

CIVIL AVIATION AUTHORITY – SAFETY REGULATION GROUP
GYROPLANE TYPE APPROVAL DATA SHEET (TADS)



NO: BG05 ISSUE: 4

- TYPE: Magni M24 C
- (1) MANUFACTURER: Magni Gyro UK Ltd
Healings Farm
Waddington
Clitheroe
Lancs
BB7 3JE
- (2) UK IMPORTER: N/A
- (3) CERTIFICATION : BCAR Section T Issue 3 (CAP 643)
(See AAN 29276 for Special Conditions)
- (4) DEFINITION OF BASIC STANDARD: M24C Type Design Build Standard
002-00-24C – Issue E
- (5) COMPLIANCE WITH GYROPLANE DEFINITION:
- | | |
|--------------------------------------|----------------------------------|
| (A) MTOW | 500kg |
| (B) No. Seats | 2 |
| (C) Permitted range of pilot weights | |
| Left Seat | 60-120 kg |
| Right Seat | 120 kg max |
| Permitted total Occupant Weight: | 203 kg (subject to fuel loading) |
| (D) Typical Empty Weight (ZFW) | 297 kg |
| (E) ZFW +180 kg crew + 1 hr fuel | 496 kg (27 litres, 19 kg) |
| (F) ZFW + 90 kg crew + full fuel | 449 kg (82ltrs, 62 kg) |
| (G) Max ZFW at initial permit issue | 301 kg |

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(6) POWER PLANTS

Designation	M24C
Engine Type	Rotax 914 UL
Reduction Gear	2.37:1
Exhaust System	Rotax stainless steel with after muffler
Intake System	Single intake filter and balance box
Propeller Type	ARPLAST ECO GL170/3 ground adjustable composite propeller
Propeller Dia x Pitch	1.70m x 12° at 45" inwards from end of blade, with inclinometer against rear tail of aerofoil
Noise Type Cert No.	None Required
AAN Approving Configuration	AAN 29276

(7) ROTOR SYSTEM

Rotor system description	Single two blade fixed pitch teetering rotor of 28ft diameter.
AAN approving rotor system	AAN 29276

(8) MANDATORY LIMITATIONS:

- (A) MTOW 500kg
- (B) CG Limits
 Horizontal CG Fwd: 1780 mm aft of datum
 Aft: 1939 mm aft of datum
 Vertical CG Upper: 1097mm above datum
 Lower: 954 mm above datum
- (C) CG Datum:
 Horizontal cg: Fuselage Nose
 Vertical cg: Ground
- (D) Cockpit Loadings
 Left Seat Min 60 kg
 Max 120 kg
 Right Seat Min 0 kg
 Max 120 kg
 Total Max 203 kg
- (E) Never Exceed Speed, V_{NE} 100 mph

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- (F) Minimum Speed 30 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: 82 litres (78.5 litres useable)
- (J) Power Plant

Engine	Rotax 914 UL
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
Manifold pressure (take off)	39.9 inches HG
Manifold pressure (max continuous)	35.4 inches HG

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(9) INSTRUMENTS REQUIRED:

ASI: Fitted	Altimeter: Fitted	Rotor RPM: Fitted	Engine RPM: Fitted	Compass: Fitted	VSI: Optional	CHT: Fitted	MAP: 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 025-00-24C Issue E. See Appendix B for Flight Manual Supplements applicable to Optional Modifications.
- (b) Maintenance Manual 026-00-24C Issue C.
- (c) Maintenance Schedule 045-00-24C Issue E.

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)

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- (i) Compass deviation (placard on instrument panel below compass)
- (j) Secondary control functions (placards)
- (k) Permanent & fireproof attachment of aircraft registration no. & aircraft serial no. (plate affixed on starboard side of the forward keel tube)

See Appendix D for placards fitted as standard.

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

MPD 2011-001 Rudder Pedal Mounting Block (applicable to 9 aircraft)

See Appendix A for required modifications.

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

Minimum performance at max take-off weight: 625 fpm at 65 mph

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Issue History

<u>Issue No.</u>	<u>Date</u>	<u>Reason and Signatory</u>
1	04/10/2010	Initial Issue J Barratt
2	04/03/2011	Updated Type Design Build Standard report under section 4, reference to MPD 2011-001 under section 12 and updated modifications listing under Appendices A and B. J Barratt
3	19/05/2011	Addition of limitation for gyroplane training under section 8H. Section 11.1a) Flight Manual status updated. J Barratt
4	01/08/2011	Maintenance Manual and Maintenance Schedule updated under sections 11.1b) and 11.1c).



J Barratt

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Illustration of Aircraft – Photographs



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APPENDIX A – MANDATORY MODIFICATIONS

Modification Reference	Description
MOD 039	Rudder pedal mounting block (included in Type Design Build Standard 002-00-24C issue E)

APPENDIX B – APPROVED OPTIONAL MODIFICATIONS

Modification Reference	Description	Flight Manual Supplement
MOD 023	Dual 12V sockets	
MOD 024	Heater	

APPENDIX C – WEIGHING INFORMATION

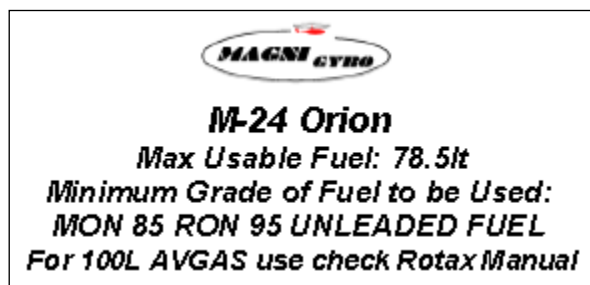
N/A Aircraft to be weighed by manufacturer.

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.
- c. Fuel tank capacity is also clearly marked:



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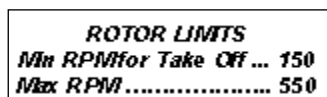
d. Loading conditions are clearly marked:



e. Engine limitations are clearly marked:

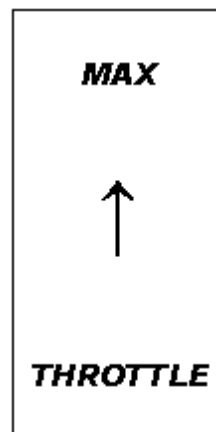
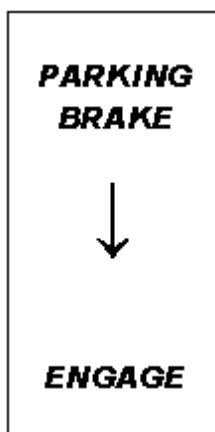
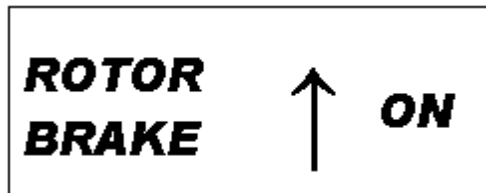
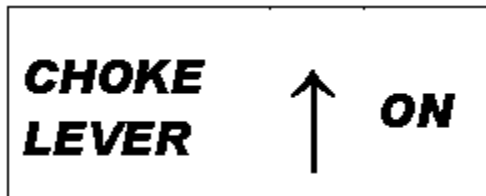
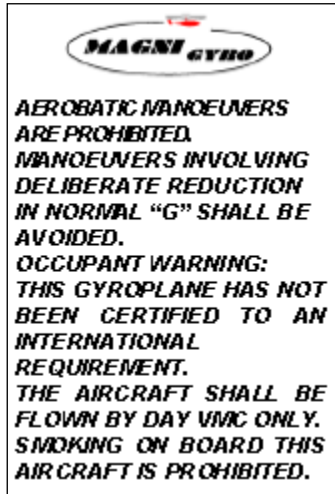
Engine Parameters			
	Min	Norm	Max
Temperature (°C)			
OIL	50	90-110	130
CHT	50	90-110	135
EGT		750-850	950
Oil Press (0,1 x bar)			
	15	20-50	70
Max Engine RPM.....	5800		
Max continuous RPM.....	5500		
Max MAP (5 mins).....	39.9 inHg		
Max MAP (c ontinuous).....	35.4 inHg		

f. Other placards fitted:



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Compass Correction Card

FOR	N	30	60	E	120	150
STEER						
FOR	S	210	240	W	300	330
STEER						
DATE						

Baggage Bay – Located beneath co-pilot seat cushion)

**COMPARTMENT NOT TO BE USED FOR
STOWAGE UNLESS BAGGAGE BAY LINER
IS INSTALLED**

Pilot Checklist

<u>START-UP</u>
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 PROP"
12 – HOLD BRAKES ON
13 – STARTER
14 – CHOKE: OFF
15 – START TAXIING: TEST BRAKES
<u>BEFORE TAKE-OFF</u>
1 – CHOKE: OFF
2 – BREAKERS: ON
3 – MASTER: ON
4 – HOLD BRAKES ON
5 – TEST MAGNETOS
6 – KEY: BOTH
7 – PUMPS: ON
8 – LIGHT: ON
9 – TEST FUEL WARNING LIGHT
10 – MINIMUM TEMPERATURES: OK
11 – TRIM: OFF (green light)
12 – HELMET/SEAT-BELTS: FASTENED
13 – SET ALTIMETER
14 – ROTOR BRAKE: OFF
15 – PARKING BRAKE: ON
16 – REMOVE STICK RETAINER AND HOLD STICK FULLY FORWARDS
17 – RELEASE PARKING BRAKE

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Auxiliary Power Sockets (where fitted)

**IN THE EVENT OF ENGINE GENERATOR
FAILURE ALL EQUIPMENT POWERED VIA
THE 12v SOCKETS MUST BE TURNED OFF**

**POWER SOCKET
SUPPLY**

OUTPUT VOLTAGE 12V
OUTPUT CURRENT 6 AMP

Baggage Bay (When liner fitted) – Located beneath co-pilot seat cushion

**BAGAGGE BAY
LOAD LIMITATIONS**

MAXIMUM LOAD CAPACITY 10kg

Strobe/Positioning Lights (If fitted)

WARNING

TURN OFF STROBE LIGHTS WHEN IN THE VICINITY OF OTHER AIRCRAFT
OR PERSONS ON THE GROUND.

THE STROBE LIGHTS MUST ALSO BE TURNED OFF PRIOR TO THE
LANDING PHASE AND PRIOR TO ACTIVATION THE LANDING LIGHT.