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

TE.CERT.00137-002 © European Union Aviation Safety Agency. All rights reserved. ISO9001 Certified.

Proprietary document. Copies are not controlled. Confirm revision status through the EASA-Internet/Intranet.

CONTENTS

SECTION 1 : GENERAL

I. General (applicable to all models)
II. Certification basis
III. Common data to all models

SECTION 2 : SERIES H

2.1. General
2.2. Burners and Baskets for H models
2.3. Notes

SECTION 3 : SERIES S

3.1. General
3.2. Burners and Baskets for S models
3.3. Notes

SECTION 4 : SERIES T

4.1. General
4.2. Burners and Baskets for T models

SECTION 5 : SERIES V

5.1. General
5.2. Burners and Baskets for V models
5.3. Notes

SECTION 6 : SERIES M

6.1. General
6.2. Burners and Baskets for M models
6.3. Notes

SECTION 7 : SERIES N

7.1. General
7.2. Burners and Baskets for N models

SECTION 8 : SERIES Z

8.1. General
8.2. Burners and Baskets for Z models

SECTION 9 : SERIES B

9.1. General
9.2. Burners and Baskets for B models
9.3. Notes

TE.CERT.00137-002 © European Union Aviation Safety Agency. All rights reserved. ISO9001 Certified.

Proprietary document. Copies are not controlled. Confirm revision status through the EASA-Internet/Intranet.

SECTION 10 : SERIES G

10.1. General
10.2. Burners and Baskets for G models

SECTION 11 : NOTES

ADMINISTRATIVE SECTION

TE.CERT.00137-002 © European Union Aviation Safety Agency. All rights reserved. ISO9001 Certified.

Proprietary document. Copies are not controlled. Confirm revision status through the EASA-Internet/Intranet.

SECTION 1: GENERAL (applicable to all models)

I. GENERAL

1. Data Sheet No: EASA.BA.014 Issue Date: 20 December 2023

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 T-150, T-180 and T-210 the applied rule corresponds to 14 CFR Part 31, Amdt. 7, 24 May 1996.

For model V-25 the applied rule corresponds to 14 CFR Part 31, Amdt. 7, 24 May 1996, and Special Condition: EASA CS 31HB, draft dated 27 February 2003.

For model S-50 and N-500 the applied rule corresponds to 14 CFR Part 31, Amdt. 7, 24 May 1996 and CS-31HB, 27 February 2009.

For model G-90, N-370, N-450, N-550 the applied rule corresponds to CS-31HB/1 (Amdt 1), 12 December 2011.

For model B-26, B-40, B-50, B-55, B-60, B-70, S-70, M-56Z, M-60Z, M-65Z, M-70Z and M-74Z the applied rule corresponds to 14 CFR Part 31, Amdt. 7, 24 May 1996 and CS-31HB/1 (Amdt 1), 12 December 2011.

TE.CERT.00137-002 © European Union Aviation Safety Agency. All rights reserved. ISO9001 Certified.

Proprietary document. Copies are not controlled. Confirm revision status through the EASA-Internet/Intranet.

For burners MK-2 the applied rule corresponds to 14 CFR Part 31, Amdt. 4, from 11 September 1980.

For burners MK-2 Super and MK-10 the applied rule corresponds to 14 CFR Part 31, Amdt. 5, from 18 August 1990.

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-2, MK-2 Super and MK-10. A special test programme was established to ensure the equivalent level of safety.

For Burner MK-21 (Single, Double, Triple and Quadruple, including the Electric variant), the applied rule is 14 CFR Part 31 Amdt. 31-7, from 24/May/1996.

For burners BMK-008 and BMK-050 the applied rule corresponds to 14 CFR Part 31, Amdt. 7, 24 May 1996, and Special Condition: EASA CS 31HB, draft dated 27 February 2003.

For Burner MK-32 the applied rules are 14 CFR Part 31 Amdt. 31-7, from 24/May/1996, CS-31HB Amdt.1, 05/Dec/2011 and Special Conditions based on CS-23 and 14 CFR Part 23.

For Baskets C-10 and C-11 the applied rule is 14 CFR Part 31 Amdt. 31-5, from 18/Aug/1990.

For Basket C-12 the applied rule is 14 CFR Part 31 Amdt. 31-7, from 24/May/1996

For SOLO and DUO bottom end the applied rules are 14 CFR Part 31, Amdt. 7, 24 May 1996, and Special condition: EASA CS 31HB, draft dated 27 February 2003.

For Baskets C-14 and CT-01, the applied rules are 14 CFR Part 31 Amdt. 31-7, from 24/May/1996 and CS-31HB, 27 February 2009.

For Baskets CT-02, CT-03 CV-06 and CV-08 the applied rules are 14 CFR Part 31 Amdt. 31-7, from 24/May/1996 and CS-31HB Amdt.1, 05/Dec/2011. For CV-06 and CV-08 Basket, Special Conditions based on CS-31HA Draft are also applied.

For Basket C-15 the applied rule is CS-31HB Amdt.1, 05/Dec/2011.

For Cylinders T-25, M-20/M-20D, M-30/M-30D and M-40/M-40D, the applied rule is 14 CFR Part 31 Amdt. 31-5, from 18/Aug/1990.

For Cylinder W-2.8, the applied rules are 14 CFR Part 31 Amdt. 31-7, from 24/May/1996 and CS-31HB Amdt.1, 05/Dec/2011.

TE.CERT.00137-002 © European Union Aviation Safety Agency. All rights reserved. ISO9001 Certified.

Proprietary document. Copies are not controlled. Confirm revision status through the EASA-Internet/Intranet.

III. COMMON DATA TO ALL MODELS

Equipment:	for FAR Part 31:
	- 1 Altimeter
	- 1 Rate of climb/descent indicator (variometer)
	- 1 Remaining fuel quantity gauge for each fuel cell
	
	for CS 31HB (draft February 2007) in addition:
	- 1 Fuel pressure gauge for each burner
	
	for CS 31HB, February 2009, and CS 31HB/1, December 2011 in addition:
	- 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
	
	for all balloons:
	- Alternative means for burner ignition (lighter or similar)
	- 1 Envelope limit temperature indicator
	- Fire extinguisher
	- Flight Manual, EASA approved
	
	Additional operational equipment may be required by national legislation

Fuel:	Commercial LPG, usually propane, except if burner is configured for butane
Minimum crew:	1 pilot
Compatibility with approved parts of other manufacturers:	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
Maintenance schedule:	Annual or 100 hours inspections, whichever applies earlier one and following the Flight Manual and Maintenance Manual corresponding to the specific balloon configuration
Operation and Service Instructions:	Flight Manual for Ultramagic Balloons and applicable Supplements – or later approved revisions Maintenance Manual for Ultramagic Balloons and applicable Supplements - or later accepted revisions 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

TE.CERT.00137-002 © European Union Aviation Safety Agency. All rights reserved. ISO9001 Certified.

Proprietary document. Copies are not controlled. Confirm revision status through the EASA-Internet/Intranet.

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 [m³]	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 Options: Scoop or skirt. Rotation vents (see Note 8). Artwork banners.

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

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 120ºC, 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 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	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 see Sec. 11 Note 7)	DUO see Sec. 11 Note 7)
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 120ºC, 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 nº CB8327 and CB8337 for the burner.

Maximum Weight: 250 kg, or that one permitting the flight with the continuous temperature lower than 120ºC, 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.

TE.CERT.00137-002 © European Union Aviation Safety Agency. All rights reserved. ISO9001 Certified.

Proprietary document. Copies are not controlled. Confirm revision status through the EASA-Internet/Intranet.

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 [m³]	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: Scoop or skirt. Rotation vents (see Note 8). Artwork banners.

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

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 120ºC, 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

TE.CERT.00137-002 © European Union Aviation Safety Agency. All rights reserved. ISO9001 Certified.

Proprietary document. Copies are not controlled. Confirm revision status through the EASA-Internet/Intranet.

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-06 see Sec. 11, Notes 6), 9)	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	1.5x1.7	1.5x2.6	1.15x1.45	------
Drawing	3005	3006	3007	3106	3108	3010	5002
S-50	----	----	----	----	----	878	450
S-70	----	----	----	----	----	----	450
S-90	----	----	----	878	----	878	----
S-105	----	----	----	1 032	1 032	1 032	----
S-130	1 365	1 321	1 365	1 365	1 365	1 205	----
S-160	1 569	1 333	1 569	1 479	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		

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 [m³]	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: Scoop or skirt. Rotation vents. Artwork banners.

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

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 120ºC, 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-06 see Sec. 11, Note 6), 9)	CV-08 see Sec. 11, Note 6)	C9	C10
Size[m]	1.1x1.3	1.2x1.6	1.4x2.2	1.3x1.8	1.4x2.0	1.5x2.6	1.5x1.7	1.5x2.6	1.6x3.0	1.15x1.45
Drawing	3003	3004	3005	3006	3007	3008	3106	3108	3009	3010
T-150	1 465	1 465	1 465	1 355	1 465	----	1 465	1 465	----	1 256
T-180	----	----	1 754	1 372	1 611	1 754	1 510	1 676	1 754	----
T-210	----	----	1 930	----	1 626	2 070	----	1 684	2 070	----
* Compatibility and maximum mass in [kg]										

BASKET	
Model	C11
Size[m]	1.7x3.5
Drawing	3011
T-150	----
T-180	----
T-210	2 070
* Compatibility and maximum mass in [kg]	

TE.CERT.00137-002 © European Union Aviation Safety Agency. All rights reserved. ISO9001 Certified.

Proprietary document. Copies are not controlled. Confirm revision status through the EASA-Internet/Intranet.

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 [m³]	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 Options: Scoop or skirt. Rotation vents (see Note 8). Artwork banners.

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

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 120ºC, 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-06 see Sec. 11, Note 6), 9)	CV-08 see Sec. 11, Note 6)	C10	SOLO see Sec. 11-Notes 7)	DUO see Sec. 11 Note 7)
Size	1.5x1.7	1.5x2.6	1.15x1.45	-----	------
Drawing	3106	3108	3010	5001	5002
V-25	----	----	----	250	----
V-56	----	----	----	----	450
V-65	----	----	638	----	----
V-77	----	----	756	----	----
V-90	878	----	878	----	----
V-105	1 032	1 032	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-56Z**	**M-60Z**	**M-65**	**M-65C**
Approved	**22 Apr 2003**	**6 Feb 1998**	**8 Jul 1999**	**11 Jul 2023**	**11 Jul 2023**	**25 Mar 1988**	**4 Mar 1997**
Technical Description							
Volume [m³]	1 200	1 590	1 590	1 590	1 700	1 840	1 840
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	13.7	14	16.0	14.7
Total height [m]	17.5	18.8	17.3	22	22.5	19.8	21.3
MTOM [kg]	414	550	550	549	588	638	635
Drawing number	1038/010	1034	1056	1075	1076	1020	1054
Serial numbers eligible	42-08 & up	56-14 & up	56-15 & up	56-71 & up	60-03 & up	65-19 & up	65-63 & 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-65Z**	**M-70Z**	**M-74Z**	**M-77**	**M-77C**	**M-90**	**M-105**
Approved	**11 Jul 2023**	**11 Jul 2023**	**26 Jan 2021**	**25 Mar 1988**	**30 Apr 2001**	**4 Mar 1997**	**10 Jun 1988**
Technical Description							
Volume [m³]	1 840	1 982	2 100	2 200	2 200	2 550	2 950
Number of gores	24	24	24	24	24	24	24
Disposition	horizontal	horizontal	horizontal	horizontal	horizontal	horizontal	horizontal
Max diameter [m]	14.35	14.70	15.0	16.9	15.5	17.4	18.8
Total height [m]	23	23.5	24.0	21.0	24.0	21.6	23.1
MTOM [kg]	636	686	710	756	756	880	1 032
Drawing number	1077	1078	1071	1009	1057	1040	1010
Serial numbers eligible	65-240 & up	70-41 & up	74-01 & up	77-17 & up	77-190 & up	90-15 & up	105-03 & 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	2)*	2)*	2)*	2)*	2)*	2)*	2)*

Model	**M-120**	**M-130**	**M-145**	**M-160**
Approved	**23 Feb 1999**	**30 Nov 1994**	**21 Feb 1995**	**15 Oct 1987**
Technical Description				
Volume [m³]	3 400	3 680	4 105	4 550
Number of gores	24	24	24	24
Disposition	horizontal	horizontal	horizontal	horizontal
Max diameter [m]	19.2	20.2	20.4	21.6
Total height [m]	23.4	24.6	24.7	26.3
MTOM [kg]	1 173	1 365	1 436	1 569
Drawing number	1055	1021	1036	1011
Serial numbers eligible	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
UM Type M-20 or M-20D	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
UM Type T-25	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
Notes on 6.3	2)*	2)*		

Envelope Options: Scoop or skirt. Rotation vents (see Note 8). Artwork banners.

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

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 120ºC, 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-56Z	----	----	----	----	----	----	X	X	----
M-60Z	----	----	----	----	----	----	X	X	----
M-65	X	X	----	X	X	----	X	X	----
M-65C	X	X	----	X	X	----	X	X	----
M-65Z	----	----	----	----	----	----	X	X	----
M-70Z	----	----	----	----	----	----	X	X	----
M-74Z	----	----	----	----	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-56Z	X	X	X	X	----
M-60Z	X	X	X	X	----
M-65	X	X	X	X	----
M-65C	X	X	X	X	----
M-65Z	X	X	X	X	----
M-70Z	X	X	X	X	----
M-74Z	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 (Compatibility and maximum mass [kg])

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-56Z	----	549	549	549	549	549	549	549	----	----
M-60Z	----	553	588	588	588	588	588	588	----	----
M-65	----	537	638	585	638	638	638	638	----	----
M-65C	----	541	635	589	638	638	638	638	----	----
M-65Z	----	568	636	620	636	636	636	636	----	----
M-70Z	----	571	686	623	686	686	686	686	----	----
M-74Z	----	566	710	618	710	710	710	710	----	----
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	1 346

	BASKET				BOTTOM END	
Model	C7	CV-06 see Sec. 11, Note 6), 9)	CV-08 see Sec. 11, Note 6)	C10	SOLO see Sec. 11 Notes 7)	DUO see Sec. 11 Note 7)
Size	1.4x2.0	1.5x1.7	1.5x2.6	1.15x1.45	----	-----
Drawing	3007	3106	3108	3010	5001	5002
M-42	----	----	----	----	300	400
M-56	----	----	----	----	----	450
M-56C	----	----	----	----	----	----
M-56Z	----	----	----	549	----	----
M-60Z	----	----	----	588	----	----
M-65	----	----	----	638	----	----
M-65C	----	----	----	638	----	----
M-65Z	----	----	----	636	----	----
M-70Z	----	----	----	686	----	----
M-74Z	----	----	----	710	----	----
M-77	----	----	----	756	----	----
M-77C	----	----	----	756	----	----
M-90	----	880	----	878	----	----
M-105	----	1 032	1 032	1 032	----	----
M-120	1 173	1 173	1 173	1 173	----	----
M-130	1 365	1 365	1 365	1 205	----	----
M-145	1 311	1 436	1 436	1 227	----	----
M-160	1 569	1 482	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), 4), 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-370	N-425
Approved	**26 Sep 1991**	**31 Oct 1991**	**22 Jun 1992**	**30 Apr 1998**	**10 Jun 1997**	**25 Oct 2022**	**30 Apr 2001**
Technical Description							
Volume [m³]	5 100	6 000	7 000	8 500	10 000	10 480	12 000
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	28.2	29.5
Total height [m]	27.3	28.9	30.3	32.4	33.3	33.2	35.5
MTOM [kg]	1 754	2 064	2 408	2 924	3 450	3 450	4 140
Drawing number	1031	1032	1033	1034	1053	1074	1058
Serial numbers eligible	180-01 & up	210-01 & up	250-01 & up	300-01 & up	355-01 & up	370-01 & up	425-01 & 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-450	N-500	N-550
Approved	**25 Jun 2019**	**16 Jun 2009**	**18 Dec 2023**
Technical Description			
Volume [m³]	12 750	14 415	15 574
Number of gores	28	32	32
Disposition	horizontal	horizontal	horizontal
Max diameter [m]	30.0	31.1	32.1
Total height [m]	35.2	36.2	37.3
MTOM [kg]	4 140	5 000	5 000
Drawing number	1070	1061	1079
Serial numbers eligible	450-01 & up	500-01 & up	550-01 & up
Fuel cylinder quantity			
Worthington 4100-U4-27	4 or more	4 or more	4 or more
UM Type M-20 or M-20D	4 or more	4 or more	4 or more
UM Type M-30 or M-30D	4 or more	4 or more	4 or more
UM Type T-25	4 or more	4 or more	4 or more
UM Type M-40 or M-40D	4 or more	4 or more	4 or more

Envelope Options: Scoop or skirt. Rotation vents. Artwork banners.

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

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 120ºC, or according to the basket/equipment used based on § 7.2, whatever is less.
See Load Chart in Flight Manual Chap. 5.

TE.CERT.00137-002 © European Union Aviation Safety Agency. All rights reserved. ISO9001 Certified.

Proprietary document. Copies are not controlled. Confirm revision status through the EASA-Internet/Intranet.

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-370	----	----	----	----	----	----	----	X	----
N-425	----	X	----	----	X	----	----	X	X
N-450	----	----	----	----	----	----	----	X	X
N-500	----	----	----	----	----	----	----	X	X
N-550	----	----	----	----	----	----	----	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-370	----	----	X	X	----	----	X
N-425	----	----	X	X	----	----	X
N-450	----	----	X	X	----	----	X
N-500	----	----	----	X	----	----	X
N-550	----	----	----	X	----	----	X

BASKET											
Model	C5	C6	C7	C8	CV-06 see Sec. 11, Note 6), 9)	CV-08 see Sec. 11, Note 6)	C9	C11	C12 see Sec. 11, Note 9)	C14	C15 see Sec. 11, Note 9)
Size [m]	1.4x2.2	1.3x1.8	1.4x2.0	1.5x2.6	1.5x1.7	1.5x2.6	1.6x3.0	1.7x3.5	1.7x4.5	1.7x5.2	1.6x6.1
Drawing	3005	3006	3007	3008	3106	3108	3009	3011	3012	3014	3015
N-180	1 745	1 368	1 607	1 754	1 509	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-370	2 130	----	----	2 338	----	----	2 862	3 405	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	5 000
N-550	----	----	----	----	----	----	----	----	4 018	5 000	5 000
* Compatibility and maximum mass in [kg]											

TE.CERT.00137-002 © European Union Aviation Safety Agency. All rights reserved. ISO9001 Certified.

Proprietary document. Copies are not controlled. Confirm revision status through the EASA-Internet/Intranet.

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 [m³]	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: Scoop or skirt. Rotation vents. Artwork banners.

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

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 120ºC, 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 see Sec. 11, Notes 4), 5)	CT-03 see Sec. 11, Notes 4), 5)	C2	C3	C4	C10	CV-06 see Sec. 11, Note 6), 9)
Size [m]	1.0x1.2	1.0x1.2	0.8x1.2	1.0x1.0	1.1x1.3	1.2x1.6	1.15x1.45	1.5x1.7
Drawing	3001	3202	3203	3002	3003	3004	3010	3106
Z-90	878	768	593	878	878	878	878	894
* Compatibility and maximum mass in [kg]								

SECTION 9 : SERIES B

9.1. General

Model	**B-26**	**B-40**	**B-50**	**B-55**	**B-60**	**B-70**
Approved	**08 Oct 2020**	**03 Sep 2018**	**03 Sep 2018**	**03 Sep 2018**	**03 Sep 2018**	**20 Dec 2013**
Technical Description						
Volume [m³]	735	1 143	1 428	1 549	1 715	1 982
Number of gores	12	12	12	12	12	12
Disposition	horizontal	horizontal	horizontal	horizontal	horizontal	horizontal
Max diameter [m]	11.1	12.3	13.9	14.2	14.8	15.6
Total height [m]	16.2	18.5	19.8	20.1	20.9	21.8
MTOM [kg]	330	375	450	500	525	600
Drawing number	1072	1068	1067	1069	1066	1064
Serial numbers eligible	26-01 & up	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	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 9.3	1)*	1)*	1)*	1)*	1)*	1)*

Envelope Options: Scoop or skirt. Rotation vents (see Note 8). Artwork banners.

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

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 120ºC, 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
Units	single	double	single	double	double
Drawing	2021	2022	2031	2032	2062
B-26	X	----	X	----	----
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 see Sec. 11, Notes 3), 5)	CT-02 see Sec. 11, Notes 4), 5)	CT-03 see Sec. 11, Notes 4), 5)	C0	C1	C2	C3	C10	DUO see Sec. 11 Note 7)
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-26	330	----	----	330	----	----	----	----	----
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 see Sec. 11 Note 7)
Size [m]	-----
Drawing	5001
B-26	284
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-26	B-40	B-50	B-55	B-60	B-70
With SOLO	1	1	----	----	----	----
With DUO	----	2	2	2	2	2
For all approved cylinders per Note 5						

SECTION 10 : SERIES G

10.1. General

Model	**G-90**
Approved	**23/10/2015**
Technical Description	
Volume [m³]	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: Scoop or skirt. Rotation vents. Artwork banners.

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

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 120ºC, 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 see Sec. 11, Notes 4), 5)	CT-03 see Sec. 11, Notes 4), 5)	C1	C2	C3	C4	C10	CV-06 see Sec. 11, Note 6), 9)
Size [m]	1.0x1.2	0.8x1.2	1.0x1.2	1.0x1.0	1.1x1.3	1.2x1.6	1.15x1.45	1.5x1.7
Drawing	3202	3203	3001	3002	3003	3004	3010	3106
G-90	835	662	878	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: - 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: - 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: - 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: - 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: - BMK-008 Single
Note 8	Rotation vents become mandatory on envelopes combined with the SOLO or DUO Bottom ends.
Note 9	Basket size subject to dimensional tolerances as per design project.

* * *

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	29	22	22	29	29	19	25	19	25	27	25	27	25	27	28	25	28	28	29	29	27	25

page	23	24	25	26
issue	25	27	27	29

-END-