

CIVIL AVIATION AUTHORITY  
GYROPLANE TYPE APPROVAL DATA SHEET (TADS)



**NO: BG03 ISSUE: 8**

- TYPE: Magni M16C
- (1) MANUFACTURER: The Gyroport  
Rufforth Airfield East  
Rufforth  
York  
YO23 3QA, UK
- (2) UK IMPORTER: N/A
- (3) CERTIFICATION : BCAR Section T Issue 3 (CAP 643)
- (4) DEFINITION OF BASIC STANDARD: M16C Type Design Build Standard 002-00-16C Issue E
- (5) COMPLIANCE WITH GYROPLANE DEFINITION:
- |    |  |                                  |
|----|--|----------------------------------|
| a) | MTOW   | 500kg                            |
| b) | No. Seats  | 2                                |
| c) | Permitted range of pilot weights                   |                                  |
|    | Front Seat   | 60-120 kg                        |
|    | Rear Seat  | 120 kg max                       |
|    | Permitted total Occupant Weight:                   | 215 kg (subject to fuel loading) |
| d) | Typical Empty Weight (ZFW)                         | 285 kg                           |
| e) | ZFW +180 kg crew + 1 hr fuel<br>(27 litres, 19 kg) | 484 kg                           |
| f) | ZFW + 90 kg crew + full fuel<br>(72ltrs, 52 kg)    | 427 kg                           |
| g) | Max ZFW at initial permit issue                    | 301 kg                           |



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- (E) Never Exceed Speed,  $V_{NE}$  100 mph
- (F) Minimum Speed 40 mph
- (G) Prohibited Manoeuvres: Aerobatic manoeuvres are prohibited. Intentional spinning is prohibited. Manoeuvres involving a deliberate reduction in normal 'g' shall be avoided. Flight into known icing conditions is prohibited (not placarded). Maximum crosswind 25 kts.
- (H) Other Limitations Day VMC only
- This Gyroplane is hereby granted a permission to fly for the purposes of aerial work which consists of the giving of instruction in flying or the conducting of flying tests subject to the installation of any required instructional modifications and the Gyroplane being owned or operated under arrangements entered into by a flying club of which the person giving the instruction or conducting the test and the person receiving the instruction or undergoing the test are both members.
- (I) Fuel Contents: 72 litres (69 litres useable)
- (J) Power Plant

Engine	Rotax 914UL
Max RPM	5800
Max Continuous RPM	5500
Max CHT	135°C
Max EGT	950°C
Fuel Spec	MOGAS or AVGAS
Engine Oil Spec	Motorcycle oil SF or SG or Shell VSX
Gearbox Oil Spec	Integral with Engine
Fuel/Oil Mixture	N/A
Coolant Temperature	N/A
Oil Pressure	Max: 7 bar Min: 1.5 bar Normal operating 2 – 5 bar
Oil Temperature	Max: 130°C Min: 50°C
Fuel Pressure	N/A

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(9) INSTRUMENTS REQUIRED:

ASI: Fitted	Altimeter: Fitted	Rotor RPM: Fitted	Engine RPM: Fitted	Compass: Fitted	VSI: Optional	CHT: Fitted
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(10) CONTROL DEFLECTIONS:

Rotor Head – Roll: 16° Total	Rotor Head – Pitch: 19° Total	Rudder Deflection: Left: 40°±5° Total Right: 45°±5° Total
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(11) PILOTS NOTES, MAINTENANCE MANUALS REFERENCES:

11.1 Manuals approved for use with this aircraft:

- (a) Flight Manual 025-00-16C Issue F.  
Supplement: Baggage Pod Installation  
Supplement: Strobe & Position Lights Installation  
Supplement: Forward Baggage Pod Installations
- (b) Maintenance Manual 026-00-16C Issue B.
- (c) Maintenance Schedule 045-00-16C Issue I.

11.2 The following placards are to be fitted:

- (a) Engine RPM limits
- (b) Rotor RPM
- (c) Loading conditions (placard on instrument panel)
- (d) Fuel quantity & type (placard next to fuel filler)
- (e) All switches (engraved on switch or placard next to switch)
- (f) Occupant warning (placard on instrument panel)
- (g) Limitations as per Permit to Fly (placard on instrument panel)
- (h) Engine CHT limits (markings on instrument panel)
- (i) Compass deviation (placard next to compass)
- (j) Secondary control functions (placards)
- (k) Permanent & fireproof attachment of aircraft registration no. & aircraft serial no. (plate affixed on starboard side of the keel tube below the front control stick.)

See Appendix D for placards fitted as standard.

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

Rotax SB-914-047UL Change of measurement method from cylinder head

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temperature to coolant temperature for Rotax® Engine Type 912 and 914 (Series)  
See Appendix A for required modifications.

(13) MINIMUM PERFORMANCE AT MAX TAKE-OFF WEIGHT:

Minimum performance at max take-off weight: 625 fpm at 60 mph

**Issue History**

<u>Issue No.</u>	<u>Date</u>	<u>Reason and Signatory</u>
1	21/05/2009	Initial Issue  J Barratt
2	13/11/2009	Mandatory and optional modifications added under Appendices A & B.  J Barratt
3	29/06/2010	Updated Type Design Build Standard included under section 4, rear seat minimum weight corrected under section 8D, mandatory and optional modifications listings updated under Appendices A & B and occupant warning placard (front seat) and rotor limits placard added.  J Barratt
4	16/07/2010	Section 6 Propeller designation corrected. Section 9 Required Instruments corrected to show the VSI as optional.  J Barratt
5	13/01/2011	Reference to approved maintenance schedule added under section 11.1c). Approved issue status of manuals included under section 11.1. Modification Listing under Appendix B updated.  J Barratt

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6	19/05/2011	Addition of limitation for gyroplane training under section 8H. Updated modifications listing under Appendix B.  J Barratt
7	01/08/2011	Maintenance Manual and Maintenance Schedule updated under sections 11.1b) and 11.1c).  J Barratt
8	23/06/2015	Manufacturer address. Flight Manual and Maintenance Schedule Issue. Flight Manual supplements. Service Bulletins list. Optional Modification list. Pilot Checklist placard.

  
A Carter



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Illustration of Aircraft – Photographs



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**APPENDIX A – MANDATORY MODIFICATIONS**

<b>Modification Reference</b>	<b>Description</b>
MOD 016	Replacement Bolts (included in Type Design Build Standard 002-00-16C issue E)
MOD 019	Fuel Line Replacement (included in Type Design Build Standard 002-00-16C issue E)

**APPENDIX B – APPROVED OPTIONAL MODIFICATIONS**

<b>Modification Reference</b>	<b>Description</b>	<b>Flight Manual Supplement</b>
MOD 002	Lynx VHF Antenna	
MOD 003	Funkwerk ATR500 Radio	025-00-16C/003
MOD 004	Garmin 296 & RAM Mount	
MOD 005	SAF Oil Drain	
MOD 006	MicroAir M760 Radio	025-00-16C/003
MOD 007	Trig TT21 Transponder	025-00-16C/003
MOD 008	AirGizmo Mount	
MOD 009	Baggage Pod	025-00-16C/001
MOD 010	Map Pocket	
MOD 011	Strobe & Positioning Lights	025-00-16C/002
MOD 012	Intercom	025-00-16C/003
MOD 014	12V Power Socket	025-00-16C/003
MOD 017	Instructors Pack	
MOD 022	Switch Guards	
MOD 027	Cable Guide	
MOD 028	Fwd starboard baggage pod	025-00-16C/004
MOD 029	Forward port baggage pod	025-00-16C/004
MOD 030	Carbon fuselage	
MOD 031	Spinner	
MOD 032	Semperit fuel lines	
MOD 034	TCU repositioning	
MOD 035	Instructors Pack	
MOD 037	Funkwerk ATR833 radio	
MOD 061	Beringer braking system and wheels	
MOD 065	Modification of the controls line	
MOD 071	MGL Avionics ASX-2 altimeter and airspeed indicator	
MOD 072	Trig TY91 VHF radio installation	
MOD 073	Strobe navigation & position lights installation	

**APPENDIX C – WEIGHING INFORMATION**

N/A Aircraft to be weighed by manufacturer.



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APPENDIX D – STANDARD PLACARDS

(Copied from Flight Manual)

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

- a. All cockpit controls are clearly marked as to their function and method of operation.
- b. Fuel and oil filler openings are clearly marked, together with the grade or type required. Fuel tank capacity is also clearly marked:



***M-16 C Tandem Trainer***  
***Max Usable Fuel: 69lt***  
***Minimum Grade of Fuel to be Used :***  
***MON 85 RON 95 UNLEADED FUEL***  
***for 100L AVGAS use check Rotax Manual***



***M-16 C Tandem Trainer***  
***Oil used in this aircraft:***  
***Shell ADVANCE VSX***  
***4T 15W – 50 Synthetic based***  
***API SG JASO MA***

- c. Loading conditions are clearly marked.



***M-16 C TANDEM TRAINER***

Max Indicated Airspeed (Vne) .....100mph	Mauw.....500 Kg
Min speed for power-on flight.....40mph	Max cockpit loading (including fuel).....215 Kg
Empty Weight.....285 Kg	Min solo pilot weight.....60 Kg
	CG Limits.....(refer to flight manual)

***AEROBATIC MANOEUVERS ARE PROHIBITED. MANOEUVERS INVOLVING DELIBERATE REDUCTION IN NORMAL "G" SHALL BE AVOIDED. THE AIRCRAFT SHALL BE FLOWN BY DAY VMC ONLY.***

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d. Engine limitations are clearly marked:



***M-16 C Tandem Trainer***

**Engine Parameters**

	<b>Min</b>	<b>Norm</b>	<b>Max</b>
<b>Temperature (°C)</b>			
<b>OIL</b>	50	90-110	130
<b>CHT</b>	50	90-110	135
<b>EGT</b>		750-850	950
<b>Oil Press (0,1 x bar)</b>			
	15	20-50	70
<b>Max Engine RPM.....</b>			<b>5800</b>
<b>Max Continuous RPM...5500</b>			

e. Other placards fitted:

Occupant warning (front seat):



**AEROBATIC MANOEUVRES  
ARE PROHIBITED.  
MANOEUVRES INVOLVING  
DELIBERATE REDUCTION IN  
NORMAL "G" SHALL BE  
AVOIDED.  
OCCUPANT WARNING:  
THIS GYROPLANE HAS NOT  
BEEN CERTIFIED TO AN  
INTERNATIONAL  
REQUIREMENT.  
THE AIRCRAFT SHALL BE  
FLOWN BY DAY VMC ONLY.  
SMOKING ON BOARD THIS  
AIRCRAFT IS PROHIBITED.**

Occupant warning (rear seat):



***M-16 C Tandem Trainer***

**OCCUPANT WARNING  
This Gyroplane has  
not been certified to  
an international  
requirement.  
Smoking is prohibited  
on board this aircraft.**

Additional placards on the front instrument panel:

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**ROTOR LIMITS**

**Min RPM for Take Off.....150**  
**Max RPM.....550**

- |  |     |
|--|-----|
| <b><u>START-UP</u></b>                                     | M16 |
| 1- CHECK STICK RETAINER IS APPLIED                         |     |
| 2- HELMET/SEAT BELTS: FASTENED                             |     |
| 3- CONTROL STICK: FORWARD                                  |     |
| 4- BREAKERS: ON  |     |
| 5- THROTTLE: IDLE POSITION                                 |     |
| 6- CHOKE: ON (if the engine is cold!)                      |     |
| 7- MASTER: ON  |     |
| 8- KEY: BOTH   |     |
| 9- TEST AUX PUMP: ON/ OFF                                  |     |
| 10- MAIN PUMP: ON  |     |
| 11- SHOUT: "CLEAR PROPI"                                   |     |
| 12- HOLD BRAKES ON   |     |
| 13- STARTER  |     |
| 14- CHOKE: OFF   |     |
| 15- START TAXIING: TEST BRAKES                             |     |
| <b><u>BEFORE TAKE-OFF</u></b>                              |     |
| 1- CHOKE: OFF  |     |
| 2- BREAKERS: ON  |     |
| 3- MASTER: ON  |     |
| 4- HOLD BRAKES   |     |
| 5- TEST MAGNETOS   |     |
| 6- KEY: BOTH   |     |
| 7- PUMPS: ON   |     |
| 8- LIGHT: ON   |     |
| 9- MINIMUM TEMPERATURES: OK                                |     |
| 10- TRIM : OFF (green light)                               |     |
| 11- HELMET/ SEAT BELTS: FASTENED                           |     |
| 12- SET ALTIMETER  |     |
| 13- ROTOR BRAKE: OFF                                       |     |
| 14- PARKING BRAKE: ON                                      |     |
| 15- REMOVE STICK RETAINER AND HOLD<br>STICK FULLY FORWARDS |     |
| 16- RELEASE PARKING BRAKE                                  |     |