



TYPE-CERTIFICATE

DATA SHEET

NO. EASA.BA.014

for

ULTRAMAGIC MANNED FREE HOT AIR BALLOONS

Type Certificate Holder
Ultramagic, S.A.

Aerodrom Igualada-Odena s/n
08711 Odena
Spain

For Models:

- H Series
- S Series
- T Series
- V Series
- M Series
- N Series
- Z Series
- B Series
- G Series

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SECTION 1: GENERAL (applicable to all models)

I. GENERAL

1. Data Sheet No: EASA.BA.014 Issue Date: 29 March 2018
2. Type / Variant or Model
- (a) Type: Series H , Series S, Series T, Series V, Series M,
Series N, Series Z, Series B, Series G
- (b) Variant or Model Refer to Sections 2 to 10
3. Category: Free Manned Hot Air Balloon
4. Type Certificate Holder: ULTRAMAGIC, S.A.
Aerodrom Igualada-Odena s/n
08711 ODENA
Spain
5. Manufacturer: ULTRAMAGIC, S.A.
Aerodrom Igualada-Odena s/n
08711 ODENA
Spain
6. National certification date: Various, refer to Sections 2 to 10
7. DGAC-ES application date: Various, refer to Sections 2 to 10
8. EASA certification date: 19 January 2006
9. TCDS History: This EASA TCDS replaces the former Spanish TCDS no. 3 rev. 18,
no. 4 rev. 8 , no. 18 rev. 7, no. 61 rev. 12, no. 147 rev. 4 and no. 247
rev. 2 issued by the DGAC-ES.
From EASA.BA.014 Issue 6 onwards all special shape balloons are
embraced by EASA.BA.517.

II. CERTIFICATION BASIS

This Type Certificate has initially been issued according to the requirements of la Dirección General de Aviación Civil (DGAC) following 14 CFR Part 31 corresponding to Manned Hot Air Balloons Part 31, Amdt. 4, of 14 October 1980.

For models M-42, M-56, M-56C, M-77C, M-90, N-355 and N-425 the applied rule corresponds to 14 CFR Part 31, Amdt. 5, 18 August 1990.

For models S-50, S-70, T-150, T-180, T-210 and N-500 the applied rule corresponds to 14 CFR Part 31, Amdt. 7, 24 May 1996.

For model S-50 and N-500 the applied rule corresponds to CS-31HB, 27 February 2009.

For model S-70, B-40, B-50, B-55, B-60, B-70, G-90 and N-450 the applied rule corresponds to CS-31HB/1 (Amdt 1), 12 December 2011.

Alternative means of compliance concerning 14 CFR Part 31 paragraph 31.47(d) (Amdt. 7, 24 May 1996) were applied to the burner models MK-1, MK-2, MK-2 Super and MK-10. A special test programme was established to ensure the equivalent level of safety.

V-25, SOLO and DUO bottom end according to 14 CFR Part 31, Amdt. 7, 24 May 1996. Special condition: EASA CS 31HB, draft dated 27 February 2003.

III. COMMON DATA TO ALL MODELS

| | |
|---|---|
| Equipment: | <p>for FAR Part 31:</p> <ul style="list-style-type: none">- 1 Altimeter- 1 Rate of climb/descent indicator (variometer)- 1 Remaining fuel quantity gauge for each fuel cell <p>for CS 31HB (draft February 2007) in addition:</p> <ul style="list-style-type: none">- 1 Fuel pressure gauge for each burner <p>for CS 31HB, February 2009, and CS 31HB/1, December 2011 in addition:</p> <ul style="list-style-type: none">- 1 Fuel pressure gauge for each burner- 1 Rate of climb/descent indicator (variometer), if Flight Manual limitations specify a rate of climb or descent- 1 'Kit' of tethering components, if the balloon is specifically approved for tethered operations <p>for all balloons:</p> <ul style="list-style-type: none">- Alternative means for burner ignition (lighter or similar)- 1 Envelope limit temperature indicator- Fire extinguisher- Flight Manual, EASA approved <p>Additional operational equipment may be required by national legislation</p> |
| Fuel: | <p>Commercial LPG, usually propane, except if burner is configured for butane</p> |
| Minimum crew: | <p>1 pilot</p> |
| Compatibility with approved parts of other manufacturers: | <p>See approved Supplements to Ultramagic Flight Manual. Only listed approved configurations shall be used. The latest Service Instructions of the other manufacturer's parts shall be used for maintenance</p> |
| Maintenance schedule: | <p>Annual or 100 hours inspections, whichever applies earlier one and following the Flight Manual and Maintenance Manual corresponding to the specific balloon configuration</p> |
| Operation and Service Instructions: | <p>Flight Manual for Ultramagic Balloons and applicable Supplements – or later approved revisions</p> <p>Maintenance Manual for Ultramagic Balloons and applicable Supplements - or later accepted revisions</p> <p>Operation and Service Instructions specific to aircraft registration or constructors number with an issue date prior to 28 September 2003 may continue to be used. Inspection shall be in accordance with the latest issue of the inspection schedule - Maintenance Manual for Ultramagic Balloons and applicable Supplements or later EASA accepted revision refers</p> |

SECTION 2 : SERIES H

Former DGAC-ES Type Certificate Data Sheet reference: 03

2.1. General

| Model | H-31 | H-42 | H-56 | H-65 | H-77 |
|-------------------------------|----------------|------------|-------------|------------|------------|
| Approved | 18 Feb 2000 | 1 Oct 1992 | 15 Oct 1987 | 1 Mar 1985 | 1 Mar 1985 |
| Technical Description | | | | | |
| Volume [m ³] | 900 | 1200 | 1590 | 1840 | 2190 |
| Number of gores | 12 | 12 | 12 | 12 | 12 |
| Disposition | horizontal | horizontal | horizontal | horizontal | horizontal |
| Max diameter [m] | 12.5 | 13.8 | 15.5 | 16.3 | 17.3 |
| Total height [m] | 16.2 | 17.3 | 19.0 | 19.9 | 21.0 |
| MTOM [kg] | 307 | 416 | 549 | 638 | 756 |
| Drawing number | 1012 | 1035 | 1007 | 1003 | 1002 |
| Serial numbers eligible | 31-01 & up | 42-01 & up | 56-01 & up | 65-01 & up | 77-01 & up |
| Fuel cylinder quantity | | | | | |
| Worthington 4100-U4-27 | 1 | 2 or more | 2 or more | 2 or more | 2 or more |
| UM Type M-20 or M-20D | 1 | 2 or more | 2 or more | 2 or more | 2 or more |
| UM Type M-30 or M-30D | 1 | 2 or more | 2 or more | 2 or more | 2 or more |
| UM Type T-25 | 1 | 2 or more | 2 or more | 2 or more | 2 or more |
| UM Type M-40 or M-40D | 1 | 2 or more | 2 or more | 2 or more | 2 or more |
| Notes on 2.3 | 1)* & 2)*, 3)* | 1)*, 3)* | 1)*, 3)* | 3)* | 3)* |

Envelope Temperature: 1) Not exceed by any concept 130°C
2) Max. continuous temperature 120°C

Burner: See § 2.2 : Burners and Baskets for H models

Basket: See § 2.2 : Burners and Baskets for H models

Maximum Weight: That one permitting the flight with the continuous temperature lower than 120°C, or according to the basket/equipment used based on § 2.2, whatever is less.
See Load Chart in Flight Manual Chap. 5.

2.2. Burners and Baskets for H models

| BURNER | | | | | | | | |
|---------|--------|------------|-----------|--------|--------|--------|--------|---------------------|
| Model | MK-1 | MK-2/SUPER | | MK-10 | | MK-21 | | MK-21/ELEC |
| Units | double | single | double | single | double | single | double | option |
| Drawing | 2001 | 2003/2005 | 2002/2006 | 2011 | 2012 | 2021 | 2022 | 2022/0100-0000-0200 |
| H-31 | ---- | X | ---- | X | ---- | X | ---- | ---- |
| H-42 | ---- | X | ---- | X | ---- | X | ---- | ---- |
| H-56 | ---- | X | X | X | X | X | X | X |
| H-65 | X | X | X | X | X | X | X | X |
| H-77 | X | X | X | X | X | X | X | X |

| BURNER (contd.) | | | |
|-----------------|---------|--------|--------|
| Model | BMK-008 | | MK-32 |
| Units | single | double | double |
| Drawing | 2031 | 2032 | 2062 |
| H-31 | X | ---- | ---- |
| H-42 | X | ---- | ---- |
| H-56 | X | X | X |
| H-65 | X | X | X |
| H-77 | X | X | X |

| BASKET | | | | | | | | | |
|----------|---------|---|---|---|---------|---------|---------|---------|-----------|
| Model | C0 | CT-01 <small>see Sec. 11, Notes 3), 5)</small> | CT-02 <small>see Sec. 11, Notes 4), 5)</small> | CT-03 <small>see Sec. 11, Notes 4), 5)</small> | C1 | C2 | C3 | C4 | C10 |
| Size [m] | 0.7x0.8 | 0.8x1.0 | 1.0x1.2 | 0.8x1.2 | 1.0x1.2 | 1.0x1.0 | 1.1x1.3 | 1.2x1.6 | 1.15x1.45 |
| Drawing | 3000 | 3200 | 3202 | 3203 | 3001 | 3002 | 3003 | 3004 | 3010 |
| H-31 | 307 | 307 | ---- | ---- | ---- | 307 | ---- | ---- | ---- |
| H-42 | 373 | 416 | 416 | 416 | 416 | 416 | ---- | ---- | ---- |
| H-56 | 399 | 527 | 549 | 549 | 549 | 549 | ---- | ---- | ---- |
| H-65 | ---- | 536 | 638 | 584 | 638 | 638 | 638 | ---- | 638 |
| H-77 | ---- | 540 | 756 | 589 | 756 | 756 | 756 | 756 | 756 |

* Compatibility and maximum mass in [kg]

| BOTTOM ENDS | | |
|-------------|--|---|
| Model | SOLO <small>see Sec. 11 Note 7)</small> | DUO <small>see Sec. 11 Note 7)</small> |
| Size | ---- | ----- |
| Drawing | 5001 | 5002 |
| H-31 | 300 | 300 |
| H-42 | 300 | 400 |
| H-56 | ---- | 450 |
| H-65 | ---- | ---- |
| H-77 | ---- | ---- |

* Compatibility and maximum mass in [kg]

2.3 Notes

1)*

| Fuel cylinder quantity | H-31 | H-42 | H-56 |
|----------------------------|------|------|------|
| With DUO | 2 | 2 | 2 |
| With SOLO | 1 | 1 | ---- |
| For all approved cylinders | | | |

2)* Approved optional modifications (exclusively for Model H-31)

Basket Cameron/Thunder&Colt with burner incorporated, model SKYCHARIOT according drawing SC2-002 for basket and drawing CB8711 for the burner.

Maximum Weight: 250 kg, or that one permitting the flight with the continuous temperature lower than 120°C, whatever is less.
See Load Chart in Flight Manual Chap. 5.

Basket Cameron/Thunder&Colt with burner incorporated, Model CLOUDHOPPER MILLENIUM according drawing CB8320 for basket and drawings n° CB8327 and CB8337 for the burner.

Maximum Weight: 250 kg, or that one permitting the flight with the continuous temperature lower than 120°C, whatever is less.
See Load Chart in Flight Manual Chap. 5.

3)*

External mounting of fuel cylinders approved for basket model CT-01 if equipped with an MK-21 single, a Single MK-21/Elec (not for H-31 and H-42) or a Single BMK-008 burner and with one of these fuel cylinders combinations (see Flight Manual Supplement No. 39, Issue 2 or later):
two Worthington 4100-U4-27, two UM Type M-20/M-20D, two UM Type M-30/M-30D, four Worthington 4100-U4-27, four UM Type M-20/M-20D, four UM Type M-30/M-30D, two Worthington 4100-U4-27 plus two UM Type M-20/M-20D, two Worthington 4100-U4-27 plus two UM Type M-30/M-30D, two UM Type M-20/M-20D plus two UM Type M-30/M-30D.

SECTION 3 : SERIES S

Former DGAC Spain Type Certificate Data Sheet reference: 18

3.1. General

| Model | S-50 | S-70 | S-90 | S-105 | S-130 | S-160 |
|-------------------------------|------------|-------------|-------------|-------------|-------------|-------------|
| Approved | 5 Feb 2010 | 25 Feb 2013 | 22 Dec 1988 | 15 Oct 1987 | 3 Jul 1989 | 16 Jan 1992 |
| Technical Description | | | | | | |
| Volume [m ³] | 1 415 | 1 982 | 2 550 | 2 950 | 3 680 | 4 550 |
| Number of gores | 16 | 16 | 16 | 16 | 16 | 16 |
| Disposition | horizontal | horizontal | horizontal | horizontal | horizontal | horizontal |
| Max diameter [m] | 14.7 | 16.2 | 18.1 | 19.1 | 20.6 | 22.1 |
| Total height [m] | 18.3 | 15.8 | 21.9 | 22.9 | 24.5 | 26.2 |
| MTOM [kg] | 500 | 650 | 878 | 1 032 | 1 365 | 1 569 |
| Drawing number | 1062 | 1063 | 1013 | 1014 | 1015 | 1016 |
| Serial numbers eligible | 50-01 & up | 70-01 & up | 90-01 & up | 105-01 & up | 130-01 & up | 160-01 & up |
| Fuel cylinder quantity | | | | | | |
| Worthington 4100-U4-27 | 2 or more | 2 or more | 2 or more | 2 or more | 2 or more | 2 or more |
| UM Type M-20 or M-20D | 2 or more | 2 or more | 2 or more | 2 or more | 2 or more | 2 or more |
| UM Type M-30 or M-30D | 2 or more | 2 or more | 2 or more | 2 or more | 2 or more | 2 or more |
| UM Type T-25 | 2 or more | 2 or more | 2 or more | 2 or more | 2 or more | 2 or more |
| UM Type M-40 or M-40D | 2 or more | 2 or more | 2 or more | 2 or more | 2 or more | 2 or more |
| Notes on 3.3 | 1)* | 1)* | | | | |

Envelope Options: To include rotation vents (turning vents), pressure scoop or skirt and limited inflated artwork as required.

Envelope Temperature: 1) Not exceed by any concept 130°C
2) Max. continuous temperature 120°C

Burner: See § 3.2 : Burners and Baskets for S models

Basket: See § 3.2 : Burners and Baskets for S models

Maximum Weight: That one permitting the flight with the continuous temperature lower than 120°C, or according to the basket/equipment used based on § 3.2, whatever is less.
See Load Chart in Flight Manual Chap. 5.

3.2. Burners and Baskets for S models

| BURNER | | | | | | | | |
|---------|------------|-----------|--------|--------|--------|--------|--------|---------------------|
| Model | MK-2/SUPER | | MK-10 | | MK-21 | | | MK-21/ELEC |
| Units | double | triple | double | triple | single | double | triple | option |
| Drawing | 2002/2006 | 2004/2007 | 2012 | 2013 | 2021 | 2022 | 2023 | 2022/0100-0000-0200 |
| S-50 | ---- | ---- | ---- | ---- | X | ---- | ---- | ---- |
| S-70 | ---- | ---- | ---- | ---- | X | X | ---- | ---- |
| S-90 | X | ---- | X | ---- | X | X | ---- | X |
| S-105 | X | X | X | X | X | X | X | X |
| S-130 | X | X | X | X | ---- | X | X | X |
| S-160 | X | X | X | X | ---- | X | X | X |

| BURNER (contd.) | | | | |
|-----------------|---------|--------|--------|--------|
| Model | BMK-008 | | MK-32 | |
| Units | single | double | double | triple |
| Drawing | 2031 | 2032 | 2062 | 2063 |
| S-50 | X | ---- | ---- | ---- |
| S-70 | X | X | X | ---- |
| S-90 | X | X | X | ---- |
| S-105 | X | X | X | ---- |
| S-130 | ---- | X | X | X |
| S-160 | ---- | X | X | X |

| BASKET | | | | | | | | |
|--|---------|---------------------------------------|---------------------------------------|---------------------------------------|-----------|---------|---------|---------|
| Model | C0 | CT-01 see Sec. 11, Notes 3), 5) | CT-02 see Sec. 11, Notes 4), 5) | CT-03 see Sec. 11, Notes 4), 5) | C1 | C2 | C3 | C4 |
| Size [m] | 0.7x0.8 | 0.8x1.0 | 1.0x1.2 | 0.8x1.2 | 1.0x1.2 m | 1.0x1.0 | 1.1x1.3 | 1.2x1.6 |
| Drawing | 3000 | 3200 | 3202 | 3203 | 3001 | 3002 | 3003 | 3004 |
| S-50 | 372 | 500 | 500 | 500 | 500 | 500 | ---- | ---- |
| S-70 | 385 | 515 | 650 | 559 | 650 | 650 | ---- | ---- |
| S-90 | ---- | ---- | 768 | 593 | 878 | 878 | 878 | 878 |
| S-105 | ---- | ---- | 777 | 602 | 1 032 | ---- | 1 032 | 1 032 |
| S-130 | ---- | ---- | 794 | 619 | 1 235 | ---- | 1 365 | 1 365 |
| S-160 | ---- | ---- | ---- | ---- | ---- | ---- | ---- | 1 569 |
| * Compatibility and maximum mass in [kg] | | | | | | | | |

| BASKET | | | | | | BOTTOM END |
|--|---------|---------|---------|-------------------------------|-----------|----------------------------|
| Model | C5 | C6 | C7 | CV-08 see Sec. 11, Note 6) | C10 | DUO see Sec. 11 Note 7) |
| Size [m] | 1.4x2.2 | 1.3x1.8 | 1.4x2.0 | 1.5x2.6 | 1.15x1.45 | ----- |
| Drawing | 3005 | 3006 | 3007 | 3108 | 3010 | 5002 |
| S-50 | ---- | ---- | ---- | ---- | 878 | 450 |
| S-70 | ---- | ---- | ---- | ---- | ---- | 450 |
| S-90 | ---- | ---- | ---- | ---- | 878 | ---- |
| S-105 | ---- | ---- | ---- | 1 032 | 1 032 | ---- |
| S-130 | 1 365 | 1 321 | 1 365 | 1 365 | 1 205 | ---- |
| S-160 | 1 569 | 1 333 | 1 569 | 1 569 | 1 227 | ---- |
| * Compatibility and maximum mass in [kg] | | | | | | |

3.3 Notes

1) *

| | | |
|----------------------------|------|------|
| Fuel cylinder quantity | S-50 | S-70 |
| With DUO | 2 | 2 |
| For all approved cylinders | | |

2)* (moved – see Sec. 11, Notes 3), 5))

SECTION 4 : SERIES T

Former DGAC Spain Type Certificate Data Sheet reference: 247

4.1. General

| Model | T-150 | T-180 | T-210 |
|-------------------------------|-------------|-------------|-------------|
| Approved | 15 Jan 2003 | 14 Feb 2002 | 15 Oct 2002 |
| Technical Description | | | |
| Volume [m ³] | 4 245 | 5 100 | 6 000 |
| Number of gores | 20 | 20 | 20 |
| Disposition | horizontal | horizontal | horizontal |
| Max diameter [m] | 20.9 | 22.2 | 24.3 |
| Total height [m] | 25.0 | 27.3 | 28.6 |
| MTOM [kg] | 1 465 | 1 754 | 2 070 |
| Drawing number | 1 059 | 1 045 | 1 046 |
| Serial numbers eligible | 150-01 & up | 180-29 & up | 210-20 & up |
| Fuel cylinder quantity | | | |
| Worthington 4100-U4-27 | 2 or more | 2 or more | 2 or more |
| UM Type M-20 or M-20D | 2 or more | 2 or more | 2 or more |
| UM Type M-30 or M-30D | 2 or more | 2 or more | 2 or more |
| UM Type T-25 | 2 or more | 2 or more | 2 or more |
| UM Type M-40 or M-40D | 2 or more | 2 or more | 2 or more |

Envelope Options: To include rotation vents (turning vents), pressure scoop or skirt and limited inflated artwork as required.

Envelope Temperature: 1) Not exceed by any concept 130°C
2) Max. continuous temperature 120°C

Burner: See § 4.2 : Burners and Baskets for T models

Basket: See § 4.2 : Burners and Baskets for T models

Maximum Weight: That one permitting the flight with the continuous temperature lower than 120°C, or according to the basket/equipment used based on § 4.2, whatever is less.
See Load Chart in Flight Manual Chap. 5.

4.2. Burners and Baskets for T models

| BURNER | | | | | | | | | |
|---------|--------------|-----------|------|--------|--------|------|--------|--------|------|
| Model | MK-2 / SUPER | | | MK-10 | | | MK-21 | | |
| Units | double | triple | quad | double | triple | quad | double | triple | quad |
| Drawing | 2002/2006 | 2004/2007 | 2008 | 2012 | 2013 | 2014 | 2022 | 2023 | 2024 |
| T-150 | ---- | ---- | ---- | X | X | ---- | X | X | ---- |
| T-180 | ---- | X | X | X | X | X | X | X | X |
| T-210 | ---- | X | X | ---- | X | X | X | X | X |

| BURNER (contd.) | | | | | | |
|-----------------|---------------------|---------|---------|--------|--------|------|
| Model | MK-21 / ELEC | BMK-008 | BMK-050 | MK-32 | | |
| Units | option | double | double | double | triple | quad |
| Drawing | 2022/0100-0000-0200 | 2032 | 2052 | 2062 | 2063 | 2064 |
| T-150 | X | X | ---- | X | X | ---- |
| T-180 | X | X | X | X | X | X |
| T-210 | X | X | X | X | X | X |

| BASKET | | | | | | | | | | |
|--|---------|---------|---------|---------|---------|---------|----------------------------------|---------|-----------|---------|
| Model | C3 | C4 | C5 | C6 | C7 | C8 | CV-08 see Sec. 11, Note 6) | C9 | C10 | C11 |
| Size[m] | 1.1x1.3 | 1.2x1.6 | 1.4x2.2 | 1.3x1.8 | 1.4x2.0 | 1.5x2.6 | 1.5x2.6 | 1.6x3.0 | 1.15x1.45 | 1.7x3.5 |
| Drawing | 3003 | 3004 | 3005 | 3006 | 3007 | 3008 | 3108 | 3009 | 3010 | 3011 |
| T-150 | 1 465 | 1 465 | 1 465 | 1 355 | 1 465 | ---- | 1 465 | ---- | 1 256 | ---- |
| T-180 | ---- | ---- | 1 754 | 1 372 | 1 611 | 1 754 | 1 676 | 1 754 | ---- | ---- |
| T-210 | ---- | ---- | 1 930 | ---- | 1 626 | 2 070 | 1 684 | 2 070 | ---- | 2 070 |
| * Compatibility and maximum mass in [kg] | | | | | | | | | | |

SECTION 5 : SERIES V

Former DGAC Spain Type Certificate Data Sheet reference: 03 (models V-65, V-77)
Former DGAC Spain Type Certificate Data Sheet reference: 04 (models V-56, V-90, V-105)

5.1. General

| Model | V-25 | V-56 | V-65 | V-77 | V-90 | V-105 |
|-------------------------------|-------------|-------------|------------|------------|-------------|-------------|
| Approved | 12 May 2006 | 15 Sep 1989 | 1 Mar 1985 | 1 Mar 1985 | 15 Oct 1989 | 25 Jun 1989 |
| Technical Description | | | | | | |
| Volume [m ³] | 708 | 1 650 | 1 840 | 2 190 | 2 550 | 2 950 |
| Number of gores | 24 | 24 | 24 | 24/32 | 24 | 24 |
| Disposition | vertical | vertical | vertical | vertical | vertical | vertical |
| Max diameter [m] | 11.5 | 15.2 | 16.0 | 17.0/16.6 | 17.9 | 18.8 |
| Total height [m] | 14.6 | 19.0 | 19.9 | 20.9/21.0 | 21.9 | 22.9 |
| MTOM [kg] | 250 | 549 | 638 | 756 | 878 | 1 032 |
| Drawing number | 1060/010 | 1008 | 1004 | 1001/1017 | 1018 | 1019 |
| Serial numbers eligible | 25-01 & up | 56-01 & up | 65-01 & up | 77-04 & up | 90-01 & up | 105-10 & up |
| Fuel cylinder quantity | | | | | | |
| Worthington 4100-U4-27 | 1 | 2 or more | 2 or more | 2 or more | 2 or more | 2 or more |
| UM Type M-20 or M-20D | 1 | 2 or more | 2 or more | 2 or more | 2 or more | 2 or more |
| UM Type M-30 or M-30D | 1 | 2 or more | 2 or more | 2 or more | 2 or more | 2 or more |
| UM Type T-25 | 1 | 2 or more | 2 or more | 2 or more | 2 or more | 2 or more |
| UM Type M-40 or M-40D | 1 | 2 or more | 2 or more | 2 or more | 2 or more | 2 or more |
| Notes on 5.3 | 1)* | 2)* | 1)*, 2)* | 2)* | | |

Envelope Temperature: 1) Not exceed by any concept 130°C
2) Max. continuous temperature 120°C

Burner: See § 5.2 : Burners and Baskets for V models

Basket: See § 5.2 : Burners and Baskets for V models

Maximum Weight: That one permitting the flight with the continuous temperature lower than 120°C, or according to the basket/equipment used based on § 5.2, whatever is less.
See Load Chart in Flight Manual Chap. 5.

5.2. Burners and Baskets for V models

| BURNER | | | | | | | | | | |
|---------|--------|--------------|-----------|-----------|--------|--------|--------|--------|--------|--------|
| Model | MK-1 | MK-2 / SUPER | | | MK-10 | | | MK-21 | | |
| Units | double | single | double | triple | single | double | triple | single | double | triple |
| Drawing | 2001 | 2003/2005 | 2002/2006 | 2004/2007 | 2011 | 2012 | 2013 | 2021 | 2022 | 2023 |
| V-25 | ---- | ---- | ---- | ---- | ---- | ---- | ---- | X | ---- | ---- |
| V-56 | ---- | X | X | ---- | X | X | ---- | X | X | ---- |
| V-65 | X | X | X | ---- | X | X | ---- | X | X | ---- |
| V-77 | X | X | X | ---- | X | X | ---- | X | X | ---- |
| V-90 | ---- | ---- | X | ---- | ---- | X | ---- | -- | X | ---- |
| V-105 | ---- | ---- | X | X | ---- | X | X | -- | X | X |

| BURNER (contd.) | | | | |
|-----------------|---------------------|---------|--------|--------|
| Model | MK-21 / ELEC | BMK-008 | | MK-32 |
| Units | option | single | double | double |
| Drawing | 2022/0100-0000-0200 | 2031 | 2032 | 2062 |
| V-25 | X | X | ---- | ---- |
| V-56 | X | X | X | X |
| V-65 | X | X | X | X |
| V-77 | X | X | X | X |
| V-90 | X | X | X | X |
| V-105 | X | X | X | X |

| BASKET | | | | | | | | |
|--|---------|---------------------------------------|---------------------------------------|---------------------------------------|---------|---------|---------|---------|
| Model | C0 | CT-01 see Sec. 11, Notes 3), 5) | CT-02 see Sec. 11, Notes 4), 5) | CT-03 see Sec. 11, Notes 4), 5) | C1 | C2 | C3 | C4 |
| Size [m] | 0.7x0.8 | 0.8x1.0 | 1.0x1.2 | 0.8x1.2 | 1.0x1.2 | 1.0x1.0 | 1.1x1.3 | 1.2x1.6 |
| Drawing | 3000 | 3200 | 3202 | 3203 | 3001 | 3002 | 3003 | 3004 |
| V-25 | ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- |
| V-56 | 402 | 530 | 549 | 549 | 549 | 549 | ---- | ---- |
| V-65 | ---- | 536 | 638 | 584 | 638 | 638 | 638 | ---- |
| V-77 | ---- | 540 | 756 | 589 | 756 | 756 | 756 | 756 |
| V-90 | ---- | ---- | 770 | 595 | 878 | 878 | 878 | 878 |
| V-105 | ---- | ---- | 782 | 607 | 1 032 | ---- | 1 032 | 1032 |
| * Compatibility and maximum mass in [kg] | | | | | | | | |

| BASKET | | | BOTTOM END | |
|--|-------------------------------|-----------|-----------------------------|----------------------------|
| Model | CV-08 see Sec. 11, Note 6) | C10 | SOLO see Sec. 11 Note 7) | DUO see Sec. 11 Note 7) |
| Size | 1.5x2.6 | 1.15x1.45 | ---- | ----- |
| Drawing | 3108 | 3010 | 5001 | 5002 |
| V-25 | ---- | ---- | 250 | ---- |
| V-56 | ---- | ---- | ---- | 450 |
| V-65 | ---- | 638 | ---- | ---- |
| V-77 | ---- | 756 | ---- | ---- |
| V-90 | ---- | 878 | ---- | ---- |
| V-105 | 1032 | 1 032 | ---- | ---- |
| * Compatibility and maximum mass in [kg] | | | | |

5.3 Notes

1) *

| | | |
|----------------------------|------|------|
| Fuel cylinder quantity | V-25 | V-56 |
| With DUO | ---- | 2 |
| With SOLO | 1 | ---- |
| For all approved cylinders | | |

2)* (moved – see Sec. 11, Notes 3), 5))

SECTION 6 : SERIES M

Former DGAC Spain Type Certificate Data Sheet reference: 03

6.1. General

| Model | M-42 | M-56 | M-56C | M-65 | M-65C | M-77 | M-77C |
|-------------------------------|--------------------|-------------------|-------------------|--------------------|-------------------|--------------------|--------------------|
| Approved | 22 Apr 2003 | 6 Feb 1998 | 8 Jul 1999 | 25 Mar 1988 | 4 Mar 1997 | 25 Mar 1988 | 30 Apr 2001 |
| Technical Description | | | | | | | |
| Volume [m ³] | 1 200 | 1 590 | 1 590 | 1 840 | 1 840 | 2 200 | 2 200 |
| Number of gores | 24 | 24 | 24 | 24 | 24 | 24 | 24 |
| Disposition | horizontal | horizontal | horizontal | horizontal | horizontal | horizontal | horizontal |
| Max diameter [m] | 13.6 | 14.9 | 13.8 | 16.0 | 14.7 | 16.9 | 15.5 |
| Total height [m] | 17.5 | 18.8 | 17.3 | 19.8 | 21.3 | 21.0 | 24.0 |
| MTOM [kg] | 414 | 550 | 550 | 638 | 635 | 756 | 756 |
| Drawing number | 1038/010 | 1034 | 1056 | 1020 | 1054 | 1009 | 1057 |
| Serial numbers eligible | 42-08 & up | 56-14 & up | 56-15 & up | 65-19 & up | 65-63 & up | 77-17 & up | 77-190 & up |
| Fuel cylinder quantity | | | | | | | |
| Worthington 4100-U4-27 | 2 or more | 2 or more | 2 or more | 2 or more | 2 or more | 2 or more | 2 or more |
| UM Type M-20 or M-20D | 2 or more | 2 or more | 2 or more | 2 or more | 2 or more | 2 or more | 2 or more |
| UM Type M-30 or M-30D | 2 or more | 2 or more | 2 or more | 2 or more | 2 or more | 2 or more | 2 or more |
| UM Type T-25 | 2 or more | 2 or more | 2 or more | 2 or more | 2 or more | 2 or more | 2 or more |
| UM Type M-40 or M-40D | 2 or more | 2 or more | 2 or more | 2 or more | 2 or more | 2 or more | 2 or more |
| Notes on 6.3 | 1)*, 2)* | 1)*, 2)* | 2)* | 2)* | 2)* | 2)* | 2)* |

| Model | M-90 | M-105 | M-120 | M-130 | M-145 | M-160 |
|-------------------------------|-------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| Approved | 4 Mar 1997 | 10 Jun 1988 | 23 Feb 1999 | 30 Nov 1994 | 21 Feb 1995 | 15 Oct 1987 |
| Technical Description | | | | | | |
| Volume [m ³] | 2 550 | 2 950 | 3 400 | 3 680 | 4 105 | 4 550 |
| Number of gores | 24 | 24 | 24 | 24 | 24 | 24 |
| Disposition | horizontal | horizontal | horizontal | horizontal | horizontal | horizontal |
| Max diameter [m] | 17.4 | 18.8 | 19.2 | 20.2 | 20.4 | 21.6 |
| Total height [m] | 21.6 | 23.1 | 23.4 | 24.6 | 24.7 | 26.3 |
| MTOM [kg] | 880 | 1 032 | 1 173 | 1 365 | 1 436 | 1 569 |
| Drawing number | 1040 | 1010 | 1055 | 1021 | 1036 | 1011 |
| Serial numbers eligible | 90-15 & up | 105-03 & up | 120-01 & up | 130-05 & up | 145-01 & up | 160-01 & up |
| Fuel cylinder quantity | | | | | | |
| Worthington 4100-U4-27 | 2 or more | 2 or more | 2 or more | 2 or more | 2 or more | 2 or more |
| UM Type M-20 or M-20D | 2 or more | 2 or more | 2 or more | 2 or more | 2 or more | 2 or more |
| UM Type M-30 or M-30D | 2 or more | 2 or more | 2 or more | 2 or more | 2 or more | 2 or more |
| UM Type T-25 | 2 or more | 2 or more | 2 or more | 2 or more | 2 or more | 2 or more |
| UM Type M-40 or M-40D | 2 or more | 2 or more | 2 or more | 2 or more | 2 or more | 2 or more |

Envelope Options: To include rotation vents (turning vents), pressure scoop or skirt and limited inflated artwork as required.

Envelope Temperature: 1) Not exceed by any concept 130°C
2) Max. continuous temperature 120°C

Burner: See § 6.2 : Burners and Baskets for M models

Basket: See § 6.2 : Burners and Baskets for M models

Maximum Weight: That one permitting the flight with the continuous temperature lower than 120°C, or according to the basket/equipment used based on § 6.2, whatever is less. See Load Chart in Flight Manual Chap. 5.

6.2. Burners and Baskets for M models

| BURNER | | | | | | | | | |
|---------|--------------|-----------|-----------|--------|--------|--------|--------|--------|--------|
| Model | MK-2 / SUPER | | | MK-10 | | | MK-21 | | |
| Units | single | double | triple | single | double | triple | single | double | triple |
| Drawing | 2003/2005 | 2002/2006 | 2004/2007 | 2011 | 2012 | 2013 | 2021 | 2022 | 2023 |
| M-42 | ---- | ---- | ---- | X | ---- | ---- | X | ---- | ---- |
| M-56 | X | X | ---- | X | X | ---- | X | X | ---- |
| M-56C | X | X | ---- | X | X | ---- | X | X | ---- |
| M-65 | X | X | ---- | X | X | ---- | X | X | ---- |
| M-65C | X | X | ---- | X | X | ---- | X | X | ---- |
| M-77 | X | X | ---- | X | X | ---- | X | X | ---- |
| M-77C | X | X | ---- | X | X | ---- | X | X | ---- |
| M-90 | ---- | X | ---- | ---- | X | ---- | X | X | ---- |
| M-105 | ---- | X | X | ---- | X | X | X | X | X |
| M-120 | ---- | X | X | ---- | X | X | ---- | X | X |
| M-130 | ---- | X | X | ---- | X | X | ---- | X | X |
| M-145 | ---- | X | X | ---- | X | X | ---- | X | X |
| M-160 | ---- | X | X | ---- | X | X | ---- | X | X |

| BURNER (contd.) | | | | | |
|-----------------|---------------------|---------|------|--------|--------|
| Model | MK-21 / ELEC | BMK-008 | | MK-32 | |
| Drawing | 2022/0100-0000-0200 | 2031 | 2032 | double | triple |
| M-42 | ---- | X | ---- | ---- | ---- |
| M-56 | X | X | X | X | ---- |
| M-56C | X | X | X | X | ---- |
| M-65 | X | X | X | X | ---- |
| M-65C | X | X | X | X | ---- |
| M-77 | X | X | X | X | ---- |
| M-77C | X | X | X | X | ---- |
| M-90 | | X | X | X | ---- |
| M-105 | X | X | X | X | ---- |
| M-120 | X | X | X | X | X |
| M-130 | X | ---- | X | X | X |
| M-145 | X | ---- | X | X | X |
| M-160 | X | ---- | X | X | X |

| BASKET | | | | | | | | | | |
|----------|---------|---------------------------------------|---------------------------------------|---------------------------------------|---------|---------|---------|---------|---------|---------|
| Model | C0 | CT-01 see Sec. 11, Notes 3), 5) | CT-02 see Sec. 11, Notes 4), 5) | CT-03 see Sec. 11, Notes 4), 5) | C1 | C2 | C3 | C4 | C5 | C6 |
| Size [m] | 0.7x0.8 | 0.8x1.0 | 1.0x1.2 | 0.8x1.2 | 1.0x1.2 | 1.0x1.0 | 1.1x1.3 | 1.2x1.6 | 1.4x2.2 | 1.3x1.8 |
| Drawing | 3000 | 3200 | 3202 | 3203 | 3001 | 3002 | 3003 | 3004 | 3005 | 3006 |
| M-42 | 382 | 414 | 414 | 414 | 414 | 414 | ---- | ---- | ---- | ---- |
| M-56 | 399 | 527 | 550 | 550 | 550 | 550 | ---- | ---- | ---- | ---- |
| M-56C | 399 | 531 | 550 | 550 | 550 | 550 | ---- | ---- | ---- | ---- |
| M-65 | ---- | 537 | 638 | 585 | 638 | 638 | 638 | 638 | ---- | ---- |
| M-65C | ---- | 541 | 635 | 589 | 638 | 638 | 638 | 638 | ---- | ---- |
| M-77 | ---- | 539 | 756 | 587 | 756 | 756 | 756 | 756 | ---- | ---- |
| M-77C | ---- | 545 | 756 | 593 | 756 | 756 | 756 | 756 | ---- | ---- |
| M-90 | ---- | ---- | 772 | 597 | 878 | 878 | 878 | 878 | ---- | ---- |
| M-105 | ---- | ---- | 784 | 609 | 1 032 | ---- | 1 032 | 1 032 | ---- | ---- |
| M-120 | ---- | ---- | 794 | 619 | 1 173 | ---- | 1 173 | 1 173 | 1 173 | 1 173 |
| M-130 | ---- | ---- | 807 | 632 | 1 235 | ---- | 1 365 | 1 365 | 1 365 | 1 321 |
| M-145 | ---- | ---- | ---- | ---- | ---- | ---- | 1 436 | 1 436 | 1 436 | 1 333 |
| M-160 | ---- | ---- | ---- | ---- | ---- | ---- | 1 569 | 1 569 | 1 569 | 1 346 |

* Compatibility and maximum mass [kg]

| BASKET | | | | BOTTOM END | |
|---------------------------------------|---------|--|-----------|--|---|
| Model | C7 | CV-08 <small>see Sec. 11, Note 6)</small> | C10 | SOLO <small>see Sec. 11 Note 7)</small> | DUO <small>see Sec. 11 Note 7)</small> |
| Size | 1.4x2.0 | 1.5x2.6 | 1.15x1.45 | ---- | ----- |
| Drawing | 3007 | 3108 | 3010 | 5001 | 5002 |
| M-42 | ---- | ---- | ---- | 300 | 400 |
| M-56 | ---- | ---- | ---- | ---- | 450 |
| M-56C | ---- | ---- | ---- | ---- | ---- |
| M-65 | ---- | ---- | 638 | ---- | ---- |
| M-65C | ---- | ---- | 638 | ---- | ---- |
| M-77 | ---- | ---- | 756 | ---- | ---- |
| M-77C | ---- | ---- | 756 | ---- | ---- |
| M-90 | ---- | ---- | 878 | ---- | ---- |
| M-105 | ---- | 1 032 | 1 032 | ---- | ---- |
| M-120 | 1 173 | 1 173 | 1 173 | ---- | ---- |
| M-130 | 1 365 | 1 365 | 1 205 | ---- | ---- |
| M-145 | 1 311 | 1 436 | 1 227 | ---- | ---- |
| M-160 | 1 569 | 1 569 | 1 240 | ---- | ---- |
| * Compatibility and maximum mass [kg] | | | | | |

6.3. Notes

1) *

| Fuel cylinder quantity | M-42 | M-56 |
|----------------------------|------|------|
| With DUO | 2 | 2 |
| With SOLO | 1 | ---- |
| For all approved cylinders | | |

2)* (moved – see Sec. 11, Notes 3), 5))

SECTION 7 : SERIES N

Former DGAC Spain Type Certificate Data Sheet reference: 61

7.1. General

| Model | N-180 | N-210 | N-250 | N-300 | N-355 | N-425 | N-450 |
|-------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Approved | 26 Sep 1991 | 31 Oct 1991 | 22 Jun 1992 | 30 Apr 1998 | 10 Jun 1997 | 30 Apr 2001 | 25 Jan 2019 |
| Technical Description | | | | | | | |
| Volume [m ³] | 5 100 | 6 000 | 7 000 | 8 500 | 10 000 | 12 000 | 12 750 |
| Number of gores | 28 | 28 | 28 | 28 | 28 | 28 | 28 |
| Disposition | horizontal | horizontal | horizontal | horizontal | horizontal | horizontal | horizontal |
| Max diameter [m] | 22.5 | 23.8 | 24.9 | 26.6 | 27.5 | 29.5 | 30.0 |
| Total height [m] | 27.3 | 28.9 | 30.3 | 32.4 | 33.3 | 35.5 | 35.2 |
| MTOM [kg] | 1 754 | 2 064 | 2 408 | 2 924 | 3 450 | 4 140 | 4 140 |
| Drawing number | 1031 | 1032 | 1033 | 1034 | 1053 | 1058 | 1070 |
| Serial numbers eligible | 180-01 & up | 210-01 & up | 250-01 & up | 300-01 & up | 355-01 & up | 425-01 & up | 450-01 & up |
| Fuel cylinder quantity | | | | | | | |
| Worthington 4100-U4-27 | 2 or more | 2 or more | 3 or more | 3 or more | 4 or more | 4 or more | 4 or more |
| UM Type M-20 or M-20D | 2 or more | 2 or more | 3 or more | 3 or more | 4 or more | 4 or more | 4 or more |
| UM Type M-30 or M-30D | 2 or more | 2 or more | 3 or more | 3 or more | 4 or more | 4 or more | 4 or more |
| UM Type T-25 | 2 or more | 2 or more | 3 or more | 3 or more | 4 or more | 4 or more | 4 or more |
| UM Type M-40 or M-40D | 2 or more | 2 or more | 3 or more | 3 or more | 4 or more | 4 or more | 4 or more |

| Model | N-500 |
|-------------------------------|-------------|
| Approved | 16 Jun 2009 |
| Technical Description | |
| Volume [m ³] | 14 415 |
| Number of gores | 32 |
| Disposition | horizontal |
| Max diameter [m] | 31.1 |
| Total height [m] | 36.2 |
| MTOM [kg] | 5 000 |
| Drawing number | 1061 |
| Serial numbers eligible | 500-01 & up |
| Fuel cylinder quantity | |
| Worthington 4100-U4-27 | 4 or more |
| UM Type M-20 or M-20D | 4 or more |
| UM Type M-30 or M-30D | 4 or more |
| UM Type T-25 | 4 or more |
| UM Type M-40 or M-40D | 4 or more |

Envelope Options: To include rotation vents (turning vents), pressure scoop or skirt and limited inflated artwork as required.

Envelope Temperature: 1) Not exceed by any concept 130°C
2) Max. continuous temperature 120°C

Burner: See § 7.2 : Burners and Baskets for N models

Basket: See § 7.2 : Burners and Baskets for N models

Maximum Weight: That one permitting the flight with the continuous temperature lower than 120°C, or according to the basket/equipment used based on § 7.2, whatever is less.
See Load Chart in Flight Manual Chap. 5.

7.2. Burners and Baskets for N models

| BURNER | | | | | | | | | |
|---------|--------------|-----------|--------|--------|------|--------|--------|------|---------------------|
| Model | MK-2 / SUPER | | MK-10 | | | MK-21 | | | MK-21 / ELEC |
| Units | triple | quad | double | triple | quad | double | triple | quad | option |
| Drawing | 2004/2007 | 2005/2008 | 2012 | 2013 | 2014 | 2022 | 2023 | 2024 | 2022/0100-0000-0200 |
| N-180 | X | X | X | X | X | X | X | X | X |
| N-210 | X | X | ---- | X | X | X | X | X | X |
| N-250 | ---- | X | ---- | ---- | X | ---- | X | X | X |
| N-300 | ---- | X | ---- | ---- | X | ---- | X | X | X |
| N-355 | ---- | X | ---- | ---- | X | ---- | ---- | X | X |
| N-425 | ---- | X | ---- | ---- | X | ---- | ---- | X | X |
| N-450 | ---- | ---- | ---- | ---- | ---- | ---- | ---- | X | X |
| N-500 | ---- | ---- | ---- | ---- | ---- | ---- | ---- | X | X |

| BURNER (contd.) | | | | | | | |
|-----------------|---------|---------|--------|------|--------|--------|------|
| Model | BMK-008 | BMK-050 | | | MK-32 | | |
| Units | double | double | triple | quad | double | triple | quad |
| Drawing | 2032 | 2052 | 2053 | 2054 | 2062 | 2063 | 2064 |
| N-180 | X | X | ---- | ---- | X | X | X |
| N-210 | X | X | ---- | ---- | X | X | X |
| N-250 | ---- | X | X | ---- | ---- | X | X |
| N-300 | ---- | X | X | ---- | ---- | X | X |
| N-355 | ---- | ---- | X | X | ---- | ---- | X |
| N-425 | ---- | ---- | X | X | ---- | ---- | X |
| N-450 | ---- | ---- | X | X | ---- | ---- | X |
| N-500 | ---- | ---- | ---- | X | ---- | ---- | X |

| BASKET | | | | | | | | | |
|----------|---------|---------|---------|---------|--|---------|---------|---------|---------|
| Model | C5 | C6 | C7 | C8 | CV-08 <small>see Sec. 11, Note 6)</small> | C9 | C11 | C12 | C14 |
| Size [m] | 1.4x2.2 | 1.3x1.8 | 1.4x2.0 | 1.5x2.6 | 1.5x2.6 | 1.6x3.0 | 1.7x3.5 | 1.7x4.5 | 1.7x5.2 |
| Drawing | 3005 | 3006 | 3007 | 3008 | 3108 | 3009 | 3011 | 3012 | 3014 |
| N-180 | 1 745 | 1 368 | 1 607 | 1 754 | 1 672 | 1 754 | ---- | ---- | ---- |
| N-210 | 1 936 | ---- | 1 632 | 2 064 | 1 690 | 2 064 | 2 064 | ---- | ---- |
| N-250 | 1 959 | ---- | ---- | 2 199 | ---- | 2 408 | 2 408 | ---- | ---- |
| N-300 | 1 986 | ---- | ---- | 2 226 | ---- | 2 680 | 2 924 | 2 924 | ---- |
| N-355 | 2 010 | ---- | ---- | 2 250 | ---- | 2 704 | 3 216 | 3 450 | ---- |
| N-425 | 2 010 | ---- | ---- | 2 250 | ---- | 2 814 | 3 332 | 3 712 | 4 140 |
| N-450 | 2 182 | ---- | ---- | 2 435 | ---- | 2 914 | 3 457 | 3 878 | 4 140 |
| N-500 | ---- | ---- | ---- | ---- | ---- | ---- | ---- | 3 813 | 5 000 |

* Compatibility and maximum mass in [kg]

SECTION 8 : SERIES Z

Former DGAC Spain Type Certificate Data Sheet reference: 147

8.1. General

| | |
|-------------------------------|--------------------|
| Model | Z-90 |
| Approved | 23 Jan 1996 |
| Technical Description | |
| Volume [m ³] | 2 550 |
| Number of gores | 16 |
| Disposition | diagonal |
| Max diameter [m] | 18.2 |
| Total height [m] | 22.7 |
| MTOM [kg] | 894 |
| Drawing number | 1025 |
| Serial numbers eligible | 90-14 & up |
| Fuel cylinder quantity | |
| Worthington 4100-U4-27 | 2 or more |
| UM Type M-20 or M-20D | 2 or more |
| UM Type M-30 or M-30D | 2 or more |
| UM Type T-25 | 2 or more |
| UM Type M-40 or M-40D | 2 or more |

Envelope Options: To include rotation vents (turning vents), pressure scoop or skirt and limited inflated artwork as required.

Envelope Temperature: 1) Not exceed by any concept 130°C
2) Max. continuous temperature 120°C

Burner: See § 8.2 : Burners and Baskets for Z models

Basket: See § 8.2 : Burners and Baskets for Z models

Maximum Weight: That one permitting the flight with the continuous temperature lower than 120°C, or according to the basket/equipment used based on § 8.2, whatever is less.
See Load Chart in Flight Manual Chap. 5.

8.2. Burners and Baskets for Z model

| BURNER | | | | | | | |
|---------|--------------|--------|--------|--------|---------------------|---------|--------|
| Model | MK-2 / SUPER | MK-10 | MK-21 | | MK-21 / ELEC | BMK-008 | |
| Units | double | double | single | double | option | single | double |
| Drawing | 2002/2006 | 2012 | 2021 | 2022 | 2022/0100-0000-0200 | 2031 | 2032 |
| Z-90 | X | X | X | X | X | X | X |

| BURNER (Contd.) | |
|-----------------|--------|
| Model | MK-32 |
| Units | double |
| Drawing | 2062 |
| Z-90 | X |

| BASKET | | | | | | | |
|----------|---------|---|---|---------|---------|---------|-----------|
| Model | C1 | CT-02 <small>see Sec. 11, Notes 4), 5)</small> | CT-03 <small>see Sec. 11, Notes 4), 5)</small> | C2 | C3 | C4 | C10 |
| Size [m] | 1.0x1.2 | 1.0x1.2 | 0.8x1.2 | 1.0x1.0 | 1.1x1.3 | 1.2x1.6 | 1.15x1.45 |
| Drawing | 3001 | 3202 | 3203 | 3002 | 3003 | 3004 | 3010 |
| Z-90 | 878 | 768 | 593 | 878 | 878 | 878 | 878 |

* Compatibility and maximum mass in [kg]

SECTION 9 : SERIES B

9.1. General

| Model | B-40 | B-50 | B-55 | B-60 | B-70 |
|-------------------------------|-------------|-------------|-------------|-------------|-------------|
| Approved | 03 Sep 2018 | 03 Sep 2018 | 03 Sep 2018 | 03 Sep 2018 | 20 Dec 2013 |
| Technical Description | | | | | |
| Volume [m ³] | 1 143 | 1 428 | 1 549 | 1 715 | 1 982 |
| Number of gores | 12 | 12 | 12 | 12 | 12 |
| Disposition | horizontal | horizontal | horizontal | horizontal | horizontal |
| Max diameter [m] | 12.3 | 13.9 | 14.2 | 14.8 | 15.6 |
| Total height [m] | 18.5 | 19.8 | 20.1 | 20.9 | 21.8 |
| MTOM [kg] | 375 | 450 | 500 | 525 | 600 |
| Drawing number | 1068 | 1067 | 1069 | 1066 | 1064 |
| Serial numbers eligible | 40-01 & up | 50-18 & up | 55-01 & up | 60-01 & up | 70-05 & up |
| Fuel cylinder quantity | | | | | |
| Worthington 4100-U4-27 | 2 or more | 2 or more | 2 or more | 2 or more | 2 or more |
| UM Type M-20 or M-20D | 2 or more | 2 or more | 2 or more | 2 or more | 2 or more |
| UM Type M-30 or M-30D | 2 or more | 2 or more | 2 or more | 2 or more | 2 or more |
| UM Type T-25 | 2 or more | 2 or more | 2 or more | 2 or more | 2 or more |
| UM Type M-40 or M-40D | 2 or more | 2 or more | 2 or more | 2 or more | 2 or more |
| Notes on 9.3 | 1)* | 1)* | 1)* | 1)* | 1)* |

- Envelope Options:** To include pressure scoop.
- Envelope Temperature:** 1) Not exceed by any concept 130°C
2) Max. continuous temperature 120°C
- Burner:** See § 9.2 : Burners and Baskets for B models
- Basket:** See § 9.2 : Burners and Baskets for B models
- Maximum Weight:** That one permitting the flight with the continuous temperature lower than 120°C, or according to the basket/equipment used based on § 9.2, whatever is less.
See Load Chart in Flight Manual Chap. 5.

9.2. Burners and Baskets for B model

| BURNER | | | | | |
|---------|--------|--------|---------|--------|-------|
| Model | MK-21 | | BMK-008 | | MK-32 |
| | single | double | single | double | |
| Units | 2021 | 2022 | 2031 | 2032 | 2062 |
| Drawing | 2021 | 2022 | 2031 | 2032 | 2062 |
| B-40 | X | ---- | X | ---- | ---- |
| B-50 | X | ---- | X | ---- | ---- |
| B-55 | X | X | X | X | X |
| B-60 | X | X | X | X | X |
| B-70 | X | X | X | X | X |

| BASKET | | | | | | | | | |
|--|---|---|---|---------|---------|---------|---------|-----------|---|
| Model | CT-01 <small>see Sec. 11, Notes 3), 5)</small> | CT-02 <small>see Sec. 11, Notes 4), 5)</small> | CT-03 <small>see Sec. 11, Notes 5), 6)</small> | C0 | C1 | C2 | C3 | C10 | DUO <small>see Sec. 11 Note 7)</small> |
| Size [m] | 0.8x1.0 | 1.0x1.2 | 0.8x1.2 | 0.7x0.8 | 1.0x1.2 | 1.0x1.0 | 1.1x1.3 | 1.15x1.45 | ----- |
| Drawing | 3200 | 3202 | 3203 | 3000 | 3001 | 3002 | 3003 | 3010 | 5002 |
| B-40 | 375 | ---- | 375 | 361 | ---- | 375 | ---- | ---- | 375 |
| B-50 | 450 | 450 | 450 | 366 | 450 | 450 | ---- | ---- | 419 |
| B-55 | 491 | 500 | 500 | 368 | 500 | 500 | ---- | ---- | 421 |
| B-60 | 493 | 525 | 525 | 370 | 525 | 525 | ---- | ---- | 423 |
| B-70 | 498 | 600 | 550 | 375 | 600 | 600 | 600 | 600 | 428 |
| * Compatibility and maximum mass in [kg] | | | | | | | | | |

| BASKET | |
|--|--|
| Model | SOLO <small>see Sec. 11 Note 7)</small> |
| Size [m] | ----- |
| Drawing | 5001 |
| B-40 | 300 |
| B-50 | ---- |
| B-55 | ---- |
| B-60 | ---- |
| B-70 | ---- |
| * Compatibility and maximum mass in [kg] | |

9.3 Notes

1) *

| Fuel cylinder quantity | B-40 | B-50 | B-55 | B-60 | B-70 |
|---------------------------------------|------|------|------|------|------|
| With SOLO | 1 | ---- | ---- | ---- | ---- |
| With DUO | 2 | 2 | 2 | 2 | 2 |
| For all approved cylinders per Note 5 | | | | | |

See also Sec. 11, Notes 3), 5)

SECTION 10 : SERIES G

10.1. General

| | |
|-------------------------------|-------------------|
| Model | G-90 |
| Approved | 23/10/2015 |
| Technical Description | |
| Volume [m ³] | 2550 |
| Number of gores | 8 |
| Disposition | horizontal |
| Max diameter [m] | 18.3 |
| Total height [m] | 21.1 |
| MTOM [kg] | 878 |
| Drawing number | 1065 |
| Serial numbers eligible | 90-139 & up |
| Fuel cylinder quantity | |
| Worthington 4100-U4-27 | 2 or more |
| UM Type M-20 or M-20D | 2 or more |
| UM Type M-30 or M-30D | 2 or more |
| UM Type T-25 | 2 or more |
| UM Type M-40 or M-40D | 2 or more |

Envelope Options: To include pressure scoop.

Envelope Temperature: 1) Not exceed by any concept 130°C
2) Max. continuous temperature 120°C

Burner: See § 10.2 : Burners and Baskets for G models

Basket: See § 10.2 : Burners and Baskets for G models

Maximum Weight: That one permitting the flight with the continuous temperature lower than 120°C, or according to the basket/equipment used based on § 10.2, whatever is less.
See Load Chart in Flight Manual Chap. 5.

10.2. Burners and Baskets for G model

| BURNER | | | | | | |
|---------|--------|--------|--------|---------|--------|--------|
| Model | MK-10 | MK-21 | | BMK-008 | | MK-32 |
| Units | double | single | double | single | double | double |
| Drawing | 2012 | 2021 | 2022 | 2031 | 2032 | 2062 |
| G-90 | X | X | X | X | X | X |

| BASKET | | | | | | | |
|--|---|---|---------|---------|---------|---------|-----------|
| Model | CT-02 <small>see Sec. 11, Notes 4), 5)</small> | CT-03 <small>see Sec. 11, Notes 5), 6)</small> | C1 | C2 | C3 | C4 | C10 |
| Size [m] | 1.0x1.2 | 0.8x1.2 | 1.0x1.2 | 1.0x1.0 | 1.1x1.3 | 1.2x1.6 | 1.15x1.45 |
| Drawing | 3202 | 3203 | 3001 | 3002 | 3003 | 3004 | 3010 |
| G-90 | 835 | 662 | 878 | 878 | 878 | 878 | 878 |
| * Compatibility and maximum mass in [kg] | | | | | | | |

SECTION 11 : NOTES

| | |
|--------|--|
| Note 1 | The system FDS of deflation can be installed optionally according to drawings 1031/72, 1031/75 and 1031/76 in all models. |
| Note 2 | Data Sheets corresponding to former DGAC-ES TCs have been modified to include: <ul style="list-style-type: none">- Optional Electric Burner MK-21- Models SOLO and DUO, chair type gondola- New format of Data Sheet- Comprising exclusively standard envelope shapes |
| Note 3 | Additional compatibility information: Basket CT-01 is approved for flight using the following burners: <ul style="list-style-type: none">- MK-21 Single (or MK-21/ELEC single)- BMK-008 Single |
| Note 4 | Additional compatibility information: Baskets CT-02 and CT-03 are approved for flight using the following burners: <ul style="list-style-type: none">- MK-21 Single- MK-21 Double- BMK-008 Single- BMK-008 Double- MK-32 Double |
| Note 5 | Additional compatibility information: Baskets CT-01, CT-02 and CT-03 are approved for flight using external mounting of fuel cylinders with one of these fuel cylinders combinations (see Flight Manual Supplement No. 39, Issue 4 or later approved revision): two Worthington 4100-U4-27, two UM Type M-20/M-20D, two UM Type M-30/M-30D, four Worthington 4100-U4-27, four UM Type M-20/M-20D, four UM Type M-30/M-30D, two Worthington 4100-U4-27 plus two UM Type M-20/M-20D, two Worthington 4100-U4-27 plus two UM Type M-30/M-30D, two UM Type M-20/M-20D plus two UM Type M-30/M-30D. |
| Note 6 | Additional compatibility information: Basket CV-08 is approved for flight using the following burners: <ul style="list-style-type: none">- MK-10 Double- MK-10 Triple- MK-21 Double- MK-21 Triple- BMK-008 Double- BMK-050 Double- BMK-050 Triple- MK-32 Double- MK-32 Triple |
| Note 7 | Additional compatibility information: SOLO and DUO bottom ends are also approved for flight using the following burner: <ul style="list-style-type: none">- BMK-008 Single |

ADMINISTRATIVE SECTION

Acronyms & Abbreviations

EASA European Union Aviation Safety Agency
TCDS Type Certificate Data Sheet

Type Certificate Holder Record

Ultramagic, S.A.
Aerodrom Igualada-Odena s/n
08711 Odena
Spain

Change Record

| | | | | | | | | | | | | | | | | | | | | | | |
|-------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| page | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 |
| issue | 23 | 20 | 23 | 13 | 19 | 21 | 19 | 21 | 19 | 20 | 19 | 21 | 18 | 20 | 21 | 23 | 23 | 20 | 23 | 22 | 22 | 22 |

-END-