

DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

E16NE
Universal Propulsion
1337-1
November 17, 1983

TYPE CERTIFICATE DATA SHEET NO. E16NE

Engine of model described herein conforming with this data sheet (which is part of Type Certificate No. E16NE) and other approved data on file with the Federal Aviation Administration meet the minimum standards for use in certificated aircraft in accordance with pertinent aircraft data sheets and applicable portions of the Federal Aviation Regulations provided they are installed, operated, and maintained as prescribed by the approved manufacturer's manuals and other approved instructions.

Type Certificate Holder: Universal Propulsion Company, Inc. (UPCo)
Phoenix, Arizona 85029

Model UPCo Model No. 1337-1

Type Cylindrical case, self-contained, solid propellant, reloadable, electrically fired rocket engine.

Thrust Characteristics

Temperature of Propellant	-30°F (-34.4°C)	60°F (15.6°C)	130°F (54°C)
Average Thrust Lb.	250	350	455
Duration, seconds	16.1	11.8	9.3
Rated Impulse, lb-seconds	4025	4135	4231

Nominal Rated Thrust, lbs. at sea level and 60°F propellant temp. 350 Typ.

Temperature Range

Operating	-30°F (-34.5°C) to +130°F (54°C)
Storage	-40°F (-40°C) to +150°F (66°C)

Altitude Limits
Operating and Storage Sea level to 35,000 ft.

Propellant (Fuel) UPCo 2789

Principal Dimensions of Motor (inches, nom.)

Diameter (over forward & aft end caps)	6.38
Length, overall	24.00

Weights (nominal)

Loaded (charged)	40.9 lb.
Empty (expended)	19.2 lb.

Ignition

Recommended current	25 amperes at 12 or 24 volts
Duration of interval	0.5 seconds maximum

NOTES 1 through 7

Certification Basis FAR 33 effective 9/11/80, Amended by 33-1 through 33-9
Date of Type Certificate Application: 10/21/81
Date Type Certificate Issued/Revised: 11/17/83

NOTE 1. Overaged engines and igniters shall be refurbished by the Type Certificate holder or his/her authorized

Page No.	1	2
Rev. No.	-	-

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source only. Expended rockets are not refurbishable.

- NOTE 2. All Model 1337-1 Rocket Engine installations basically shall be in accordance with the engineering criteria in Universal Propulsion Document No. 3059, 1337-1 Aircraft Rocket Engine Operation & Service Instructions Manual. Each new type installation shall be reviewed and concurred with UPCo or its authorized representative and approved by the Federal Aviation Administration or by the Civil Aviation Authority of the country involved.
- NOTE 3. Maximum storage period shall be three years from the date of manufacture marked on the unit. Temperature storage limits are -40°F (40°C) minimum and +150°F (66°C) maximum.
- NOTE 4. UPCo Model No. 1337-1 Rocket Engines may be carried on an aircraft ready for operation for a maximum of 1000 hours cumulative flying time or 12 months, whichever occurs first, in addition to the three-year storage period.
- NOTE 5. The rocket engines may be fired prior to removal for pilot familiarization and checkout if desired.
- NOTE 6. The "Temperature of Propellant" is the temperature of the propellant mass. This temperature approximates the average of the temperature to which the rocket engine has been exposed in the previous 24-hour period.
- NOTE 7. Thrust and impulse of this rocket engine increase slightly with increase in altitude. See UPCo Model No. 1337-1 Aircraft Rocket Engines Operation & Service Instructions, UPCo Document No. 3059.

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