

Approved by EASA under Approval Number 10038169

8.24 SHADOW HIGH ALTITUDE BURNER

8.24.1 GENERAL INFORMATION

Issue 2 of this supplement has four pages.

This supplement shall be inserted in the Flight Manual, in Section 8: 'Supplements' with the revisions record sheet amended accordingly.

Information contained herein supplements, or in the case of conflict, supersedes that contained in the basic Flight Manual. For Limitations, Procedures, and Performance Data not contained in this supplement, consult the basic Hot Air Balloon Flight Manual.

Issue 2 of this supplement consists of four pages.

Supplement 7.24 (two pages) to Maintenance Manual Issue 10 is required to ensure continued airworthiness.

8.24.2 LIMITATIONS

8.24.2.4 MINIMUM BURNER REQUIREMENTS

1. The Shadow High Altitude burner must not be used as a single burner.
2. The Shadow High Altitude burner may be used as one unit of a double burner in balloons of 56,000 cu ft (1585 m³) to 150,000 cu ft (4248 m³).
3. The Shadow High Altitude burner may be used as one or two units of a triple burner in balloons of 120,000 cu.ft (3398 m³) to 210,000 cu.ft (5947 m³).
4. The Shadow High Altitude burner may be used as one or two units of a quad burner in balloons of 160,000 cu.ft (4531 m³) to 530,000 cu.ft (15010 m³).

8.24.3 EMERGENCY PROCEDURES

No change.

8.24.4 NORMAL PROCEDURES

8.24.4.5 CONTROL IN FLIGHT

8.24.4.5.1 BURNER CONTROL

For normal operations the bellows valve should be in the fully open position.

As altitude increases, the bellows valve should be partially closed to restrict the fuel flow (to compensate for the lack of oxygen). The amount of closure will depend on altitude and ambient temperature and should be determined by experimentation.

8.24.5 WEIGHT CALCULATIONS

No change.

8.24.6 BALLOON AND SYSTEMS DESCRIPTION

8.24.6.3 Burner

8.24.6.3.9 Shadow And Stealth Burners

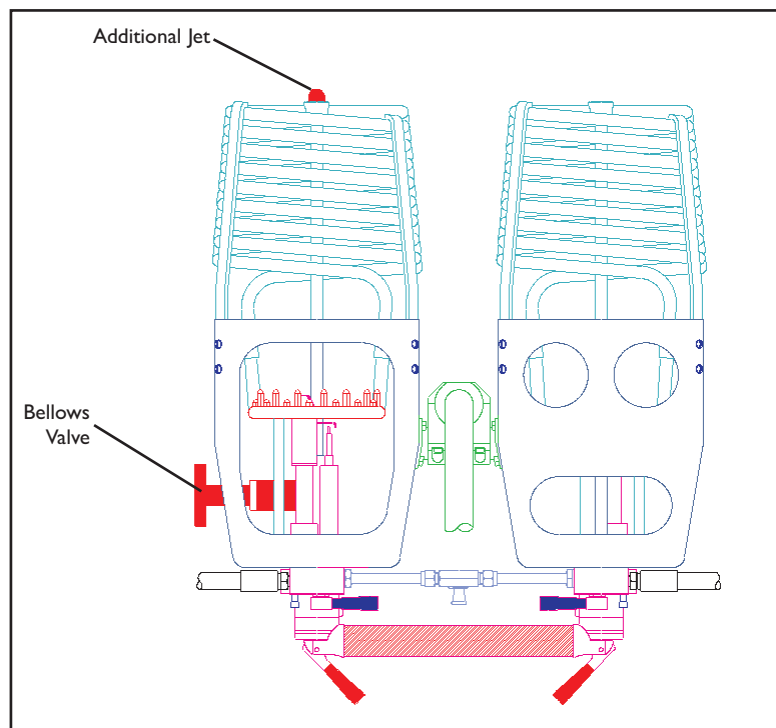
The Shadow High Altitude burner is a modified burner designed to perform at high altitude and low temperature. It is supplied in combination with standard Shadow burners dependant on proposed flight envelope.

The Shadow High Altitude burner features:-

Additional cutaways in the burner can to allow more air to mix with the fuel at higher altitudes.

A bellows valve in the centre column of the burner coil to allow throttling back of the burner at high altitudes.

An additional jet at the top of the centre column to allow additional liquid propane to be added to the main burner flame.



▲ Shadow High Altitude Burner Additional Controls

Each burner unit of the combination is fitted with special seals to improve reliability at low temperature.

The burner is designed for use on special projects (e.g. altitude record attempts) only.

8.24.7 BALLOON MAINTENANCE, HANDLING AND CARE

No change.

8.24.9 EQUIPMENT LIST

Burner Category	Drawing Number	Burner Description
B	CB2586	Shadow, Double, High Altitude
B	CB2589	Shadow, Triple, High Altitude
B	CB6470	Shadow, Quad, High Altitude

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