	309 kg
Rotax 914 aircraft	315 kg

(6) POWER PLANTS

Designation	MT03	MT03
Engine Type	912 ULS	914 UL
Reduction Gear	2.43:1	2.43:1
Exhaust System	Rotax stainless steel with after muffler	Rotax stainless steel with after muffler
Intake System	Single intake filter, balance box & Skydrive carb heat system	Single intake filter, balance box
Propeller Type	HTC 3 blade ground adjustable, composite	HTC 3 blade ground adjustable, composite
Propeller Dia x Pitch	1.72m x 19.5° at 12" inwards from end of blade, with inclinometer against rear tail of aerofoil	1.72m x 20.5 ° at 12" inwards from end of blade, with inclinometer against rear tail of aerofoil
Noise Type Cert No.	None required	None required
AAN approving configuration	AAN29134 Addendum 2 (Autogyro rotor blades) Addendum 3 (corrected cg limits)	AAN29134 Addendum 1 (914UL engine) Addendum 2 (Autogyro rotor blades) Addendum 3 (corrected cg limits)
	AAN29134 Addendum 4 (500kg MTOW)	AAN29134 Addendum 4 (500kg MTOW)

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(J) Power Plant

Engine	912ULS	914 UL Turbo
Max RPM	5,800	5,800
Max Continuous RPM	5500	5000 (or 5500 if SB-013 incorporated)
MAX CHT <u>or</u>	135°C	135°C
MAX Coolant Temperature (if CT gauge fitted under Mod MC-321)	120°C	120°C
MAX EGT	N/A	N/A
Fuel Spec	As specified by BRP Rotax service instructions or Pilots Operating Handbook	As specified by BRP Rotax service instructions or Pilots Operating Handbook
Engine Oil Spec	As specified by BRP Rotax service instructions	As specified by BRP Rotax service instructions
Gearbox oil spec	Integral with engine	Integral with engine
Fuel/Oil Mix	N/A	N/A
Oil Pressure	Max: 7 bar Min: 0.8 bar (0-3500 rpm) 1.5 bar (above 3500 rpm) Normal range: 2-5 bar	Max: 7 bar Min: 0.8 bar (0-3500 rpm) 1.5 bar (above 3500 rpm) Normal range: 2-5 bar
Oil Temperature	Max: 130°C Min: 50°C	Max: 130°C Min: 50°C
Fuel Pressure	N/A	N/A

(9) INSTRUMENTS REQUIRED and units:

ASI: Fitted mph	Altimeter: Fitted Feet (mb sub-scale)	Rotor rpm: Fitted	Engine rpm: Fitted	Compass Fitted	VSI: Optional ft/min	CHT/EGT: CHT or CT (if fitted) °C
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(10) CONTROL DEFLECTIONS:

Rotor head: roll 16° total	Rotor Head: pitch 19° total	Rudder deflection: LEFT: 39° ± 5° RIGHT: 45° ± 5°
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(11) PILOT'S NOTES, MAINTENANCE MANUALS REFERENCES:

11.1 Manuals approved for use with this aircraft.

- (a) Pilots handbook (POH) approved for use with this aircraft is RSUK0011 issue 9 dated 12 September 2011.
- (b) Maintenance manual approved for use with this aircraft is RSUK0012 issue 7 dated 12 September 2011.
- (c) Maintenance schedules approved for use with this aircraft are:

- F076 Issue 6 – 25 hour inspection
- F138 issue 3 – 100 hour / annual inspection
- F146 Issue 2 – Short term storage and return to service worksheet
- F141 Issue 2 – Long term storage and return to service worksheet

11.2 The following placards are to be fitted:-

The following are to be placarded:

- a) Engine RPM limits (markings on instrument 'glass')
- b) Rotor rpm (markings on instrument 'glass')
- c) Loading conditions (placard on nacelle)
- d) Fuel quantity & type (placards on fuel tanks)
- e) All switches (engraved on instrument panel or placards)
- f) Occupant warning (placard on instrument. panel)
- g) Limitations as per Permit to Fly (placard on nacelle)
- h) Engine CHT limits (markings on instrument face)
- i) Compass deviation (placard adjacent to compass)
- j) Secondary control functions (placards)
- k) Permanent & fireproof attachment of aircraft registration no & aircraft serial no. (plate affixed inside near/on instrument panel)

See Appendix D for placards fitted as standard.

(12) MANDATORY MODIFICATIONS / SERVICE BULLETINS / AIRWORTHINESS DIRECTIVES ETC:

See Annex A for required modifications.

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(13) MINIMUM PERFORMANCE AT MAX TAKE-OFF WEIGHT

Minimum performance at max take-off weight:

700fpm at 60mph at 450 kg MTOW

500fpm at 60mph at 500 kg MTOW

Issue History

<u>Issue No.</u>	<u>Date.</u>	<u>Reason and signatory</u>
1	31/08/2007	Initial issue J Barratt
2	24 /11/2008	Correction to Rotax 914 engine designation, correction to CG limits and updated optional modification listing J Barratt
3	06/07/2009	Correction to engine limitations (CHT, oil temperature and oil pressure), correction to propeller pitch settings for the Rotax 914UL engine variant and updated modification listing. J Barratt
4	26/03/10	Updated to include reference to 500 kg MTOW upgrade (modification 070 / SB013) and updated modifications listing. J Barratt
5	16/07/10	The location of the aircraft registration markings has been clarified. The 12V auxiliary socket placard / engraved wording has been clarified under Appendix D. J Barratt
6	10/12/10	Correction to cg limits added under section 8B, clarification of the requirements for the rear seat ASI placard added under Appendix D and updated modifications listing added under Annex B. J Barratt
7	13/01/2011	Correction of unusable fuel under section 8I following discussion with Rotorsport.

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<u>Issue No.</u>	<u>Date.</u>	<u>Reason and signatory</u>
		J Barratt
8	23/02/2011	Update to section 11.1, Manuals approved for use with this aircraft.
		J Barratt
9	31/05/2011	Addition of limitation for gyroplane training under section 8H. Updated mods listing under Annex B.
		J Barratt
10	12/07/2011	Update to section 11.1b) Maintenance Manual and section 11.1c) 100 hour / Annual Inspection schedule approved for use with this aircraft.
		J Barratt
11	15/09/2011	Addition of Rotorsystem II option under section 7, update to section 11.1 manuals approved for use with this aircraft, update to Appendix B Optional Modifications and update to Appendix D Placards.
		J Barratt

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Illustration of Aircraft – Photographs



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ANNEX A – MANDATORY MODIFICATIONS

MC-084 MT-03 CG position (AAN 29134 Addendum 3 refers)
MC-099 Front seat washer change

ANNEX B - APPROVED OPTIONAL MODIFICATIONS

A list of approved minor modifications is available from the RotorSport website, www.rotorsport.org under support/aircraft compliance. Minor modifications applicable at release-to-service are listed on the aircraft Statement of Aircraft Conformity, SAC/MT-03/xxx.

ANNEX C - WEIGHING INFORMATION

N/A. Aircraft to be weighed by manufacturer.
Refer to specific aircraft weight and balance document, AWC/MT-03/xxx.

ANNEX D – STANDARD PLACARDS (copied from Pilots Handbook)

Note: some early examples of the aircraft may have slightly different wording

In conformity with BCAR Section T the following placards and markings are installed:

- All emergency controls are coloured red.
- All cockpit controls are clearly marked as to their function and method of operation.
- Fuel and oil filler openings are clearly marked, together with the grade or type required.
- Fuel tank capacity is clearly marked.
- Loading conditions are clearly marked as follows:
- Standard placards

Loading conditions

Aircraft Payload Specification Front seat; max occupant weight 125Kg max, 60Kg min Front seat occupant must carry ballast to meet 60Kg min. Rear seat occupant 120Kg max Empty weight (as measured) Kg Fuel load 0.72Kg/ltr MTOW 450Kg or 500kg (if Mod 070/SB013 embodied)

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For aircraft incorporating MC-184 only this placard is changed to:

Aircraft Payload Specification
Front seat pilot: 125Kg max, 60Kg
min
Reduced pro rata to 110Kg max
with up to 10Kg (max) of luggage
in the nose locker.
Pilot must carry ballast to meet
60Kg min.
Rear seat passenger 120Kg max
Empty weight (as measured) Kg
Fuel load 0.72Kg/ltr
MTOW xxxKg

Aircraft must only be flown solo
from the front seat.

Where xxxkg is either 450kg or 500kg (if SB-013 has been embodied)

Occupant warning

OCCUPANT WARNING
**This aircraft has not been certificated to an
International Requirement**

Primary control marking

BRAKE
↓
ENGAGE

MAX
↑
THROTTLE

CHOKE
↓
ON

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Limitations

OPERATING LIMITATIONS

Aerobatic Limitations

Intentional spinning is prohibited.

Aerobatic manoeuvres are prohibited.

Manoeuvres involving a deliberate reduction in normal 'g' shall be avoided.

CG Range Limits (Gyroplane) – refer to Pilots Handbook data.

Airspeed Limitations

Maximum Indicated Airspeed (Vne): 100mph

Other Limitations

This aircraft shall be flown by day and under Visual Flight Rules only.

Smoking in the aircraft is prohibited

Fuel gauge (where fitted with a push button)

Press before reading!

Auxiliary socket (where fitted):

placard wording:

12v DC
auxiliary
socket

or engraved with '12V/5A'

Rotor RPM gauge (gauge is marked internally as 'x100', but actually reads x10), only on gauges where the face says 'x100'.

X 10

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Coolant overflow bottle

On keel tube below instrument panel

**Coolant Header Tank.
Filled with Evans NPG+,
equivalent, or 50/50
water/antifreeze**

Pilot rudder pedal
position in this aircraft is
Long/middle/short

Fuel tanks (each)

**Side tank fuel
capacity:
35 ltrs
UNLEADED
PETROL
(AVGAS
permissible)**

Engine oil tank

Superseded by:

**Oil tank
Capacity 3 ltrs.
Use Shell VSX or
equivalent Motorcycle
oil SF or SG**

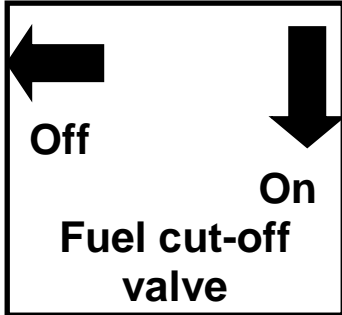
**OIL TANK CAPACITY
3 LTRS.
USE AEROSHELL OIL SPORT
PLUS 4 OR EQUIVALENT IN
ACCORDANCE WITH BRP ROTAX
SERVICE INSTRUCTIONS**

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Fuel cut-off valve

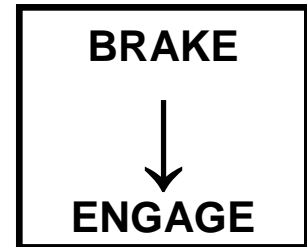
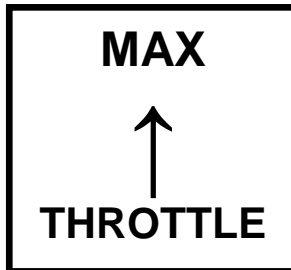
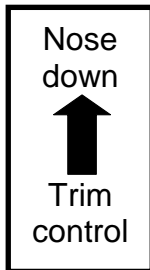
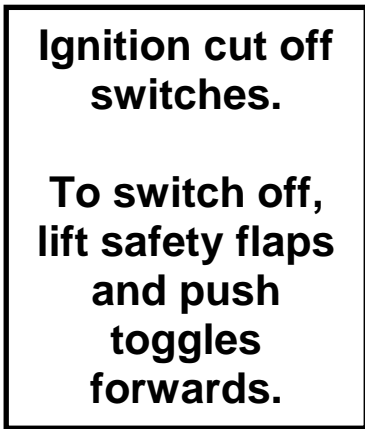


Interlock placard (until engraved on panel)

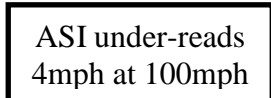


Instructor pack (where fitted)

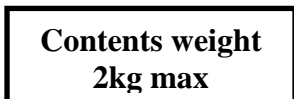
(worded 'pull toggles backwards' for packs after serial no. 002)



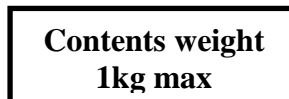
Note! Where a deviation exists between the front master and rear seat slave ASI's, it is permissible at initial build for Rotorsport UK Ltd. only to placard the rear seat ASI accordingly to show the error (front is assumed as the correct 'master'). Eg



Baggage placard for rear seat glove box



Baggage placard for side pockets (where fitted to either side of the rear of the front seat)



For nose luggage locker (where fitted):



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Low voltage placard mounted on instrument panel (where fitted):

Warning lamp placards (where fitted):

Continuously lit Low Voltage lamp indicates electrical demand exceeds supply, and the battery is being drained. If lit in flight, reduce demand until unlit. If flashing intensely, land asap.

Low Fuel

Low Voltage

Other

If the compass deviation is more than 5° on all headings, then a deviation placard must be present.

COMPASS DEVIATION
N S E W

To & including serial 005

COMPASS DEVIATION
For Set For Set For Set For Set
N S E W
Calibration date

From serial 005

Instrument placards as section 2.5

The aircraft is fitted with a permanently attached fireproof plate with the aircraft registration number and serial no. marked on it, on the keel or in front of the instrument panel.

The registration letters are placed high on the tail fin, or other location in accordance with CAP 523, and are 68cm long, 30cm high. This has been accepted to CAP523, the CAA standard for aircraft registration.

Note that all placards must have the same units of measure as the instruments.