TYPE-CERTIFICATE
DATA SHEET

No. EASA.E.099

for
MD-TJ series engines

Type Certificate Holder
M&D Flugzeugbau GmbH & Co. KG

Streeker Straße 5b
26446 Friedeburg
Germany

For Models:

MD-TJ42
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I. General

1. Type/Model/Variants
   MD-TJ42

2. Type Certificate Holder
   M&D Flugzeugbau GmbH & Co. KG
   Streeker Straße 5B
   26446 Friedeburg
   Germany

   Design Capability reference: DOA EASA.21J.603

3. Manufacturer
   M&D Flugzeugbau GmbH & Co. KG
   Streeker Straße 5B
   26446 Friedeburg
   Germany

4. Date of Application
   21 September 2009

5. EASA Type Certification Date
   18 November 2015

II. Certification Basis

1. Reference Date for determining the applicable airworthiness requirements
   • 22 September 2012

2. EASA Certification Basis

   2.1. Airworthiness Standards

   2.2. Special Conditions (SC)
   SC01 to SC19, Airworthiness Standard for CS-22H – Turbine engine to be operated in powered sailplanes

   SC01 Application
   SC02 Functioning
   SC03 Accessory Attachment
   SC04 Engine Control System
   SC05 Vibration
   SC06 Fuel and Induction System
   SC07 Lubrication System
   SC08 Vibration Test
   SC09 Calibration Test
   SC10 Endurance Test
   SC11 Operation Test
   SC12 Cyclic Endurance Test
   SC13 Rotor Containment
   SC14 Containment
   SC15 Continued Rotation
   SC16 CS22.1823(c) Amendment for turbine engines to CS22.1823(c)
   SC17 Safety Analysis
   SC18 CS22.1808 Selection of engine Power and/or Thrust Ratings
   SC19 Approved Life
2.3. Equivalent Safety Findings

None

2.4. Deviations

None

2.5. Environmental Protection

- CS-34.1 Fuel Venting
- CS-34.2 Smoke Number

III. Technical Characteristics

1. Type Design Definition

Type Design Definition in accordance with parts list MD02-DWL-71-001-R02 or later approved revisions

2. Description

Single shaft turbojet engine featuring a single stage centrifugal compressor, an annular combustion chamber, a single stage axial turbine and exhaust nozzle.
The engine is controlled by a single channel digital electronic control unit.

3. Equipment

The engine equipment is specified in the installation manual.
The engine Type Design covers an aircraft mounted Control Unit and an aircraft mounted Fuel Board consisting of electrical pump, filter and valve.

4. Dimensions

<table>
<thead>
<tr>
<th>Overall Length</th>
<th>mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diameter (max.)</td>
<td>164</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Complete Engine including operating fluids</th>
<th>kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engine</td>
<td>3.650</td>
</tr>
<tr>
<td>Ignition Source</td>
<td>0.035</td>
</tr>
<tr>
<td>Engine Control Unit</td>
<td>0.950</td>
</tr>
<tr>
<td>Starter</td>
<td>0.256</td>
</tr>
</tbody>
</table>
6. Ratings

<table>
<thead>
<tr>
<th>Speed</th>
<th>Max Thrust (limited to 5 minutes)</th>
<th>Max Continuous</th>
</tr>
</thead>
<tbody>
<tr>
<td>RPM</td>
<td>97.000</td>
<td>80.000</td>
</tr>
<tr>
<td>N</td>
<td>350</td>
<td>205</td>
</tr>
</tbody>
</table>

Note 1: Max Thrust 100% corresponds to 97.000 RPM
Note 2: The performance value specified above corresponds to minimum values defined under the conditions of ICAO standard atmosphere

7. Control System

The engine is equipped with a single channel digital electronic control unit.

8. Fluids (Fuel, Oil, Coolant, Additives)

Approved fuels and oils are listed in Operation and Maintenance Manual MD02-OMM-70-001-R03 or later approved revisions.

9. Aircraft Accessory Drives

The engine design does not provide accessory drives

10. Maximum Permissible Air Bleed Extraction

Not applicable

IV. Operating Limitations

1. Temperature Limits

<table>
<thead>
<tr>
<th>Maximum and Continuous Thrust</th>
<th>Maximum on Ground Start (max 3 s.)</th>
<th>Fuel Temperature</th>
<th>Intake Air Temperatures and Intake Air Temperatures – Start Up</th>
</tr>
</thead>
<tbody>
<tr>
<td>°C</td>
<td>790</td>
<td>1000</td>
<td>-15 / +40</td>
</tr>
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</table>

2. Rotational Speed Limits

<table>
<thead>
<tr>
<th>Maximum Thrust (limited to 5 minutes)</th>
<th>Max Continuous Thrust</th>
<th>Minimum idle Speed</th>
</tr>
</thead>
<tbody>
<tr>
<td>RPM</td>
<td>97.000</td>
<td>30.000</td>
</tr>
<tr>
<td></td>
<td>80.000</td>
<td></td>
</tr>
</tbody>
</table>

3. Pressure Limits

According Operation and Maintenance Manual MD02-OMM-70-001-R03 or later approved revisions

3.1 Fuel Pressure

Max. Fuel pressure < 4.5 bar

3.2 Oil Pressure

Not applicable

4. Oil capacity, consumption limit

According Operation and Maintenance Manual MD02-OMM-70-001-R03 or later approved revisions

V. Operating and Service Instructions

<table>
<thead>
<tr>
<th>Information</th>
<th>Document Number</th>
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<tbody>
<tr>
<td>Operation and Maintenance Manual</td>
<td>MD02-OMM-70-001-R03</td>
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<tr>
<td>Engine Installation Manual</td>
<td>MD02-EIM-70-001-R0</td>
</tr>
<tr>
<td>Engine Overhaul Manual</td>
<td>MD02-EOM-70-001-R0</td>
</tr>
<tr>
<td>Service Bulletins</td>
<td>as published by MD Flugzeugbau Gmbh &amp; Co. KG</td>
</tr>
</tbody>
</table>
VI. Notes

1. The engine is certified for installation on powered Sailplanes and other aircraft which can accept an engine certified according to CS-22 Subpart H.

2. The engine must not be used for:
   - performing Take Off operation,
   - flights in rain & hail conditions and
   - in icing conditions
   - aerobatic operation


4. The ratings shown under III.6 are achieved at Sea Level and ISA standard day conditions

5. The EASA approved Airworthiness Limitations Section of the Instructions for Continued Airworthiness is published in the applicable "Operation and Maintenance Manual", Chapter 5 "Airworthiness Limitations".
SECTION: ADMINISTRATIVE

I. Acronyms and Abbreviations
n/a

II. Type Certificate Holder Record
n/a

III. Change Record

<table>
<thead>
<tr>
<th>Issue</th>
<th>Date</th>
<th>Changes</th>
<th>TC issue</th>
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<tbody>
<tr>
<td>Issue 01</td>
<td>18 November 2015</td>
<td>Initial Issue</td>
<td>Initial Issue, 18 November 2015</td>
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<tr>
<td>Issue 02</td>
<td>02 May 2019</td>
<td>Updated DOA reference</td>
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