

**DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION**

G00069CE
Revision 1
ZAKŁADY LOTNICZE
MDM-1 "Fox"
MDM-1P "Fox-P"
September 13, 2016

TYPE CERTIFICATE DATA SHEET No. G00069CE

This Data Sheet which is a part of the Type Certificate No. G00069CE prescribes conditions and limitations under which the product for which the Type Certificate was issued meets the Airworthiness Requirements of the Federal Aviation Administration.

Type Certificate Holder: ZAKŁADY LOTNICZE Margański & Mysłowski S.A.
ul. Strażacka 60
43-300 Bielsko-Biała
Poland

I. MDM-1 "Fox", Non-powered Glider, Aerobatic Category, approved May 13, 2016

Description: A two-seat, tandem configuration, aerobatic and trainer glider. Two-piece, tapered and cantilevered, mid-wing monoplane with Schempp-Hirth airbrakes on the upper surface. Conventional tail unit comprised of a fixed stabilizer with an elevator, fin, and rudder. Structure made up of glass-epoxy and carbon-epoxy composites. Fixed landing gear – main wheel with disk brake and tail wheel.

Airspeed Limits (IAS): See Flight Manual.

V_{NE} (never exceed) Speed versus Altitude

altitude (ft)	knots	mph	altitude (m)	km/h
0 - 10000	152	175	0 - 3000	282
13000	145	167	4000	267
16000	138	159	5000	253
18000	133	153	5500	246

		knots	mph	km/h
V_{RA}	Maximum rough air speed	122	140	225
V_A	Maximum maneuvering speed	116	133	214
V_T	Maximum aerotowing speed	81	93	150
V_W	Maximum winch-launching speed	81	93	150

Maneuvering Load Limits: See Flight Manual

Maximum allowed load factor range	+7.0 / -5.0 g
Extended load factor range for solo flight (pilot weight ≤ 220 lbs (100 kg))	+9.0 / -6.0 g

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- C.G. Range:** Forward limit: 8.4 in (213 mm) aft of datum plane (22% MAC)
Rear limit: 14.9 in (379 mm) aft of datum plane (39% MAC)
- Mean Aerodynamic Chord (MAC) is 38.2 in (971 mm).
MAC is 0.1 in (2.1 mm) aft of datum plane.
- Empty Weight C.G.:** Empty glider with standard equipment:
Forward limit: 24.4 in (620 mm) aft of datum plane
Rear limit: 25.4 in (645 mm) aft of datum plane
- Datum:** Vertical plane passing through the wing leading edge.
- Leveling Means:** Leading and trailing points of root chord, 51.5 in (1308 mm), at the same level.
- Maximum Weight:** Maximum take-off and landing weight: 1168 lbs (530 kg)
Maximum take-off and landing weight for maneuvering load range extended to +9/-6 g in solo flight: 992 lbs (450 kg)
Maximum weight of all non-lifting structural parts (empty glider without wings): 364 lbs (165 kg)
- Number of Seats:** Two. When flown solo, pilot operation only permissible from the front seat.
- Maximum Baggage:** No baggage permitted.
- Ballast Capacity:** Up to 24.4 lbs (11 kg) of ballast weights allowed.
- Weak Link for Towing:** 1369 - 1675 lbs (609 - 745 daN)
(Aerotow and Winch)
- Tow Release:** 1) Nose towing hook: Tost E 85 or SZD-III A56 P
2) C.G. towing hook: Tost Europa G 88 (installation is optional)

Control Surface Movements:

	<u>Up</u>	<u>Down</u>
Ailerons	22° ± 1°	17° ± 1°
Elevator	25° ± 1°	25° ± 1°
	<u>Left</u>	<u>Right</u>
Rudder	30° + 1° / - 2°	30° + 1° / - 2°

II. MDM-1P “Fox-P”, Non-powered Glider, Aerobatic or Utility Category, approved May 13, 2016

- Description:** A two-seat, tandem configuration, aerobatic and trainer glider. Two-piece, tapered and cantilevered, mid-wing monoplane with Schempp-Hirth airbrakes on the upper surface. Conventional tail unit comprised of a fixed stabilizer with an elevator, fin, and rudder. Structure made up of glass-epoxy and carbon-epoxy composites. Fixed landing gear – main wheel with disk brake and tail wheel. Exchangeable wingtips – short for Aerobatic and long for Utility versions.

- Airspeed Limits (IAS):** See Flight Manual.

V_{NE} (never exceed) Speed versus Altitude

altitude (ft)	knots	mph	altitude (m)	km/h
0 - 10000	152	175	0 - 3000	282
13000	145	167	4000	267
16000	138	159	5000	253
18000	133	153	5500	246

Airspeed Limits (IAS) (cont'd):

		knots	mph	km/h
V _{RA}	Maximum rough air speed	122	140	225
V _A	Maximum maneuvering speed	116	133	214
V _T	Maximum aerotowing speed	81	93	150
V _W	Maximum winch-launching speed - Winch-launching ONLY permissible with short wingtips	81	93	150

Maneuvering Load Limits: See Flight Manual

	Glider Version:	
	Aerobatic	Utility
Maximum allowed load factor range	+7.0 / -5.0 g	+5.3 / -2.65 g
Extended load factor range for solo flight (pilot weight ≤ 220 lbs (100 kg))	+9.0 / -6.0 g	N/A

C.G. Range:

Forward limit: 8.4 in (213 mm) aft of datum plane (23% MAC)

Rear limit: 14.9 in (379 mm) aft of datum plane (40% MAC)

Mean Aerodynamic Chord (MAC) is 36.9 in (938 mm).

MAC is 0.1 in (2.1 mm) aft of datum plane.

Empty Weight C.G.:

Empty glider with standard equipment:

Forward limit: 24.4 in (620 mm) aft of datum plane

Rear limit: 25.4 in (645 mm) aft of datum plane

Datum:

Vertical plane passing through the wing leading edge.

Leveling Means:

Leading and trailing points of root chord, 51.5 in (1308 mm), at the same level.

Maximum Weight:

Aerobatic version (short wingtips):

Maximum take-off and landing weight: 1168 lbs (530 kg)

Maximum take-off and landing weight for maneuvering load range extended to +9/-6 g in solo flight: 992 lbs (450 kg)

Maximum weight of all non-lifting structural parts (empty glider without wings):

364 lbs (165 kg)

Utility version (long wingtips):

Maximum take-off and landing weight: 1179 lbs (535 kg);

Maximum weight of all non-lifting structural parts (empty glider without wings):

364 lbs (165 kg)

Number of Seats:

Two. When flown solo, pilot operation only permissible from the front seat.

Maximum Baggage:

No baggage permitted.

Ballast Capacity:

Up to 24.4 lbs (11 kg) of ballast weights allowed.

Weak Link for Towing:
{Aerotow and Winch}

1369 - 1675 lbs (609 - 745 daN)

Tow Release:

- 1) Nose towing hook: Tost E 85 or SZD-III A56 P
- 2) C.G. towing hook: Tost Europa G 88 (installation is optional)

Control Surface Movements:

	<u>Up</u>	<u>Down</u>
Ailerons	22° ± 1°	17° ± 1°
Elevator	25° ± 1°	25° ± 1°

Control Surface Movements (cont'd):

	<u>Left</u>	<u>Right</u>
Rudder	30° + 1° / - 2°	30° + 1° / - 2°

Data Pertinent to All Models:

Serial Numbers Eligible: The following serial numbers are eligible for a U.S. Standard Airworthiness Certificate if all import requirements of this TCDS are satisfied:

MDM-1 “Fox”: Serial numbers 248 and subsequent
MDM-1P “Fox-P”: Serial numbers 248 and subsequent

The following serial numbers are eligible for a U.S. Standard Airworthiness Certificate if the ZAKŁADY LOTNICZE Margański & Mysłowski S.A. Service Bulletin No. BO-22/2015 MDM-1 FOX, original revision, issued April 29, 2016, or later approved revision, is incorporated, and the applicable requirements of this TCDS are satisfied, except as specified in the noted Service Bulletin:

MDM-1 “Fox”: Serial numbers P14, P-16, and 201-247
MDM-1P “Fox-P”: Serial numbers P-14, P-16, and 201-247

Import Requirements:

The FAA can issue a U.S. airworthiness certificate based on the Polish Civil Aviation Authority (CAA), Export Certificate of Airworthiness (Export C of A) signed by a representative of the CAA on behalf of the European Community. The Export C of A should contain the following statement: “The aircraft covered by this certificate has been examined, tested, and found to conform to the type design approved under FAA Type Certificate G00069CE and to be in a condition for safe operation.”

Certification Basis:

- 1) Title 14 of the Code of Federal Regulations (14CFR) Part 21, effective February 1, 1965, including Amendments 21-1 through 21-60 as applicable.
- 2) Joint Airworthiness Requirements for Sailplanes and Powered Sailplanes (JAR-22), Change 4, dated May 7, 1987.
- 3) Exemption (JAR 22.49) – Stall speed with two person crew exceeds 80 km/hr (Aerobatic version only).
- 4) Exemption (JAR 22.143) – Airbrakes closing force exceeds 20 daN.
- 5) Date of application for FAA Type Certificate: September 5, 2014.
- 6) Type Certificate No. G00069CE issued May 13, 2016.
- 7) The following kinds of operation are allowed:
 - VFR-Day
 - IFR – Day (If properly equipped. See “Cloud Flying” in NOTE 6)

The Polish Civil Aviation Authority (CAA) originally type certificated the MDM-1 “Fox” glider under its Type Certificate No. BG-197 issued on July 27, 1994. The MDM-1P “Fox-P” glider was subsequently certified and added to Type Certificate No. BG-197 on January 12, 1999. Effective May 01, 2004, the European Aviation Safety Agency (EASA) began oversight of these products on behalf of the CAA. The EASA TCDS number is EASA.A.039.

Equipment:

The basic required equipment as prescribed in the applicable airworthiness regulations (see Certification Basis) must be installed in the aircraft for certification. In addition, the Flight Manual for Models MDM-1 “Fox” and MDM-1P “Fox-P”, Issue V, Revision 0, dated April 29, 2016, or later approved revision, is required.

- 1) Minimum equipment:
 - Airspeed indicator
 - Altimeter
 - Accelerometer (when used for aerobatic flight)
 - 5-points pilot harness

Equipment (cont'd):

- Parachute or back cushion for each crew member (where cushion thickness is approximately 3 in (8 cm) on front seat and 1 in (2 cm) on rear seat)

Refer to the Flight Manual for additional equipment.

Service Information:

Each of the documents listed below must state that it is approved by the European Aviation Safety Agency (EASA) or – for approvals made before May 01, 2004 – by the Polish Civil Aviation Authority (CAA).

- Flight Manual
- Technical Service Manual
- Service Bulletins
- Vendor manuals

The FAA accepts such documents and considers them FAA-approved for type design data only unless one of the following conditions exists:

- The documents change the limitations, performance, or procedures of the FAA approved manuals.

The FAA uses the post type validation procedures to approve these documents. The FAA may delegate on a case-by-case basis to EASA to approve on behalf of the FAA for the U.S. type certificate. If this is the case it will be noted on the document.

Available service documents:

- 1) Flight Manual for Models MDM-1 “Fox” and MDM-1P “Fox-P”, Issue V, Revision 0, dated April 29, 2016, or later approved revisions
- 2) Technical Service Manual for Models MDM-1 “Fox” and MDM-1P “Fox-P”, Issue IV, Revision 0, dated April 29, 2016, or later approved revisions
- 3) Operating Instructions: Tost model “E 85” nose tow release, latest approved version
- 4) Operating Instructions: Tost model “Europa G 88” safety tow release, latest approved version (if installed)

NOTES:

- NOTE 1. Current weight and balance data together with list of equipment included in certificated empty weight, and loading instructions, when necessary, must be provided for each glider at the time of original certification.
- NOTE 2. The placards listed in Flight Manual must be displayed. Flight Manual Limitations may not be changed without FAA approval.
- NOTE 3. Section 4, "Airworthiness Limitations" of the Technical Service Manual for Models MDM-1 “Fox” and MDM-1P “Fox-P” are FAA-approved. These Airworthiness Limitations may not be changed without FAA approval.
- NOTE 4. All external portions of the glider exposed to sunlight must be painted white except the areas for registration numbers, wing tips outboard of the ailerons, fuselage nose, and rudder.
- NOTE 5. Information essential for the proper operation, maintenance and repair of the glider is contained in the Flight Manual and Technical Service Manual for Models MDM-1 “Fox” and MDM-1P “Fox-P”.
- NOTE 6. “Cloud Flying” is considered flying in Instrument Meteorological Conditions (IMC) and requires an Instrument Flight Rules (IFR) clearance in the U.S. This is permissible in the U.S. provided the pilot has the appropriate rating per 14 CFR 61.3, the glider contains the necessary equipment specified under 14 CFR 91.205, and the pilot complies with IFR requirements.

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