



## TYPE CERTIFICATE

Number: VL507 Issue 2

This certificate, issued to Kavanagh Investment Trust, certifies that, pursuant to Regulation 21.13A of the Civil Aviation Regulations 1998, approval is granted for the following aircraft:

B Series Hot Air Balloon  
C Series Hot Air Balloon  
D Series Hot Air Balloon  
E Series Hot Air Balloon  
EX Series Hot Air Balloon  
G Series Hot Air Balloon

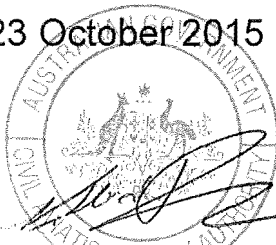
This certificate is valid until suspended or cancelled by the Civil Aviation Safety Authority. The basis of certification is as prescribed in Type Certificate Data Sheet Number VL507 issued by this Authority.

Date of application:

14 September 2007

Date of issuance:

23 October 2015



Peter Nikolic  
Delegate of the Authority

*safe skies for all*

Number: VL507  
Revision: 12

Aircraft: Kavanagh  
B Series  
C Series  
D Series  
E Series  
EX Series  
G Series

Date: 21 March 2023

## TYPE CERTIFICATE DATA SHEET

This data sheet, which is part of the Type Certificate No.VL507, lists the conditions and limitations under which the aircraft for which the Type Certificate was issued meet the airworthiness requirements of the Civil Aviation Safety Authority.

Type Certificate Holder: Kavanagh Investment Trust  
PO Box 53  
Mount Kuring-Gai,  
NSW, 2080  
Australia

### **SECTION 1: General Model Information**

#### **1: Model Definition:**

Envelope: Refer to Sections 2 to 7 and Note 3

Burner: Refer to Sections 2 to 7 and Note 3

Basket: Refer to Sections 2 to 7 and Note 3

Gross Certificated Weight: Refer to Sections 2 to 7 and Note 3

Envelope Temperature: The envelope temperature must not exceed 120°C  
(All models).

Minimum Crew: One (pilot) (All models).

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Maximum Occupants: Not to exceed certificated maximum weight and limitations. Refer to Kavanagh Balloons Hot Air Balloon Flight Manual - Issue 1, Revision 6 January 2023 and Supplements or later CASA approved revision.

Fuel: Commercial LPG or Propane (All models).

Fuel Quantity: As a minimum, all balloons must carry a number of fuel tanks fitted with regulated vapour outlets equal to the number of vapour supply hoses on the burner. If the burner is fitted with liquid feed pilot lights, all fuel tanks can be slave tanks.

As a minimum, all balloons must carry at least one fuel tank for each liquid supply hose on the burner.

Additional fuel tanks of each type may be carried.

## **2: Data Applicable To All Types And Models**

Airworthiness Category: Manned Free Balloon

Certification Basis: CASR Part 31, CAO 101.54 Issue 2, & BCAR31, Issue 2, dated 12th May 2003.

Sealed Drawing Lists: Applicable Sealed Drawing Lists for each type and model variant are shown in Sections 2 to 7.

Equivalent Safety Findings: Kavanagh KBS1 series, KBS2 series and KBS3 series Burners - Equivalent safety accepted against paragraph 3.3, Heater endurance test, on grounds of safe history of operation. File F86/253 refers.

Production Basis: CASA Production Certificate No. 049101

Eligible Serial Numbers:  
(See Note 2)

Type B – higher than 368  
Type C – higher than 335  
Type D – higher than 376  
Type E – higher than 370  
Type EX – higher than 341  
Type G – higher than 343

Equipment: Equipment is listed in the Approved Kavanagh Balloons Hot Air Balloon Flight Manual - Issue 1, Revision 6 January 2023 or later CASA approved revision.

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### **3: Operation and Service Instructions**

1. Flight Manual: Kavanagh Balloons Hot Air Balloon Flight Manual - Issue 1, Revision 6 January 2023 and Supplements or later CASA approved revision.
2. Maintenance Manual: Kavanagh Balloons Maintenance Manual Issue 4, Revision 9, March 2023 (or later revision).
3. Airworthiness Limitations: Kavanagh Balloons Maintenance Manual Issue 4, Revision 9, March 2023 (or later revision).

### **4: Notes**

Note 1: For the purpose of maintenance and inspection a logbook must be maintained with each balloon envelope. If the bottom end components (basket burner, fuel tanks, and instruments) are interchanged with other balloon envelopes, they must be listed in the log book of each envelope with which they are used or, alternatively, a separate log book must be maintained for the components being interchanged.

Note 2: Serial numbers are allocated sequentially in production and are prefixed with the model designation, i.e. E210-370.

Note 3: Sections 2-7 show eligible equipment for each envelope model and these are shown as letter designations, all of which are listed in the Kavanagh Balloons Hot Air Balloon Flight Manual - Issue 1, Revision 6 January 2023 and Supplements or later CASA approved revision.

Refer Section 7.12 of the Flight Manual for selection of approved combinations of components.

Table 1 shows the part numbers and the link of these components to their respective approved drawings.

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**TABLE 1**  
**Component Designations**

<b>BURNERS</b>		
<b>Designation</b>	<b>Part Number</b>	<b>Drawing Numbers</b>
A	KBS1-1 KBS1-2	KAV-C-42-003
B	KBS2-1 KBS3-1	KAV-C-42-002 KAV-GEN-40-001
C	KBS2-2 KBS3-2	KAV-C/D-42-002 KAV-GEN-41-001
D	KBS3-3	KAV-GEN-42-001
E	KBS3-4	KAV-GEN-42-002
F	Reserved	Reserved
G	KBS4-2 Crossfire	KAV-GEN-45-002
H	KBS4-3 Crossfire	KAV-GEN-45-003
I	KBS4-4 Crossfire	KAV-GEN-45-004

<b>BASKETS</b>				
<b>Designation</b>	<b>Part Number</b>	<b>Load Frames</b>	<b>Max. GCW</b>	<b>Drawing Numbers</b>
A	KLW1010 KLW1110 KLW1210 KLW1211	A, B	760kg	KAV-GEN-31-002
	KOB1010 KOB1110 KOB1210	A, B	760kg	KAV-GEN-31-001
A2	KLW1610 KLW1410-UA KLW1510-UA KLW1610-UA	A, B	1200kg	KAV-GEN-31-002

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BASKETS				
Designation	Part Number	Load Frames	Max. GCW	Drawing Numbers
B	KLW1410 KLW1411 KLW1510 KLW1511	A, B	1400kg	KAV-GEN-31-002
	KOB1410 KOB1510 KOB1610 KOB1810	A, B	1400kg	KAV-GEN-31-001
C	KMT1812 KMT2012	A, B	1400kg	KAV-GEN-31-005
	KST1812 KST2012 KST2014	B, C		
	KST2212 KST2214	C		
D	KST2415 KST2515	C	1800kg	KAV-GEN-31-005
E	KST2715 KST2815 KST2816	D, F	2200kg	KAV-GEN-31-005
	KST2715-A KST2815-A KST2816-A KST2816-A-UA	G		
	K4DT2715 K4DT2815 K4DT2915 K4DT3215	D, F	2200kg	KAV-GEN-31-004
	K4DT3416-A	G		

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BASKETS				
Designation	Part Number	Load Frames	Max. GCW	Drawing Numbers
F	K8DT3615	E	2800kg	KAV-GEN-31-003
G	K8DT4015 K8DT4315 K8DT4615 K8DT4615-V K8DT5015 K8DT5015-V	E	3700kg	KAV-GEN-31-003
H	K8DT5616-V	H	4300kg	KAV-GEN-31-003

LOAD FRAMES			
Designation	Part Number	Max. GCW	Drawing Numbers
A	KLF7661-44 KLF7661-44-CBS	1400kg	KAV-GEN-43-001
B	KLF7676-44 KLF7676-44-CB	1400kg	KAV-GEN-43-001
C	KLF1010-44 KLF1010-44-CB KLF1010-44-CB3 KLF1010-48 KLF1010-48-CB KLF1010-48-CB3	1800kg	KAV-GEN-43-002
D	KLF1210-44 KLF1210-44-CBS KLF1210-44-CBL KLF1210-44-CBS3 KLF1210-44-CBL3 KLF1210-48 KLF1210-48-CBS KLF1210-48-CBL KLF1210-48-CBS3 KLF1210-48-CBL3	2200kg	KAV-GEN-43-002
E	KLF2010-88 KLF2010-88-CBS KLF2010-88-CBL KLF2010-88-CBS3 KLF2010-88-CBL3	3700kg	KAV-GEN-43-003

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LOAD FRAMES			
Designation	Part Number	Max. GCW	Drawing Numbers
F	KLF1310-44 KLF1310-44-CBS KLF1310-44-CBL KLF1310-44-CBS3 KLF1310-44-CBL3 KLF1310-48 KLF1310-48-CBS KLF1310-48-CBL KLF1310-48-CBS3 KLF1310-48-CBL3	2200kg	KAV-GEN-43-002
G	KLF1710-48 KLF1710-48-CBS KLF1710-48-CBL KLF1710-48-CBS3 KLF1710-48-CBL3	2200kg	KAV-GEN-43-002
H	KLF2711-88-CBL KLF2711-88-CBS	4300kg	KAV-GEN-43-003

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## SECTION 2: KAVANAGH TYPE B

Sealed Drawing List B-21 dated 11th January 2023, or later CASA approved issue.

Manned free balloon with twenty four horizontally cut semi bulbous gores. The Type B balloons are defined in the general assembly drawings KAV-B-10-002, KAV-B-10-004, KAV-B-10-005. The definition of all models is listed in Table 2.

**Table 2**

Kavanagh Type B Definitions, Limitations and Eligible Equipment

Model	Vol (Ft <sup>3</sup> )	Vol (M <sup>3</sup> )	Drawing	GCW (kg)	Burner	Basket	Load Frame
B-77	77500	2195	KAV-B-20-004	760	B,C,G	A,A2,B,C	A,B
B-105	105000	2973	KAV-B-20-002	1030	C,G	A2,B,C	A,B
B-350	350000	9911	KAV-B-20-005	2800	D,E,H,I	F,G	E
B-400	400000	11327	KAV-B-20-005	3100	E,I	G	E
B-425	425000	12034	KAV-B-20-005	3400	E,I	G	E

**Table 2.1**

Kavanagh Type B reduced GCW options with eligible equipment.

Model	Vol (Ft <sup>3</sup> )	Vol (M <sup>3</sup> )	Drawing	GCW (kg)	Burner	Basket	Load Frame
B-105	105000	2973	KAV-B-20-002	760	C,G	A	A,B
B-400	400000	11327	KAV-B-20-005	2800	E,I	F	E
B-425	425000	12034	KAV-B-20-005	2800	E,I	F	E

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### SECTION 3: KAVANAGH TYPE C

Sealed Drawing List C-15 dated 11th January 2023, or later CASA approved issue.

Manned free balloon with twelve horizontally cut bulbous gores. The Type C balloons are defined in the general assembly drawing KAV-C-10-001. The definition of all variants (models) is listed in Table 3.

### Table 3

## Kavanagh Type C Definitions, Limitations and Eligible Equipment

Model	Vol (Ft³)	Vol (M³)	Drawing	GCW (kg)	Burner	Basket	Load Frame
C-56	56000	1586	KAV-C-20-001	550	A,B,C,G	A,A2,B,C	A,B
C-65	65000	1841	KAV-C-20-001	635	A,B,C,G	A,A2,B,C	A,B
C-77	77500	2195	KAV-C-20-001	760	B,C,G	A,A2,B,C	A,B

## SECTION 4: KAVANAGH TYPE D

Sealed Drawing List D-14 dated 11th January 2023, or later CASA approved issue.

Manned free balloon with sixteen horizontally cut bulbous gores. The Type D balloons are defined in the general assembly drawing KAV-D-10-001. The definition of all variants (models) is listed in Table 4.

### Table 4

## Kavanagh Type D Definitions, Limitations, Eligible Equipment and Serial Numbers

Model	Vol (Ft <sup>3</sup> )	Vol (M <sup>3</sup> )	Drawing	GCW (kg)	Burner	Basket	Load Frame
D-77	77500	2195	KAV-D-20-001	760	B,C,G	A,A2,B,C	A,B
D-84	84000	2379	KAV-D-20-001	824	B,C,G	A2,B,C	A,B
D-90	90000	2549	KAV-D-20-001	902	C,G	A2,B,C	A,B
D-105	105500	2973	KAV-D-20-001	1030	C,G	A2,B,C	A,B

Table 4.1

Kavanagh Type D reduced GCW options with eligible equipment.

Model	Vol (Ft3)	Vol (M3)	Drawing	GCW (kg)	Burner	Basket	Load Frame
D-84	84000	2379	KAV-D-20-001	760	B,C,G	A	A,B
D-90	90000	2549	KAV-D-20-001	760	C,G	A	A,B
D-105	105500	2973	KAV-D-20-001	760	C,G	A	A,B

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## SECTION 5: KAVANAGH TYPE E

Sealed Drawing List E-25 dated 11th January 2023, or later CASA approved issue.

Manned free balloon with twenty horizontally cut bulbous gores. The Type E balloons are defined in the general assembly drawing KAV-E-10-001. The definition of all variants (models) is listed in Table 5.

**Table 5**  
**Kavanagh Type E Definitions, Limitations and Eligible Equipment**

Model	Vol (Ft <sup>3</sup> )	Vol (M <sup>3</sup> )	Drawing	GCW (kg)	Burner	Basket	Load Frame
E-120	120000	3398	KAV-E-20-001	1175	C,G	A2,B,C	A,B,C
E-140	140000	3964	KAV-E-20-001	1300	C,G	B,C	A,B,C
E-160	160000	4531	KAV-E-20-001	1400	C,D,G,H	C,D,E	C,D
E-180	180000	5097	KAV-E-20-001	1450	C,D,G,H	D,E	C,D
E-210	210000	5947	KAV-E-20-001	1900	C,D,E,G,H,I	E	D,F,G
E-240	240000	6796	KAV-E-20-001	2000	D,E,G,H,I	E,F,G	D,E,F,G
E-260	260000	7362	KAV-E-20-001	2200	D,E,G,H,I	E,F,G	D,E,F,G
E-300	300000	8495	KAV-E-20-001	2500	D,E,H,I	F,G	E

**Table 5.1**  
**Kavanagh Type E reduced GCW options with eligible equipment.**

Model	Vol (Ft <sup>3</sup> )	Vol (M <sup>3</sup> )	Drawing	GCW (kg)	Burner	Basket	Load Frame
E-120	120000	3398	KAV-E-20-001	760	C,G	A	A,B
E-140	140000	3964	KAV-E-20-001	760	C,G	A	A,B
E-140	140000	3964	KAV-E-20-001	1200	C,G	A2	A,B
E-180	180000	5097	KAV-E-20-001	1400	C,G	C	C

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## SECTION 7: KAVANAGH TYPE G

Sealed Drawing List G-13 dated 11th January 2023, or later CASA approved issue.

Manned free balloon with twenty eight horizontally cut bulbous gores. The Type G balloon is defined in the general assembly drawing KAV-G-10-001. The definition of all variants (models) is listed in Table 7.

**Table 7**  
**Kavanagh Type G Definitions, Limitations and Eligible Equipment**

Model	Vol (Ft <sup>3</sup> )	Vol (M <sup>3</sup> )	Drawing	GCW (kg)	Burner	Basket	Load Frame
G-450	450000	12743	KAV-G-20-001	3700	E,I	G, H	E, H
G-525	525000	14866	KAV-G-20-001	4300	I	H	H

Note: G-450 with H basket and E load frame is subject to matching flying wires as per drawing KAV-G-20-001.

**Table 7.1**  
**Kavanagh Type G reduced GCW options with eligible equipment.**

Model	Vol (Ft <sup>3</sup> )	Vol (M <sup>3</sup> )	Drawing	GCW (kg)	Burner	Basket	Load Frame
G-450	450000	12743	KAV-G-20-001	2800	E,I	F	E
G-525	525000	14866	KAV-G-20-001	2800	I	F	E
G-525	525000	14866	KAV-G-20-001	3700	I	G	E

Note: G-525 with F or G basket and E load frame is subject to matching flying wires as per drawing KAV-G-20-001.

## SECTION 8: REVISION HISTORY

- (1) Revision 1 corrects a Serial Number anomaly for the Type D Series balloons.
- (2) Revision 2 amends Table 5, E-300 GCW from 2200kgs to 2500 kgs to correct a typographical error.
- (3) Revision 3 amends the whole document to include the latest drawing lists and add new revisions of flight manual and maintenance manual, as well as including Series 4 Crossfire burner and various load frame and basket models. All of the affected tables and component designations are updated.

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- (4) Revision 4 reformatted the whole document including the addition of page 9. Table 1, Baskets, expanded to one part per line. Section 6 amended with the latest EX sealed drawing list and Table 6 amended adding the EX-60.
- (5) Revision 5 amends the whole document including the addition of page 10. New revision of flight manual added. Table 1 changes the KBS4 burner designations and adds the KST2715-A basket part number. Table 1 also adjusted for easier reading. Tables 2 through 7 are updated with the new KBS4 burner designation details. Table 5 reflects the change in minimum burner requirement for the E-240 and E-260 when used with a KBS4 burner.
- (6) Revision 6 amends the whole document. Flight manual and maintenance manual revision details are updated in Section 1. The B-425 model is added to Section 2, Table 2. Current sealed drawing list numbers and dates are updated in sections 2, 3, 4, 5 & 6
- (7) Revision 7 amends the whole document. Group A2 for baskets is added to table 1 and the A2 baskets are added to tables 2, 3, 4, 5 & 6 where applicable. No change to the sealed drawing list numbers as the current drawing revisions for the A2 baskets were already listed in previous sealed drawing lists.
- (8) Revision 8 amends the whole document. Group H for baskets is added to table 1 and the H baskets are added to table 7 where applicable. Current sealed drawing list numbers and dates are updated in sections 2, 3, 4, 5, 6 & 7. Flight manual and maintenance manual are updated to the latest revisions.
- (9) Revision 9 amends the whole document. Two models of single tee baskets are added to the Group E baskets. The E-Type sealed drawing list number and date are updated in section 5
- (10) Revision 10 amends the whole document. EX-70 and EX-90 models added to the EX types in section 6, table 6. Current sealed drawing list numbers and dates are updated in sections 2, 3, 4, 5, 6 & 7. Maintenance manual is updated to the latest revision.
- (11) Revision 11 amends the whole document. EX-77 model is added to the EX types in section 6, table 6. Current sealed drawing list numbers and dates are updated in sections 2, 3, 4, 5, 6 & 7.
- (12) Revision 12 amends the whole document. CAO 101.54 Issue 2 added to the certification basis in section 2. Flight and Maintenance manual are updated to the latest revision. Current sealed drawing list numbers and dates are updated in sections 2, 3, 4, 5, 6 & 7.

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K4DT3416-A basket added to Table 1. Table 1 is updated with basket compatible load frame group data and GCW limit data. Tables 2 through 7 updated with allowable basket and load frame group options consistent with the Flight Manual.

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