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# TYPE-CERTIFICATE

## DATA SHEET

NO. EASA.A.039

for  
**MDM-1 "Fox"**

Type Certificate Holder  
**Secint Air Support Poland sp. z o.o.**

CEGIELNIANA STR. 4A/15  
30-404 KRAKÓW PL Malopolskie

For models:   MDM-1 "Fox"  
                  MDM-1P "Fox-P"

The Type Certificate EASA.A.038 has been issued by EASA in accordance with Regulation (EU) No 2018/1139, in particular Article 77 1 (e) thereof and Regulation (EU) No 748/2012 Annex 1b.



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## **Section A: MDM-1 "Fox"**

### **A.I. General**

1. a) Type: MDM-1 "Fox"  
b) Model: MDM-1 "Fox"
2. Airworthiness Category: Sailplane, Aerobatic
3. Certification process: Regulation (EU) No 748/2012 – Annex Ib
4. Manufacturer: for S/N P-11, P-13÷P-16, 201÷235 :  
Zakład Remontów i Produkcji Sprzętu Lotniczego  
Edward Margański  
ul. Cieszyńska 321  
43-300 Bielsko-Biała  
POLAND  
  
S/N 236, and up:  
ZAKŁADY LOTNICZE  
Margański & Mysłowski  
Sp. z o.o.  
ul. Strażacka 60  
43-300 Bielsko-Biała  
POLAND
5. Certification Date 27 July 1994
6. This TCDS replaces the Polish TC/TCDS No. BG-197.

### **A.II. Certification Basis**

1. Certification Basis: Defined 13 February 1985
2. Airworthiness Requirements: JAR-22 Change 4, issued on 7 May 1987
3. Requirements elected to comply: None
4. Special Conditions: None
5. Exemptions:
  1. Stall speed with two person crew exceeds 80 km/h (JAR 22.49)
  2. Airbrakes closing force exceeds 20 daN (JAR 22.143)
6. Equivalent Safety Findings: None



### **A.III. Technical Characteristics and Operational Limitations**

1. Type Design Definition: List of drawings, January 19<sup>th</sup> 1998
2. Description: Two-seat (tandem configuration) aerobatic and trainer glider.  
Cantilever mid-wing monoplane with conventional tail unit (fixed stabilizer with elevator, fin and rudder).  
All composite glass-epoxy structure. Bipartite tapered wing with Schempp-Hirth airbrakes protruding only from upper surface.  
Fixed landing gear - main wheel with disk brake and tail wheel.
3. Equipment: Minimum equipment:
  - airspeed indicator,
  - altimeter,
  - accelerometer,
  - 5-points pilot harness,
  - parachute or back cushion (8 cm thick) for each crew member.Standard equipment (besides minimum equipment):
  - variometer with compensator,
  - pressure compensation vessel,
  - bank indicator,
  - compass,
  - seat cushion.
4. Dimensions:

Span	14,00 m
Wing area	12,34 m <sup>2</sup>
Aspect Ratio	15,88
Length	7,38 m
Height	2,25 m
5. Launching Hook:

Nose towing hook	TOST E 85 or SZD-III A56 P
CG towing hook (optional)	TOST Europa G 88
6. Weak links: Ultimate Strength: 677 daN ( $\pm 10\%$ )
7. Air Speeds:

Manoeuvring Speed	V <sub>A</sub>	214 km/h
Never Exceed Speed	V <sub>NE</sub>	282 km/h
Maximum permitted speeds		
- in rough air	V <sub>RA</sub>	225 km/h
- in aero-tow	V <sub>T</sub>	150 km/h
- in winch launching	V <sub>W</sub>	150 km/h
8. Operational Capability: VFR Day only
9. Launch methods: Aero tow  
Winch launch
10. Masses:

Max. Mass	530 kg
Max. Empty Mass (without balance mass)	350 kg



11. Centre of Gravity Range: Empty glider with standard equipment:  
Forward Limit 620 mm aft of datum point  
Rearward Limit 645 mm aft of datum point  
Centre of Gravity operational limits:  
Forward Limit 213 mm aft of datum point (22,0% MAC)  
Rearward Limit 379 mm aft of datum point (39,0% MAC)  
MAC is 971 mm; 0% MAC is 2,1 mm aft of datum.  
Datum: Leading edge and wing-fuselage division plane intersection.  
Levelling means: Leading and trailing points of root chord (1308 mm) at the same level.
12. Seating Capacity: 2
13. Lifetime limitations: Refer to Maintenance Manual
14. Other limitations: Solo flight is permissible only on front seat.  
Cross-country flight (gliding or towed) only with one person crew.  
No baggage permitted.  
The following kinds of operation are forbidden:  
- auto-towing,  
- flights in icing conditions,  
- night flying,  
- cloud flying without turn-and-bank indicator,  
- aerobatic in rough air.  
Manoeuvring load factor limits:  
two person crew +7,0/-5,0  
one person (no more than 100 kg incl. parachute) +9,0/-6,0
15. Deflection of control surfaces:
- |           |         |     |             |
|-----------|---------|-----|-------------|
| Aileron:  | - up    | 22° | ± 1°        |
|           | - down  | 17° | ± 1°        |
| Elevator: | - up    | 25° | ± 1°        |
|           | - down  | 25° | ± 1°        |
| Rudder:   | - left  | 30° | + 1° / - 2° |
|           | - right | 30° | + 1° / - 2° |



## **A.IV. Operating and Service Instructions**

### 1. Flight Manuals:

- Polish: Instrukcja Użytkowania w Locie Szybowca MDM-1 „Fox”, wydanie III, Październik 1996
- Polish: Instrukcja Użytkowania w Locie Szybowców MDM-1 „Fox” oraz MDM-1P „Fox P” ,, wydanie IV, Grudzień 1998
- English: Flight Manual MDM-1 „Fox” issue III, October 1996
- English: Flight Manual MDM-1 „Fox”, MDM-1P „Fox P”, issue IV, December 1998
- German: Flughandbuch MDM-1 „Fox” Ausg. III, Oktober 1996, LBA-anerkannt

### 2. Maintenance Manual:

- Polish: Opis Techniczny, Instrukcja Obsługi Technicznej, Prace Okresowe, Szybowca MDM-1 „Fox”, wydanie III, Grudzień 1996
- English: Technical Service Manual, Periodic Works, MDM-1 „Fox” issue III, December 1996
- German: Wartungshandbuch MDM-1 „Fox” Ausg. III, Dezember 1996

## **A.V. Notes**

1. Serial Numbers:  
P-11, P-13, P-14, P-15, P-16,  
201, and up
2. All glider outside surfaces must be white painted.  
No registration number or any colour marks on the wings and stabilizer upper surfaces are allowed.



## **Section B: MDM-1P "FOX-P"**

### **B.I. General**

1. a) Type: MDM-1 "Fox"  
b) Variant: MDM-1P "Fox-P"
2. Airworthiness Category: Sailplane, Aerobatic or Utility
3. Certification process: Regulation (EU) No 748/2012 – Annex Ib
5. Manufacturer: for S/N P-13, P-14, P-15, P-16, 201÷235 :  
Zakład Remontów i Produkcji Sprzętu Lotniczego  
Edward Margański  
ul. Cieszyńska 321  
43-300 Bielsko-Biała  
POLAND  
  
from S/N 236 :  
ZAKŁADY LOTNICZE  
Margański & Mysłowski  
Sp. z o.o.  
ul. Strażacka 60  
43-300 Bielsko-Biała  
POLAND
6. Certification Date: 12 January 1999
7. This TCDS replaces the Polish TC/TCDS No. BG-197.

### **B.II. Certification Basis**

1. Certification Basis:
2. Airworthiness Requirements: JAR-22 Change 4, issued on May 7<sup>th</sup> 1987
3. Requirements elected to comply: None
4. Special Conditions: None
5. Exemptions:
  1. Stall speed in aerobatic version and with two person crew exceeds 80 km/h (JAR 22.49)
  2. Airbrakes closing force exceeds 20 daN (JAR 22.143)
6. Equivalent Safety Findings: None



### **B.III. Technical Characteristics and Operational Limitations**

1. Type Design Definition: List of drawings:  
MDM-1 Fox issue January 19<sup>th</sup> 1998  
MDM-1P Fox-P issue March 1998
2. Description: Two-seat (tandem configuration) aerobatic and trainer glider.  
Cantilever mid-wing monoplane with conventional tail unit (fixed stabilizer with elevator, fin and rudder).  
All composite glass-epoxy structure.  
Bipartite tapered wing with Schempp-Hirth airbrakes protruding only from upper surface. Exchangeable wingtips - short for Aerobatic and long for Utility version.  
Fixed landing gear - main wheel with disk brake and tail wheel.
3. Equipment: Minimum equipment:  
- airspeed indicator,  
- altimeter,  
- accelerometer,  
- 5-points pilot harness,  
- parachute or back cushion (8 cm thick) for each crew member.  
Standard equipment (besides minimum equipment):  
- variometer with compensator,  
- pressure compensation vessel,  
- bank indicator,  
- compass,  
- seat cushion.
4. Dimensions:
- |              | Aerobatic            | Utility              |
|--------------|----------------------|----------------------|
| Span         | 14,00 m              | 16,15 m              |
| Wing area    | 12,34 m <sup>2</sup> | 13,09 m <sup>2</sup> |
| Aspect Ratio | 15,88                | 19,92                |
| Length       | 7,38 m               | 7,38 m               |
| Height       | 2,25 m               | 2,25 m               |
5. Launching Hook: Nose towing hook TOST E 85 or SZD-III A56 P  
CG towing hook (optional) TOST Europa G 88
6. Weak links: Ultimate Strength: 677 daN ( $\pm 10\%$ )
7. Air Speeds: Manoeuvring Speed  $V_A$  214 km/h  
Never Exceed Speed  $V_{NE}$  282 km/h  
Maximum permitted speeds  
- in rough air  $V_{RA}$  225 km/h  
- in aero-tow  $V_T$  150 km/h  
- in winch launching  $V_W$  150 km/h  
*winch launching permissible only with short wingtips*
8. Operational Capability: VFR Day only
9. Launch methods: Aero tow  
Winch launch (*permissible only with short wingtips*)
9. Masses:
- |  | Aerobatic | Utility |
|--|-----------|---------|
| Max. Mass                              | 530 kg    | 535 kg  |
| Max. Empty Mass (without balance mass) | 350 kg    | 355 kg  |





10. Centre of Gravity Range: Empty glider with standard equipment:  
Forward Limit 620 mm aft of datum point  
Rearward Limit 645 mm aft of datum point  
Centre of Gravity operational limits:  
Forward Limit 213 mm aft of datum point (22,0% MAC)  
Rearward Limit 379 mm aft of datum point (39,0% MAC)  
MAC is 971 mm for wings with short wingtips  
MAC is 938 mm for wings with long wingtips  
0% MAC is 2,1 mm aft of datum.  
Datum: Leading edge and wing-fuselage division plane intersection.  
Levelling means: Leading and trailing points of root chord (1308 mm) at the same level.
11. Seating Capacity: 2
12. Lifetime limitations: Refer to Maintenance Manual
13. Other limitations: Solo flight is permissible only on front seat.  
Cross-country flight (gliding or towed) with short wingtips only with one person crew.  
No baggage permitted.  
The following kinds of operation are forbidden:  
- auto-towing,  
- winch launching with long wingtips,  
- flights in icing conditions,  
- night flying,  
- cloud flying without turn-and-bank indicator,  
- aerobatic in rough air  
- full aerobatic with long wingtips.  
Manoeuvring load factor limits:  
Aerobatic version with short wingtips:  
- two person crew +7,0/-5,0  
- one person (no more than 100 kg incl. parachute) +9,0/-6,0  
Utility version with long wingtips +5,3/-2,65
14. Deflection of control surfaces:
- |           |         |     |             |
|-----------|---------|-----|-------------|
| Aileron:  | - up    | 22° | ± 1°        |
|           | - down  | 17° | ± 1°        |
| Elevator: | - up    | 25° | ± 1°        |
|           | - down  | 25° | ± 1°        |
| Rudder:   | - left  | 30° | + 1° / - 2° |
|           | - right | 30° | + 1° / - 2° |



## **B.IV. Operating and Service Instructions**

### 1. Flight Manual:

- Polish: Instrukcja Użytkowania w Locie Szybowców MDM-1 „Fox” oraz MDM-1P „Fox P”, wydanie IV, Grudzień 1998
- English: Flight Manual MDM-1 „Fox”, MDM-1P „Fox P”, issue IV, December 1998

### 2. Maintenance Manual:

- Polish: Opis Techniczny, Instrukcja Obsługi Technicznej, Prace Okresowe, Szybowca MDM-1P „Fox P”, wydanie I, Grudzień 1998
- English: Technical Service Manual, Periodic Works, MDM-1P „Fox P” issue I, December 1998

## **B.V. Notes**

1. Serial Numbers:  
P-11, P-13, P-14, P-15, P-16,  
201, and up  
Previously built MDM-1 "Fox" gliders can be modified into the MDM-1P "Fox-P" model.
2. All glider outside surfaces exposed to sunlight must be white painted apart from registration number and anti-collision marks.



## **Administrative section**

### I. Acronyms

MAC Mean Aerodynamic Chord  
S/N Aircraft Serial Number  
VFR Visual Flight Rules

### II. Type Certificate Holder Record

ZAKŁADY LOTNICZE Margański & Mysłowski S.A.  
ul. Strażacka 60  
43-300 Bielsko-Biała  
POLAND

As of 12 December 2024  
Secint Air Support Poland sp. z.o.o.  
CEGIELNIANA STR. 4A/15  
30-404 KRAKÓW PL Malopolskie  
Poland

### III. Change Record

Issue	Date	Changes
01	23 June 2005	Transfer from Polish Type Certificate No. BG-197 to the EASA Type Design.
02	14 February 2007	Including the MDM-1P "Fox P" version which was included to the Polish TC No. BG-197 with Certificate of Approval No Z-BG-01/99 on January 12 <sup>th</sup> , 1999. Editorial changes.
03	12 December 2024	TC transfer to Secint Air Support Poland

