Amendment Number	Description	Pages Affected	Date	Approval
8	Record of Amendments updated, List of effective pages updated, Section 2: 2.10 Ambiguity for 340 000 corrected Section 9: Burner Frame CB2371 added to basket CB754. Supplement 8.1: Colt Beer Glass, Colt Flying Kiwi and Super FMG-100 Special Shape added. Supplement 8.21: CB3157 Description corrected, CB947 and CB3505 added, burner frame CB2269 added to basket CB3394	i-v, i-vii, 2-4, 9-6, Supp 8.1: All, Supp 8.21: All,	14:07:2010	Approved by EASA under Approval Number 10030936
9	Record of Amendments updated, List of effective pages updated, Section 9, Table 6: Page 9-5, table completely revised, no new equipment introduced. Page 9-6, Burner Frame CB2192 (older non gimbal style) added to basket CB3360 Appendix 3, A3-1, Conversion factor standardised, reference to tables corrected. Supp. 8-13 Duo Airchair: Addition of Duo Skychariot and Duo Airchair. Supp. 8-14 Cloudhopper Millennium: Addition of part number of chair assembly and applicable cylinders. Supp. 8-15 Wheelchair Baskets: Limitations on occupancy moved from Section 6 to Section 2. Descriptions, cylinder and burner frame applicability updated. Supp. 8-21 Special Baskets: Cylinder and burner frame applicability updated. Baskets CB3520, CB3525 and CB3528 added.	i-v, i-vii, i-viii, 9-5, 9-6, A3-1. Supp 8.13: All, Supp 8.14: All, Supp 8.15: All, Supp 8.21: All.	02:03:2011	Approved by EASA under Approval Number 10034058
10	Record of Amendments updated, List of effective pages updated. Section 6: Description of out of production cylinders moved to new supplement. Section 9: Table 5: Envelopes, Type R baskets added to Z-425, Z-450, Z-600. Table 6: Burner Frames CB750, CB2860 and CB2863 added, burner frame applicability to CB8000 series updated Table 7: out of production cylinders deleted, Table 8: Solenoid and removable burners moved to supplements. Appendix III: Out of production cylinders moved to new supplement, Supplements 8.2-8.4, 8.6-8.8, 8.12-8.16, 8.19-8.20, 8.23-8.26, 8.30, 8.32, 8.35 and 8.36: Maintenance Sections removed (published with Maintenance Manual i10-Amdt 3), editorial updates, previously approved equipment added to 8.13 and 8.16. Supplement 8.21: LBL Burner frame (BA-152-A-002) added to CB994, Baskets CB3196, CB3537, CB3541, CB3543 and CB3545 added. Supplement 8.39: New Supplement, “Out of production cylinders” (approved data)	i-v, i-vii, i-viii, i-xv, 6-10, 6-11, 9-3, 9-5-9-8 A3-1. Supp 8.2-8.4, 8.6-8.8, 8.10, 8.13-8.16, 8.19-8.21, 8.23-8.26, 8.30, 8.32, 8.35, 8.36 and 8.39 All,	25:01:2012	Approved by EASA under Approval Number 10038169
11	Section 2 : Z-750 Added, Z-600 classification corrected (AX14). Section 9 : Table 5: Z-750 added, Z-600 now R type baskets only. Table 6: Baskets CB3060, CB3081 deleted (in Supp 8.15), burner frame applicabilities updated. Basket CB3550 added, Supp. 8.6 Basket Nos. 244 and 265 added, Supp. 8.21 CB301 Series baskets added.	i-v, i-vii, 2-2, 2-4, 2-7, 5-4-5-5, 9-3, 9-6, Supp 8.6: All, Supp 8.21: All	13:07:2012	Approved by EASA under Approval Number 10040615

Amendment Number	Description	Pages Affected	Date	Approval
12	Record of Amendments updated, List of effective pages updated, Section 2: A-530LW added, Para 2.9, Para 2.17 and Table 1 updated (MLM now referenced to table 1) Section 4: Damage check on launch restraint added to pre-flight checklist. Reference to approved hose blanks added to para 4.5.3.1 Section 5: A-530LW added Section 9: A-530LW added, A-450LW basket applicability updated. Z-400, Z-425LW and Z-450 basket applicability updated. Basket CB3570 added	i-v, i-vi, i-vii, 2-4 to 2-7, 4-6, 4-12, 5-4, 5-5, 9-1, 9-3, 9-6.	03:05:2013	Approved by EASA under Approval Number 10044755
13	Record of Amendments updated, List of effective pages updated, Section 2: Minimum Equipment updated. A-425LW, A-500LW added, Para 2.17 and Table 1 updated. Section 4: Table 4.2 flying wire grouping updated, 4.12 Drop Line added. Section 5: Total Permitted lift tables updated. Section 6: 6.3.6 The word “Liquid” added for clarity, 6.5.5: Quick release updated. Section 9: Burner frame compatibility updated, Table 5 updated, Table 6 Burner frame compatibility updated CB2282, CB2283, CQ2018, CQ2027, CQ2028 and obsolete burner frames added for reference. Para 9.3 added for equipment not requiring approval. Supplement 8.21 Basket CB3625 added (C653)	i-v, i-vi, i-vii, i-viii, i-xiii, i-xvi, 2-5, 2-7, 4-20, 5-4, 5-5, 6-6, 6-13, 9-1 to 9-3, 9-5, 9-6, 9-9, 9-10, Supp 8.21: All	10:02:2016	Approved by EASA under Approval Number 10056665/ 10056666

Note: Any new or amended text in the revised page will be indicated by a black vertical line in the right hand margin, and the Amendment Number and the date will be shown at the bottom of the page.

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	i-v	03 May 2013		4-19	29 April 2010
	i-vi	10 February 2016		4-20	10 February 2016
	i-vii	10 February 2016		4-21	Deleted
	i-viii	10 February 2016		4-22	Deleted
	i-ix	Deleted		4-23	Deleted
	i-x	Deleted		4-24	Deleted
	i-xi	29 April 2010		4-25	Deleted
	i-xii	29 April 2010		4-26	Deleted
	i-xiii	10 February 2016		4-27	Deleted
	i-xiv	29 April 2010		4-28	Deleted
	i-xv	25 January 2012			
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				5-2	10 April 2006
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	1-3	10 April 2006		5-5	10 February 2016
	1-4	10 April 2006		5-6	17 December 2007
2	2-1	13 July 2012	6	6-1	25 June 2009
	2-2	13 July 2012		6-2	25 June 2009
	2-3	10 February 2016		6-3	10 April 2006
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	2-7	10 February 2016		6-7	10 April 2006
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				6-9	10 April 2006
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			7	7-1	17 December 2007
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	4-5	10 February 2016	8	8-1	31 July 2008
	4-6	03 May 2013		8-2	31 July 2008
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	4-8	29 April 2010	9	9-1	10 February 2016
	4-9	29 April 2010		9-2	10 February 2016
	4-10	29 April 2010		9-3	10 February 2016
	4-11	29 April 2010		9-4	29 April 2010
	4-12	03 May 2013		9-5	10 February 2016
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	4-14	29 April 2010		9-7	25 January 2012

Section	Page	Date	Section	Page	Date
9	9-8	25 January 2012			
	9-9	10 February 2016			
	9-10	10 February 2016			
Appendices	A1-1 / A1-2	10 April 2006			
	A2-1 / A2-2	31 July 2008			
	A3-1 / A3-2	25 January 2012			
	A4-1 / A4-2	10 April 2006			
	A5-1 / A5-2	29 April 2010			
	A5-3 / A5-4	29 April 2010			

SECTION 5: WEIGHT CALCULATIONS

SECTION 6: BALLOON AND SYSTEMS DESCRIPTION

2.6 SAFETY EQUIPMENT (MINIMUM EQUIPMENT)

The following minimum equipment must be carried:

1. Protective gloves must be available to the pilot.

2. Matches or other independent means of ignition in addition to any igniters built into the burner.

3. A hand fire extinguisher.

4. A rate of climb and descent indicator (variometer) where required (Refer to Section 2.10).

5. An envelope temperature indicator which may either be of the continuous reading type or a type which gives a warning signal.

All minimum equipment must be functional.

2.7 CREW

1. The minimum crew is one pilot.

2. The maximum number of occupants (consisting of crew and passengers) is determined by Sections 2.8, 2.9 and 2.15 below.

2.8 ENVELOPE TEMPERATURE AND LOADING

1. The envelope temperature must not exceed 120ºC, (250ºF).

2. The envelope temperature must be controlled either by use of the envelope thermometer, or by loading according to the loading chart in Section 5.

2.9 WEIGHT RANGE

1. The take-off Mass (TOM) of the balloon must never exceed the Maximum TOM (MTOM) shown in table 1. The applicability of the MTOM, either Standard or Reduced is given on page i-i.

2. If it is desired, for operational or insurance reasons, to alter the MTOM of the balloon, either the Standard or Reduced MTOM, appropriate to the balloon model, may be selected. These permitted MTOM values are shown in Section 2 Table 1. The MTOM in use must be entered as an amendment on page i.i and used for loading calculations.

3. The Minimum Landing Mass (MLM) for normal operation is given in Table 1.

4. For special flights, record attempts etc., with only necessary crew on board, lower masses may be used at the pilot's discretion.

2.10 RATES OF CLIMB AND DESCENT

2.10.1 Conventionally Shaped Balloons (excluding TR Types)

1. For balloons with a volume of 105,000 cu.ft or less, extreme rates of climb, sufficient to cause a relative wind at basket level, should be avoided unless an envelope temperature gauge is fitted.

2. The maximum rate of climb and descent for balloons with a volume of greater than 105,000 cu.ft and less than 340,000 cu.ft is 1000 ft/min (5 m/sec).

3. The maximum rate of climb and descent for balloons with a volume of between 340,000 and 750,000 cu.ft is 800 ft/min (4m/sec).

2.10.2 TR Type Balloons

1. The maximum rate of climb and descent for 'TR' Type balloons is 1700 ft/min (8.5m/sec), except where the RDS is fitted, when the maximum rates of climb and descent are limited to 1000 ft/min (5 m/sec).

2.11 PARACHUTE VALVE

1. The parachute valve must not be held open for periods longer than 3 seconds during flight. The envelope must be allowed to re-inflate fully and the envelope mouth must be seen to be fully open before subsequent operations of the vent.

2. 'TR' Type balloons must not have the parachute valve opened at rates of descent greater than 500ft/min (2.5m/sec).

2.12 RAPID DEFLATION SYSTEMS

1. The parachute valve of the rapid deflation system, when used for the controlled release of hot air during flight, must not be held open for periods longer than 3 seconds. The envelope must be allowed to re-inflate fully between operations of the vent.

2. Use of the rip line is not permitted at heights greater than 2m (6ft) above ground level, except in an emergency.

2.13 DELETED

2.14 TETHERED FLIGHT

Limitations	Balloons <180,000 ft^3 (5098 m^3)	Balloons >180,000 ft^3 <275,000 ft^3 (7788 m^3)	Balloons >275,000 ft^3
Max. Surface wind speed	15 knots (7.7 m/sec)	5 knots (2.5 m/sec)	Calm
Max. Surface wind speed with passengers	10 knots (5.1 m/sec)	5 knots (2.5 m/sec)	Calm
Max. Height above ground (measured from underside of basket)	30m (100ft)	30m (100ft)	30m (100ft)
Maximum Take-Off Mass	limited to 75% of the standard MTOM		

2.15 BASKETS

1. Each compartment must not contain more than six persons.

2. Reasonable space must be provided for each occupant, with regard to both comfort during the flight and to safety during the landing (Refer to Appendix 4).

3. There must be at least one restraint, e.g. hand hold, for each basket occupant.

4. Woven floor baskets must be fitted with load spreading boards when fitted with cylinders with a useable volume greater than 45 litres.

5. Where the ratio of length to width of the basket is greater than 1.4:1 the balloon must be equipped with envelope turning vents to allow the basket to be correctly orientated for landing.

2.16 CYLINDERS

1. All stainless steel, duplex stainless steel and titanium cylinders shall be equipped with an outer, water resistant protective layer at least 25mm thick made from structural cellular foam or similar material.

2. Each cylinder must be secured by a minimum of two cylinder straps. The straps must be of an approved design. Leather straps should not be used to secure cylinders with a useable volume greater than 60 litres.

2.17 ENVELOPE RIGGING

1. The following envelope types must be rigged using 4 tonne karabiners; Z-375, Z-400, A-425LW, Z-425LW, A-450LW, Z-450, A-500LW and A-530LW.

TABLE 1: ENVELOPE WEIGHT LIMITS AND VOLUMES

Variant	Volume		Standard MTOM		Reduced MTOM		MLM		FAI Class. AX
	ft^3	m^3	kg	lb	kg	lb	kg	lb	
25	25 000	708	227	500	227	500	-	-	4
31	31 450	890	285	629	285	629	-	-	4
35	35 000	991	317	700	317	700	-	-	5
42	42 000	1190	381	840	381	840	-	-	5
50	50 000	1416	453	1000	453	1000	-	-	6
56	56 000	1586	508	1120	499	1100	-	-	6
60	60 000	1700	544	1200	499	1100	-	-	7
65	65 000	1841	590	1300	499	1100	-	-	7
69	69 000	1954	626	1380	499	1100	-	-	7
70	70 000	1982	635	1400	499	1100	-	-	7
77	77 500	2195	703	1550	499	1100	-	-	7
80	80 000	2266	726	1600	499	1100	-	-	8
84	84 000	2379	762	1680	499	1100	-	-	8
90	90 000	2549	816	1800	499	1100	-	-	8
100	100 000	2832	907	2000	907	2000	-	-	8
105	105 000	2974	952	2100	952	2100	476	1050	8
120	120 000	3398	1088	2400	999	2202	544	1200	9
133	133 000	3767	1206	2660	999	2202	603	1330	9
140	140 000	3965	1270	2800	999	2202	635	1400	9
145	145 000	4106	1315	2900	999	2202	658	1451	10
150	150 000	4248	1361	3000	999	2202	681	1502	10
160	160 000	4531	1451	3200	999	2202	726	1601	10
180	180 000	5098	1633	3600	999	2202	817	1801	10
200	200 000	5664	1814	4000	999	2202	909	2004	10
210	210 000	5947	1905	4200	999	2202	952	2099	10
225	225 000	6372	2041	4500	1999	4406	1021	2251	11
240	240 000	6797	2177	4800	1999	4406	1088	2399	11
250	250 000	7080	2268	5000	1999	4406	1134	2500	11
260	260 000	7363	2358	5200	1999	4406	1179	2600	11
275	275 000	7788	2494	5500	1999	4406	1247	2750	11
300	300 000	8496	2721	6000	2699	5951	1361	3001	11
315	315 000	8920	2857	6300	2699	5951	1429	3151	11
340	340 000	9629	2857	6300	2699	5951	1429	3151	12

Table 1: Envelope Weight Limits And Volumes (continued)

Variant	Volume		Standard MTOM		Reduced MTOM		MLM		FAI Class. AX
	ft^3	m^3	kg	lb	kg	lb	kg	lb	
340HL	340 000	9629	3084	6800	2699	5951	1542	3400	12
350	350 000	9912	3175	7000	2699	5951	1588	3502	12
375	375 000	10620	3401	7500	2699	5951	1700	3749	12
400	400 000	11328	3628	8000	2699	5951	1814	4000	12
415	415 000	11753	3764	8300	2699	5951	1882	4150	12
425LW	425 000	12036	3662	8075	2699	5951	1831	4037	13
450LW	450 000	12744	3815	8410	2699	5951	1907	4205	13
450	450 000	12744	4082	9000	2699	5951	2041	4500	13
500LW	500 000	14158	4240	9350	2699	5951	2120	4674	13
530LW	530 000	15010	4500	9922	2699	5951	2404	5301	13
530	530 000	15010	4807	10600	2699	5951	2404	5301	13
600	600 000	16992	5089	11215	5089	11215	2545	5612	14
750	750 000	21238	5103	11250	5103	11250	3062	6752	14

Note: Table 1 lists the complete range of envelopes produced by Cameron Balloons Limited.

The applicable envelope data in Table 1 corresponds to the specific envelope Type and Variant given on page i-i and in Table 4.

For details of Type Approval, reference should be made to the appropriate Type Certificate.

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Fit the padded support rod covers, enclosing the hoses within them. Start the zips at the top and close downwards. It is important that there is sufficient slack hose at the top to allow the burner to gimbal, but not so much that the hose is affected by radiant heat from the burner.

In open baskets the liquid hoses are enclosed in the upwind support rod covers. Vapour hoses (if used) are enclosed in the downwind support rod covers.

In T-partitioned baskets all the hoses fit into the two covers at the pilot's compartment end of the basket.

When double burners are fitted to a double T-partition basket the hoses are arranged identically to the hoses in an open basket. If a triple or quad burner is fitted the hose(s) of each burner follow the adjacent rod. Double T baskets can use two additional padded covers containing only the fuel hoses, suspended from the burner frame and connected inside the pilot compartment.

Check that all burner and cylinder valves are closed and connect the fuel hoses to the cylinders. If cylinder manifolds are used they must be connected as described in Section 4.6.3.1. Fuel hoses should be filled with fuel to check that there are no leaks. The burner test may be performed now or when the balloon is inflated (see Pre-Take-off checklist). Close the cylinder valves and burn the fuel from the hoses.

Manoeuvre the basket onto its side with the burner facing the envelope.

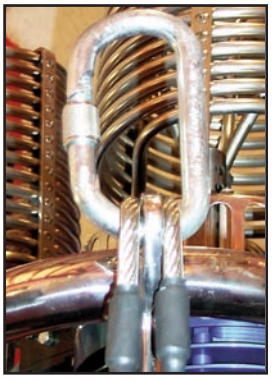
4.2.3.5 Mini Vapour Cylinder

The mini vapour cylinder should be strapped into a suitable location in the basket. It should be oriented so that it is vertical at all times that vapour is being withdrawn.

If only one vapour hose is to be connected the other vapour outlet may be left bare. If two vapour hoses are to be connected then an extension hose may be required.

Care must be taken to ensure that two independent pilot light fuel supplies remain to keep the redundancy of the fuel and burner system.

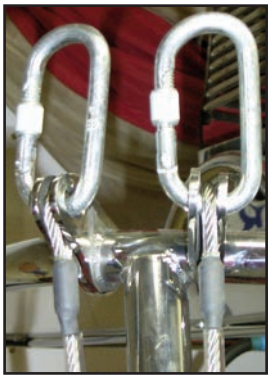
Note: Some mini vapour cylinders incorporate a dip tube which allows vapour to be drawn off with the cylinder in the horizontal position when the outlet is oriented downwards.



Rigging Of Frame Type 'A'

Rigging Of Frame Type 'B'

Rigging Of Frame Type 'C'



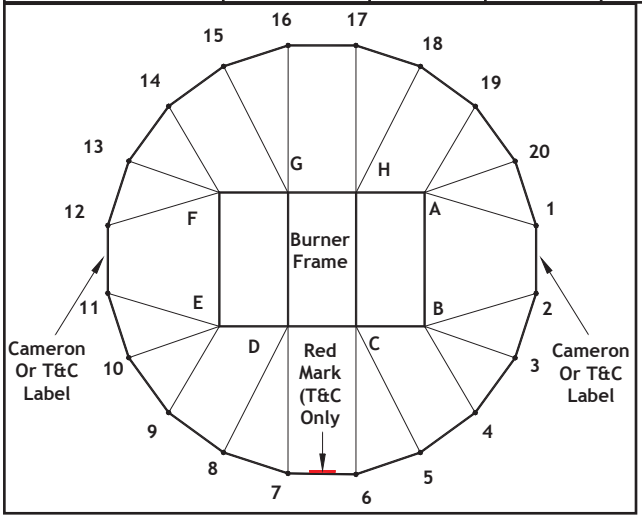
Rigging Of Frame Type 'D'

4.2.4 Envelope Rigging

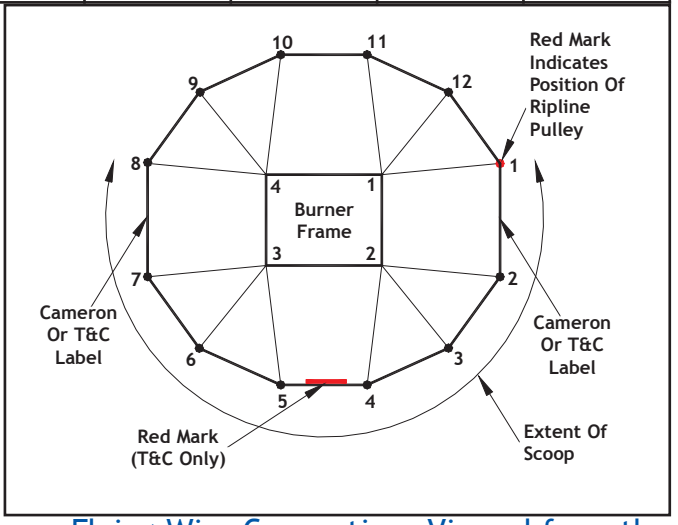
Pull the base of the envelope out of the bag and taking care that wires are not crossed and inside the scoop, connect the appropriate flying wires to each karabiner on the burner frame. Each wire is numbered and the wires are grouped as shown in Table 4.2

Table 4.2 Flying Wire Grouping

4-Rod System (4 karabiner lugs)	*1*	*2*			*3*	*4*		
8 Wire	8,1	2,3			4,5	6,7		
12 Wire	11,12, 1	2-4			5-7	8-10		
16 Wire	14-16, 1	2-5			6-9	10-13		
20 Wire	17-20, 1	2-6			7-11	12-16		
24 Wire	20-24, 1	2-7			8-13	14-19		
4-Rod System (8 karabiner lugs)	*1,2*	*3,4*			*5,6*	*6,8*		
16 Wire	14-15,16-1	2-3, 4-5			6-7,8-9	10-11,12-13		
20 Wire	17-18, 19-21	2-4, 5-6			7-8, 9-11	12-14, 15-16		
20 Wire (alt.)	17-19, 20-21	2-3, 4-6			7-9, 10-11	12-13, 14-16		
24 Wire	20-23, 24-1	2-4, 5-7			8-10, 11-13	14-16, 17-19		
8-Rod System (8 karabiner lugs)	*A*	*B*	*C*	*D*	*E*	*F*	*G*	*H*
20 Wire	19,20,1	2-4	5,6	7,8	9-11	12-14	15,16	17,18
24 Wire	23,24,1	2-4	5-7	8-10	11-13	14-16	17-19	20-22
28 Wire	26-28,1	2-5	6-8	9-11	12-15	16-19	20-22	23-25
32 Wire	30-32,1	2-5	6-9	10-13	14-17	18-21	22-25	26-29
8-Rod System (16 karabiner lugs)	*A, A1*	*B, B1*	*C, C1*	*D, D1*	*E, E1*	*F, F1*	*G, G1*	*H, H1*
20 Wire	19-20, 1	2, 3-4	5,6	7,8	9-10, 11	12, 13-14	15,16	17,18
32 Wire	30-31,32-1	2-3, 4-5	6-7, 8-9	10-11, 12-13	14-15, 16-17	18-19, 20-21	22-23, 24-25	26-27, 28-29



Flying Wire Connections Viewed From The Basket (20 Wire, 8 Rod Rigging Shown)



Flying Wire Connections Viewed from the 4 Rod Basket (12 Wire Rigging Shown)

Where a 24 flying wire envelope is rigged to a 4 rod basket, the wires will be collected together either using 'V' wires or forged rings.

Envelope cables may be left permanently attached to a second set of karabiners, which are connected to the burner frame karabiners during rigging. This arrangement causes a 90^0 twist, which can be avoided by connecting a forged tether ring between the karabiners.

Close all karabiner screwgates and connect the control lines to the appropriate points on the burner frame or basket.

Connect the launch restraint.

Pull the envelope from the carrying bag by taking hold of the bag handles and walking away downwind. Stow the envelope bag in the basket or attach it to a support rod taking care not to trap any of the fuel hoses.

4.2.4.1 Parachute/Lock Top Deflation System

The parachute operating line should be attached to either of the karabiners on the pilot's right or inside the pilot compartment of partitioned baskets.

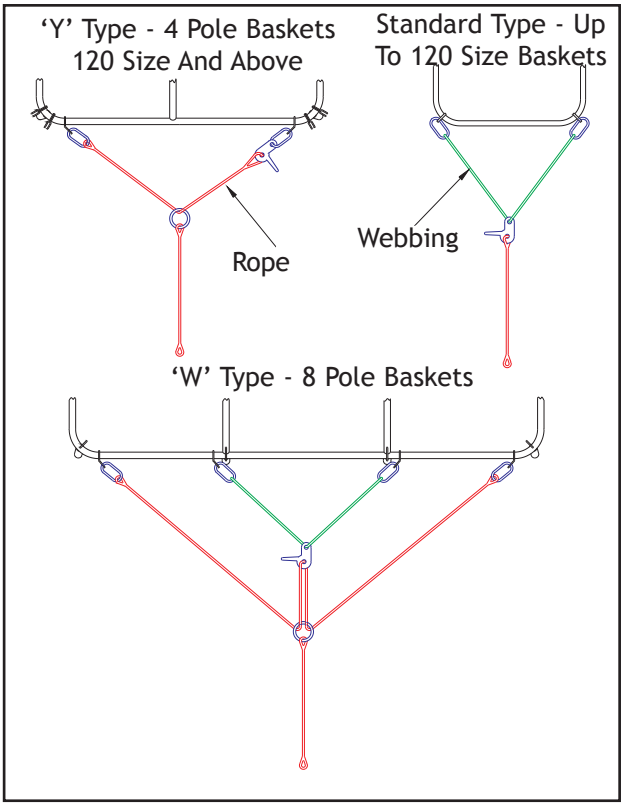
4.2.4.2 RDS Deflation System

Attach the rip line (red rope) to the burner frame and the venting line (red and white rope) to the ring on the Rapid Deflation System bag installed in the basket.

4.2.4.3 Launch Restraint (Quick Release)

The ends of the webbing yoke should be connected to the restraint lugs on the upwind side of the burner frame. If restraint lugs are not fitted, the yoke should be connected to the two uppermost karabiners during inflation. A short tether line is best for maximum control, and is looped through the jaws of the latch.

If the basket is fitted with strong points (Modification C438), the balloon may be restrained from these points using the quick release in the 'Y' configuration.



▲ Quick Release Systems

Warning: To prevent unintentional entanglement, If the basket is fitted with strong points on both sides it is important that no rigging is left attached to the strong points on the upwind side of the basket when they are not in use.

4.3 INFLATION

Pre-Inflation Checklist

Baskets	Solid floor baskets must have no damage to the rawhide wire protectors sufficient to expose the suspension wires. Check also for wire damage where the wires are visible between the protectors and the skids.
Rigging	Basket and envelope cables correctly attached and checked for damage. Karabiner screwgates closed. Control lines attached.
Fuel	Cylinders securely strapped in the appropriate positions. Contents checked. Hose connections tight. All valves shut
Instruments	Switched on. Set.
Fire Extinguisher:	Present, maintained in accordance with manufacturers instructions
Launch Restraint	Connected to fixed point. Check for damage.

4.3.1 Cold Inflation

The crew members should be briefed before the inflation procedure is started. Passengers may be briefed either before inflation begins, or once they are in the basket after inflation. Passengers should be shown how to correctly get into the basket before inflation starts. For Personnel handling information refer to Appendix 5

CAUTION: The most important instruction for all crew members is to let go immediately if they are lifted off the ground.

Partially inflate the envelope to introduce enough air into the envelope to free the parachute and parachute operating line.

Untangle the control lines and feed any slack into the mouth of the balloon. Additional control lines should be attached to any suitable karabiner or to the attachment points provided in the pilot compartment of partitioned baskets.
If the parachute has become tangled, follow two adjacent shroud lines from the envelope to the parachute, then work around the edge of the parachute untangling the lines.

Tab the parachute valve into position, matching the numbers or colours near the Velcro tabs on the parachute and envelope. Make sure that there are no folds of fabric lying on the parachute operating line which could open the parachute during the inflation.

The nitrogen used must be from a regulated supply, providing a pressure of between 0 and 10 bar (0 - 145 psi) to the fuel cylinder, and this nitrogen supply must be operated in accordance with the suppliers instructions.

Nitrogen is added to the cylinder through its liquid feed valve until the desired pressure level is reached.

CAUTION: The maximum cylinder pressure must not exceed 10bar (145psi).

CAUTION: The maximum cylinder pressure must not exceed 7bar (100psi) if the cylinder is to be stored in a pressurised state.

If vapour pilot lights are used, sufficient master cylinders must remain nitrogen-free and be easily identifiable for operation.

CAUTION: A cylinder that has been pressurised with nitrogen becomes unusable for vapour withdrawal, as the nitrogen occupies the vapour space at the top of the fuel cylinder.

When fuel cylinders which have been pressurised with nitrogen are warmed, the fuel pressure will rise much more rapidly than that of an unpressurised cylinder. Care must be taken to ensure that the cylinder maximum safe working pressure is never exceeded. This may be achieved either by pressurising cylinders to a maximum of 7 bar(100psi) if they are to be stored, or by pressurising cylinders to 10 bar(145psi) immediately before a flight and venting the nitrogen from any unused or partially used cylinders as soon as is practical after landing.

It is highly recommended that any cylinder which has been pressurised with nitrogen is labelled as such, and extra care is taken with the use and storage of the cylinder.

Nitrogen is vented from a fuel cylinder by opening the fixed liquid level gauge and allowing vapour to vent for a minimum of 10 minutes. This will allow a considerable amount of nitrogen and propane vapour to escape, markedly reducing the internal pressure of the cylinder.

When using this procedure, the same precautions must be taken as when filling the cylinders.

If a master cylinder is to be returned to use supplying a vapour pilot light after having being nitrogen pressurised, empty the cylinder then refill normally. Extra care should be taken during the first pre flight burner test to ensure the pilot light operates correctly and provides a stable flame.

It is important that the use of high pressure nitrogen cylinders is carried out with reference to the safety, handling and storage guidelines in place for these cylinders. Local and national regulations concerning the use of these cylinders must also be complied with. The supplier of the cylinders will be able to provide the necessary information.

4.11 USE OF A MINI VAPOUR CYLINDER

The mini vapour cylinder contains sufficient fuel to supply one pilot light for approximately ten hours or two pilot lights for approximately five hours.

4.11.1 Refuelling a Mini Vapour Cylinder

The vapour regulator and connecting hose should be removed from the cylinder by unscrewing the 'Rego' connector. Once the vapour regulator is removed, the refuelling procedure is identical to a flight cylinder.

If the cylinder is fitted with a fixed liquid level gauge (rather than a fill stop valve), the level gauge is incorporated in the cylinder valve. Care is required not to overfill the mini cylinder if a pump is being used for refuelling, but care must also be taken to ensure the cylinder is full.

The fixed liquid level gauge is in the flow of liquid during refuelling causing a small amount of leakage from the fixed liquid level gauge during filling. The cylinder is not full until there is a constant liquid flow from the fixed liquid level gauge.

4.12 DROP LINE

A drop line or handling line can be used to manoeuvre the balloon in light wind conditions. The drop line is attached to the envelope karabiners, forged rings or basket strong points (if fitted) using an additional karabiner. The drop line should not be attached adjacent to the karabiner screwgate.

The free end can be deployed to the retrieve crew when it is safe to do so.

If the landing is aborted, the drop line should either be detached or retracted to ensure no contact is made with ground based obstacles during flight (e.g. power lines).

Warning: When attaching the drop line, ensure that it is free from all fuel hoses, control lines and rigging.

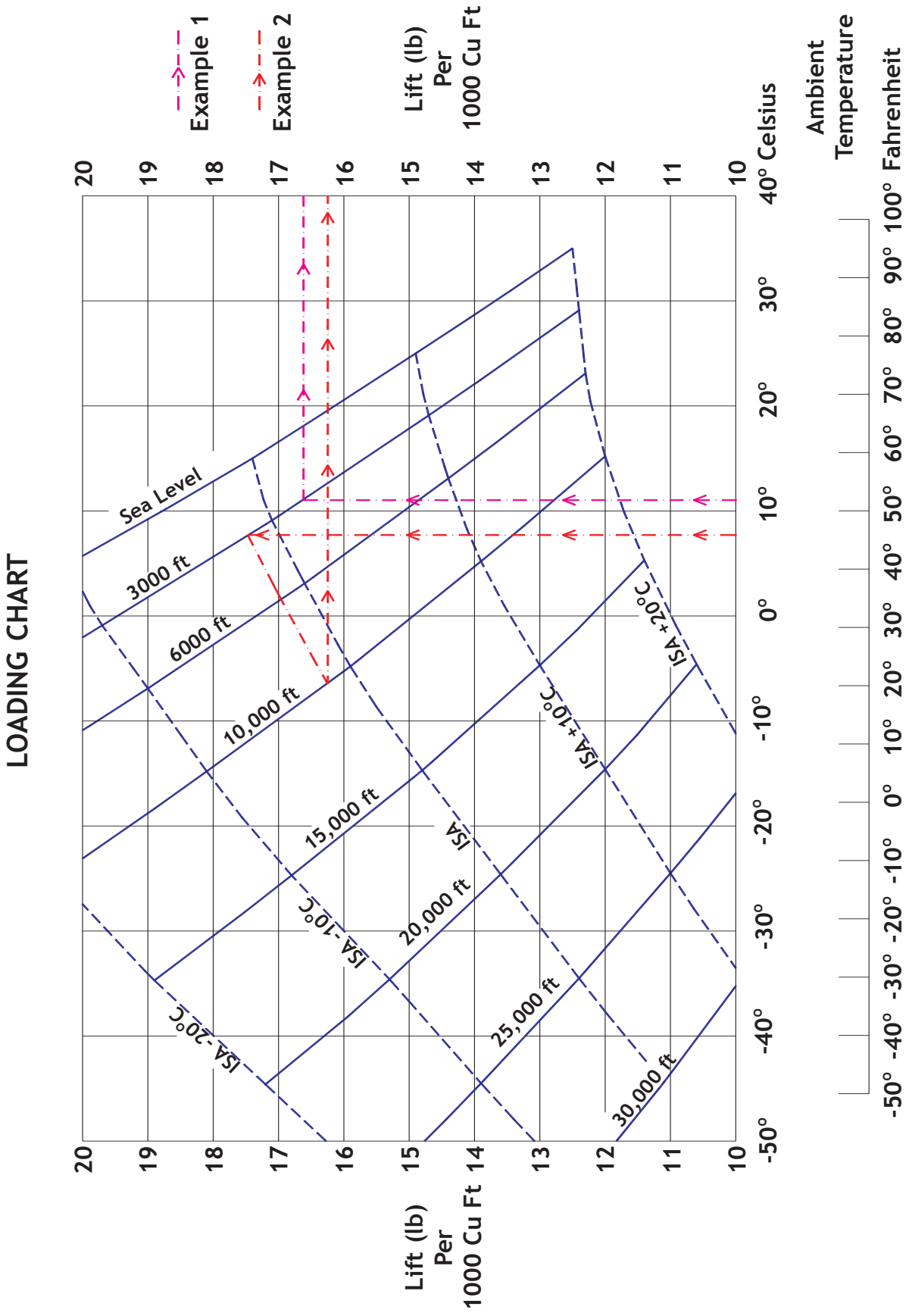

LOADING CHART
Example 1
Example 2
Lift (lb) Per 1000 Cu Ft
Ambient Temperature
40° Celsius
Fahrenheit
Sea Level
3000 ft
6000 ft
10,000 ft
15,000 ft
20,000 ft
25,000 ft
30,000 ft
ISA-20°C
ISA-10°C
ISA
ISA+10°C
ISA+20°C

Table 2: Total Permitted Lift (kg)

Balloon Size	Lift (lb) Per 1000 cu.ft.										
	10	11	12	13	14	15	16	17	18	19	20
25	113	125	136	147	159	170	181	193	204	215	227
31	143	157	171	185	200	214	228	243	257	271	285
35	158	174	190	206	222	238	254	269	285	301	317
42	191	210	229	248	267	286	305	324	343	362	381
50	226	249	272	294	317	340	362	385	408	430	453
56	254	279	305	330	356	381	406	432	457	483	508
60	272	299	327	354	381	408	435	463	490	517	544
65	295	324	354	383	413	442	472	501	531	560	590
69	313	344	376	407	438	469	501	532	563	595	626
70	317	349	381	413	444	476	508	540	571	603	635
77	352	387	422	457	492	527	562	597	633	668	703
80	363	399	435	472	508	544	580	617	653	689	726
84	381	419	457	495	533	572	610	648	686	724	762
90	408	449	490	531	571	612	653	694	735	776	816
100	454	499	544	590	635	680	726	771	816	862	907
105	476	524	572	619	667	714	762	810	857	905	952
120	544	599	653	707	762	816	871	925	980	1034	1088
133	603	663	724	784	844	905	965	1025	1086	1146	1206
140	635	699	762	826	889	953	1016	1080	1143	1207	1270
145	658	723	789	855	921	987	1052	1118	1184	1250	1315
150	680	748	816	884	952	1020	1088	1156	1224	1293	1361
160	726	798	871	943	1016	1088	1161	1234	1306	1379	1451
180	816	898	980	1061	1143	1225	1306	1388	1470	1551	1633
200	907	998	1088	1179	1270	1361	1451	1542	1633	1723	1814
210	952	1047	1143	1238	1334	1429	1524	1619	1715	1810	1905
225	1020	1122	1224	1327	1429	1531	1633	1735	1837	1939	2041
240	1089	1197	1306	1415	1524	1633	1742	1851	1960	2068	2177
250	1134	1247	1361	1474	1588	1701	1814	1928	2041	2155	2268
260	1179	1297	1415	1533	1651	1769	1887	2005	2123	2241	2359
275	1247	1372	1497	1621	1746	1871	1995	2120	2245	2370	2494
300	1361	1497	1633	1679	1905	2041	2177	2313	2449	2585	2721
315	1429	1571	1714	1857	2000	2143	2286	2429	2571	2714	2857
340	1542	1696	1850	2005	2159	2313	2467	2621	2776	2857	2857
340HL	1542	1696	1850	2005	2159	2313	2467	2621	2776	2930	3084
350	1587	1746	1905	2063	2222	2381	2540	2698	2857	3016	3175
375	1701	1871	2041	2211	2381	2551	2722	2892	3062	3232	3401
400	1814	1995	2177	2358	2540	2721	2902	3084	3265	3447	3628
415	1882	2070	2259	2447	2635	2823	3011	3200	3388	3576	3764
425LW	1927	2120	2313	2506	2698	2891	3084	3277	3469	3662	3662
450LW	2041	2245	2449	2653	2857	3061	3265	3469	3673	3815	3815
450	2041	2245	2449	2653	2857	3061	3265	3469	3673	3878	4082
500LW	2268	2494	2721	2948	3175	3401	3628	3855	4082	4240	4240
530LW	2404	2644	2884	3125	3365	3605	3846	4086	4327	4500	4500
530	2404	2644	2884	3125	3365	3605	3846	4086	4327	4567	4807
600	2721	2993	3265	3537	3810	4082	4354	4626	4898	5089	5089
750	3402	3742	4082	4423	4763	5103	5103	5103	5103	5103	5103

Table 3: Total Permitted Lift (lb)

Balloon Size	Lift (lb) Per 1000 cu.ft.										
	10	11	12	13	14	15	16	17	18	19	20
25	250	275	300	325	350	375	400	425	450	475	500
31	315	346	378	409	441	472	504	535	567	598	620
35	350	385	420	455	490	525	560	595	630	665	700
42	420	462	504	546	588	630	672	714	756	798	840
50	500	550	600	650	700	750	800	850	900	950	1000
56	560	616	672	728	784	840	896	952	1008	1064	1120
60	600	660	720	780	840	900	960	1020	1080	1140	1200
65	650	715	780	845	910	975	1040	1105	1170	1235	1300
69	690	759	828	897	966	1035	1104	1173	1242	1311	1380
70	700	770	840	910	980	1050	1120	1190	1260	1330	1400
77	775	852	930	1007	1085	1162	1240	1317	1395	1472	1540
80	800	880	960	1040	1120	1200	1280	1360	1440	1520	1600
84	840	924	1008	1092	1176	1260	1344	1428	1512	1596	1640
90	900	990	1080	1170	1260	1350	1440	1530	1620	1710	1800
100	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000
105	1050	1155	1260	1365	1470	1575	1680	1785	1890	1995	2100
120	1200	1320	1440	1560	1680	1800	1920	2040	2160	2280	2400
133	1330	1463	1596	1729	1862	1995	2128	2261	2394	2527	2660
140	1400	1540	1680	1820	1960	2100	2240	2380	2520	2660	2800
145	1450	1595	1740	1885	2030	2175	2320	2465	2610	2755	2900
150	1500	1650	1800	1950	2100	2250	2400	2550	2700	2850	3000
160	1600	1760	1920	2080	2240	2400	2560	2720	2880	3040	3200
180	1800	1980	2160	2340	2520	2700	2880	3060	3240	3420	3600
200	2000	2200	2400	2600	2800	3000	3200	3400	3600	3800	4000
210	2100	2310	2520	2730	2940	3150	3360	3570	3780	3990	4200
225	2250	2475	2700	2925	3150	3375	3600	3825	4050	4275	4500
240	2400	2640	2880	3120	3360	3600	3840	4080	4320	4560	4800
250	2500	2750	3000	3250	3500	3750	4000	4250	4500	4750	5000
260	2600	2860	3120	3380	3640	3900	4160	4420	4680	4940	5200
275	2750	3025	3300	3575	3850	4125	4400	4675	4950	5225	5500
300	3000	3300	3600	3900	4200	4500	4800	5100	5400	5700	6000
315	3150	3465	3780	4095	4410	4725	5040	5355	5670	5985	6300
340	3400	3740	4080	4420	4760	5100	5440	5780	6120	6300	6300
340HL	3400	3740	4080	4420	4760	5100	5440	5780	6120	6460	6800
350	3500	3850	4200	4550	4900	5250	5600	5950	6300	6650	7000
375	3750	4125	4500	4875	5250	5625	6000	6375	6750	7125	7500
400	4000	4400	4800	5200	5600	6000	6400	6800	7200	7600	8000
415	4150	4565	4980	5395	5810	6225	6640	7055	7470	7885	8300
425LW	4250	4675	5100	5525	5950	6375	6800	7225	7650	8075	8075
450LW	4500	4950	5400	5850	6300	6750	7200	7650	8100	8410	8410
450	4500	4950	5400	5850	6300	6750	7200	7650	8100	8550	9000
500LW	5000	5500	6000	6500	7000	7500	8000	8500	9000	9350	9350
530LW	5300	5830	6360	6890	7420	7950	8480	9010	9540	9920	9920
530	5300	5830	6360	6890	7420	7950	8480	9010	9540	10070	10600
600	6000	6600	7200	7800	8400	9000	9600	10200	10800	11215	11215
750	7500	8250	9000	9750	10500	11250	11250	11250	11250	11250	11250

Table 4: Balloon Component Weight Record

Registration	
Year Of Construction	
Constructors Number	
Balloon Type	

Component	Drawing Number	Serial Number	Weight (kg)
Envelope			
Burner			
Basket			
		Total	

Cylinder	Drawing Number	Serial Number	Weight (kg)	
			Empty	Full
Cylinder 1				
Cylinder 2				
Cylinder 3				
Cylinder 4				
Cylinder 5				
Cylinder 6				
		Total		

Total Fuel Weight _____ kg

6.2.15 Temperature Streamer

A melting link attached to a streamer is fitted to all envelopes, usually near the top of load tape no. 2. If the envelope is overheated the streamer will fall through the mouth of the envelope warning the pilot. The streamer will fall out at 127°C (261°F) and may be of any colour contrasting with the envelope.

6.2.16 Tempilabel

A tempilabel is sewn into all envelopes near the top of load tape 3. This label has temperature sensitive areas which permanently change colour at different temperatures between 90° to 150°C (200° to 300°F). This provides a permanent record of the maximum temperature the fabric has reached.

6.3 BURNER

6.3.1 General

The main heat source for balloon flight is a high-output burner fuelled with liquid propane.

Burners are available in single, double, triple and quad configurations.

The burner valve controls are colour coded to aid recognition.

6.3.2 Main Burner

The fuel passes through a vaporising coil (burner coil) and jet system prior to combustion. Fuel flow is controlled by an on/off valve referred to as the blast valve. The blast valve control is coloured red.

6.3.3 Whisper Burner

The Whisper burner ('Liquid Fire' or 'Cow Burner') feeds liquid fuel directly to a multi-hole jet producing a quieter and less powerful flame. Fuel flow is controlled by a rotary valve or toggle valve which can vary the output of the burner. The whisper burner control is coloured blue.

The Whisper burner is designed for occasional use. Excessive use may cause discolouration of the envelope.

The Whisper burner should not be operated continuously with the valve partially open as this may lead to droplets of propane being produced at the nozzle. Liquid fuel may then collect in the base of the burner and present a fire risk.

6.3.4 Pilot Light

Burner ignition is provided by a pilot light. Pilot lights may be fuelled by liquid propane taken from the main fuel supply or from a separate regulated vapour supply. The pilot light is controlled by a rotary action shut off valve. Each pilot light has its own piezo igniter (except the Shadow Single burner which shares one igniter between two pilot lights). The pilot light control obscures the igniter push button when in the closed position. The pilot light control is coloured gold.

Note: During initial use, some 'bedding down' of the pilot light and whisper burner valves may occur necessitating a simple adjustment to ensure the valves shut off correctly (Maintenance Manual Sections 4.5.1 and 4.6.1).

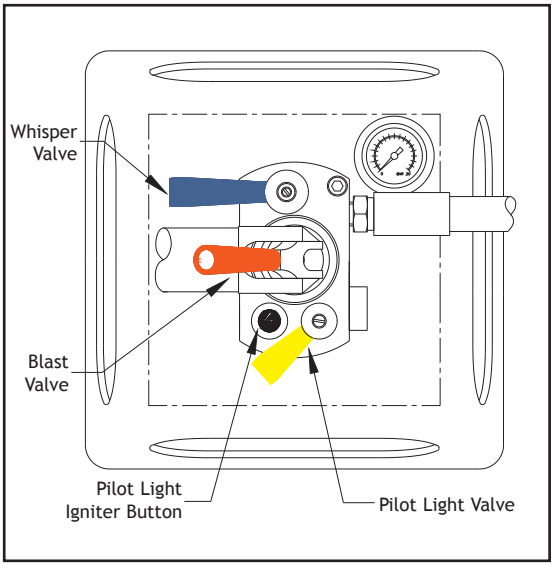
6.3.5 Pressure Gauge

A pressure gauge is fitted to each liquid fuel supply. The pressure gauge displays the fuel pressure at the burner.

6.3.6 Fuel Supplies

A minimum of two separate fuel supplies is always fitted. In a single burner these both feed, via independent valves, to the same burner coil. In double, triple or quad burners, each burner unit has its own independent fuel supply.

The liquid fuel hoses on triple and quad burners are marked with a coloured band at each end so that the hose couplings can be matched with their burner unit.



▲ Shadow / Stealth Control Layout

6.3.7 Simultaneous Multiple Burner Operation

In multiple burners, pairs of burners are linked by either 'dual action handles' or by a crossflow valve. The dual action handle allows the operation of two main blast valves, via separate fuel supplies, with one hand. The crossflow valve allows the routing of single fuel supply from one blast valve to two burner coils. Maximum power will not be achieved using the crossflow as both the burners are being fed from one fuel hose.

6.3.8 Shadow and Stealth Burners

The Shadow burner uses a jet ring incorporating multi-hole jets producing a powerful slim high speed flame.

Padded hose covers can be used to bring fuel hoses from the centre of the burner frame to the centre of the pilot compartment.

Turning vents should be fitted to envelopes used with partitioned baskets. This allows the basket to be rotated so that the long side faces the direction of travel during landing.

▲ Double 'T' Partition Basket

6.5.4 Pilot Restraint Harness

The pilot restraint harness prevents the pilot being thrown from the basket during a heavy or fast landing. The harness fastens around the pilot's waist, and is attached securely either to or close to the basket floor. A quick release buckle is fitted to allow the pilot to leave the basket in an emergency.

6.5.5 Quick Release

The quick release is designed to restrain the balloon during inflation and heating up for take-off, but must not be used for tethered flight. A locking pin or collar is fitted to prevent accidental release.

Use of the quick release is recommended to ensure that the balloon does not drag during inflation or leave the ground prematurely.

Note: Care should be taken to protect all webbing and rope items from the effects of sunlight. Ultraviolet radiation causes degradation of the rope or webbing, considerably reducing its strength. This applies especially to the launch restraint and equipment for tethered flight. Regular checks should be made to the launch restraint and equipment for tethered flight for wear and loss of strength.

6.6 FLIGHT INSTRUMENTS

Flight instruments used in ballooning are an altimeter (for altitude measurement), a variometer (to display climb and descent rate), a time piece (to record flight times, sunset times etc.) and an envelope temperature gauge (to indicate envelope internal temperature).

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9.1 INTRODUCTION

This Section lists the major components which may be combined with each envelope to make a complete balloon. Additional equipment, not requiring approval, is listed in Section 9.3.

9.1.1 Burner Frame Compatability

Table 6 lists the compatible burner load frames for each basket type. The burner load frames are divided into two categories:

Applicable Burner Frames (specific): These are frames design specifically to fit a given basket type.

Applicable Burner Frames (with Assembly check):

These are structurally and dimensionally similar frames which have been designed for similar baskets that incorporate minor design changes (e.g. additional restraint lugs, offset crossbar, changed rod socket angles etc.). These frames may only be combined with the listed basket after an assembly check by a competent person (normally an inspector).

9.2 EQUIPMENT LIST

Tables 5, 6, 7 and 8 list the envelopes, baskets, fuel cylinders, burners and burner frames which are compatible.

Table 5: Envelopes

Envelope Type	Drawing Number	Applicable Burners	Applicable Baskets
A-105	CB115	B	B, C, D, E, F, G, H, I, J, K
A-120	CB617	B	C, D, E, F, G, H, I, J, K, L
A-140	CB105	B	D, E, F, G, H, I, J, K, L, M
A-160	CB653	B, C	D, E, F, G, H, I, J, K, L, M, N
A-180	CB692	B, C, D	E, F, G, H, I, J, K, L, M, N, O
A-200	CB1199	B, C, D	G, H, I, J, K, L, M, N, O, P, Q
A-210	CB199	B, C, D	G, H, I, J, K, L, M, N, O, P, Q
A-225	CB1618	B, C, D	G, H, I, J, K, L, M, N, O, P, Q
A-250	CB463	C, D	H, I, J, K, L, M, N, O, P, Q
A-275	CB1147	C, D	I, J, K, L, M, N, O, P, Q
A-300	CB603	C, D	K, L, M, N, O, P, Q
A-315	CB1028	C, D	K, L, M, N, O, P, Q
A-340	CB1166	D	L, M, N, O, P, Q
A-340HL	CB1148	D	L, M, N, O, P, Q
A-375	CB761	D	M, N, O, P, Q
A-400	CB1248	D	N, O, P, Q
A-415	CB1311	D	N, O, P, Q
A-425LW	CB1716	D	N, O, P, Q
A-450LW	CB1626	D	P, Q, R
A-500LW	CB1725	D	P, Q, R
A-530LW	CB1672	D	P, Q, R
A-530	CB197	D	O, P, Q

Table 5: Envelopes (continued)

Envelope Type	Drawing Number	Applicable Burners	Applicable Baskets
C-50	CB1611	A, B	A, B, C, D
C-60	CB996	A, B	A, B, C, D, E, F, G
C-70	CB1256	A, B	A, B, C, D, E, F, G, H
C-80	CB1025	A, B	A, B, C, D, E, F, G, H, I
C-90	CB1460	A, B	A, B, C, D, E, F, G, H, I, J
C-100	CB1048	A, B	B, C, D, E, F, G, H, I, J, K
GP-65	CB1397	A, B	A, B, C, D, E, F, G, H
GP-70	CB1498	A, B	A, B, C, D, E, F, G, H
N-31	CB476	A	A, B, C, D
N-42	CB476	A	A, B, C, D, E
N-56	CB476	A, B	A, B, C, D, E, F, G
N-65	CB476	A, B	A, B, C, D, E, F, G, H
N-70	CB476	A, B	A, B, C, D, E, F, G, H
N-77	CB476	A, B	A, B, C, D, E, F, G, H, I
N-90	CB476	A, B	A, B, C, D, E, F, G, H, I, J
N-100	CB476	A, B	B, C, D, E, F, G, H, I, J, K
N-105	CB476	B	B, C, D, E, F, G, H, I, J, K
N-120	CB476	B	C, D, E, F, G, H, I, J, K, L
N-133	CB476	B	C, D, E, F, G, H, I, J, K, L
N-145	CB476	B, C	D, E, F, G, H, I, J, K, L, M
N-160	CB476	B, C	E, F, G, H, I, J, K, L, M, N
N-180	CB476	B, C, D	E, F, G, H, I, J, K, L, M, N, O
N-210	CB476	B, C, D	G, H, I, J, K, L, M, N, O, P, Q
O-31	CB110	A	A, B, C, D
O-42	CB101	A	A, B, C, D, E
O-56	CB45	A, B	A, B, C, D, E, F, G
O-65	CB54	A, B	A, B, C, D, E, F, G, H
O-77	CB112	A, B	A, B, C, D, E, F, G, H, I
O-84	CB49	A, B	A, B, C, D, E, F, G, H, I
O-90	CB658	A, B	A, B, C, D, E, F, G, H, I, J
O-105	CB167	B	B, C, D, E, F, G, H, I, J, K
O-120	CB505	B	C, D, E, F, G, H, I, J, K, L
O-140	CB772	B, C	D, E, F, G, H, I, J, K, L, M
O-160	CB368	B, C	D, E, F, G, H, I, J, K, L, M, N
TR-60	CB1520	A, B	A, B, C, D, E, F, G
TR-70	CB1519	A, B	A, B, C, D, E, F, G
TR-77	CB1591	A,B	A, B, C, D, E, F, G
TR-84	CB1612	A,B	A, B, C, D, E, F, G
V-31	CB149	A	A, B, C, D
V-42	CB369	A	A, B, C, D, E
V-56	CB134	A, B	A, B, C, D, E, F, G
V-65	CB166	A, B	A, B, C, D, E, F, G, H
V-77	CB170	A, B	A, B, C, D, E, F, G, H, I
V-90	CB817	A, B	A, B, C, D, E, F, G, H, I, J

Table 5: Envelopes (continued)

Envelope Type	Drawing Number	Applicable Burners	Applicable Baskets
Z-25	CB1461	A	A, B, C
Z-31	CB1462	A	A, B, C, D
Z-35	CB-1619	A	A, B, C, D
Z-42	CB1463	A	A, B, C, D, E
Z-56	CB1464	A, B	A, B, C, D, E, F, G
Z-65	CB1346	A, B	A, B, C, D, E, F, G, H
Z-69	CB1465	A, B	A, B, C, D, E, F, G, H
Z-77	CB1342	A, B	A, B, C, D, E, F, G, H, I
Z-90	CB1340	A, B	A, B, C, D, E, F, G, H, I, J
Z-105	CB1345	B	B, C, D, E, F, G, H, I, J, K
Z-120	CB1348	B	C, D, E, F, G, H, I, J, K, L
Z-133	CB1349	B	C, D, E, F, G, H, I, J, K, L
Z-140	CB1477	B, C	D, E, F, G, H, I, J, K, L, M
Z-145	CB1350	B, C	D, E, F, G, H, I, J, K, L, M
Z-150	CB1473	B, C	D, E, F, G, H, I, J, K, L, M
Z-160	CB1351	B, C	D, E, F, G, H, I, J, K, L, M, N
Z-180	CB1352	B, C, D	E, F, G, H, I, J, K, L, M, N, O
Z-210	CB1353	B, C, D	G, H, I, J, K, L, M, N, O, P, Q
Z-225	CB1466	C, D	G, H, I, J, K, L, M, N, O, P, Q
Z-250	CB1459	C, D	H, I, J, K, L, M, N, O, P, Q
Z-275	CB1467	C, D	I, J, K, L, M, N, O, P, Q
Z-315	CB1468	C, D	K, L, M, N, O, P, Q
Z-350	CB1469	D	L, M, N, O, P, Q
Z-375	CB1470	D	M, N, O, P, Q
Z-400	CB1471	D	N, O, P, Q
Z-425LW	CB1502	D	N, O, P, Q
Z-450	CB1472	D	N, O, P, Q
Z-600	CB1565	D	R
Z-750	CB1663	D	R
Thunder 65 S1	CB1136	A, B	A, B, C, D, E, F, G, H
Thunder 77 S1	CB1080	A, B	A, B, C, D, E, F, G, H, I
Thunder 90 S1	CB1113	A, B	A, B, C, D, E, F, G, H, I, J
Thunder 105 S1	CB1107	B	B, C, D, E, F, G, H, I, J, K
Thunder 120 S1	CB1137	B	C, D, E, F, G, H, I, J, K, L
Thunder 140 S1	CB1214	B, C	D, E, F, G, H, I, J, K, L, M
Thunder 160 S1	CB1138	B, C	D, E, F, G, H, I, J, K, L, M, N
Thunder 180 S1	CB1139	B, C, D	E, F, G, H, I, J, K, L, M, N, O
Thunder 90 S2	CB1082	A, B	A, B, C, D, E, F, G, H, I, J
Thunder 105 S2	CB1089	B	B, C, D, E, F, G, H, I, J, K
Thunder 120 S2	CB1105	B	C, D, E, F, G, H, I, J, K, L
Thunder 140 S2	CB1079	B, C	D, E, F, G, H, I, J, K, L, M
Thunder 150 S2	CB1334	B, C	D, E, F, G, H, I, J, K, L, M
Thunder 160 S2	CB1140	B, C	D, E, F, G, H, I, J, K, L, M, N
Thunder 180 S2	CB1141	B, C, D	E, F, G, H, I, J, K, L, M, N, O
Thunder 210 S2	CB1142	B, C, D	G, H, I, J, K, L, M, N, O, P, Q
Thunder 225 S2	CB1200	C, D	G, H, I, J, K, L, M, N, O, P, Q
Thunder 250 S2	CB1194	C, D	H, I, J, K, L, M, N, O, P, Q

Table 5: Envelopes (continued)

Envelope Type	Drawing Number	Applicable Burners	Applicable Baskets
Colt 25A	CB1461	A	A, B, C
Colt 31A	CB1462	A	A, B, C, D
Colt 42A	CB1463	A	A, B, C, D, E
Colt 56A	CB1464	A, B	A, B, C, D, E, F, G
Colt 65A	CB1346	A, B	A, B, C, D, E, F, G, H
Colt 69A	CB1465	A, B	A, B, C, D, E, F, G, H
Colt 77A	CB1342	A, B	A, B, C, D, E, F, G, H, I
Colt 90A	CB1340	A, B	A, B, C, D, E, F, G, H, I, J
Colt 105A	CB1345	B	B, C, D, E, F, G, H, I, J, K
Colt 120A	CB1348	B	C, D, E, F, G, H, I, J, K, L
Colt 133A	CB1349	B	C, D, E, F, G, H, I, J, K, L
Colt 140A	CB1477	B, C	D, E, F, G, H, I, J, K, L, M
Colt 150A	CB1473	B, C	D, E, F, G, H, I, J, K, L, M
Colt 160A	CB1351	B, C	D, E, F, G, H, I, J, K, L, M
Colt 180A	CB1352	B, C, D	D, E, F, G, H, I, J, K, L, M, N
Colt 210A	CB1353	B, C, D	E, F, G, H, I, J, K, L, M, N, O
Colt 225A	CB1466	C, D	G, H, I, J, K, L, M, N, O, P, Q
Colt 240A	CB1128	C, D	G, H, I, J, K, L, M, N, O, P, Q
Colt 250A	CB1459	C, D	H, I, J, K, L, M, N, O, P, Q
Colt 260A	CB1129	C, D	I, J, K, L, M, N, O, P, Q
Colt 275A	CB1467	C, D	K, L, M, N, O, P, Q
Colt 315A	CB1468	C, D	L, M, N, O, P, Q
Colt 350A	CB1469	D	M, N, O, P, Q
Colt 375A	CB1470	D	N, O, P, Q
Colt 400A	CB1471	D	N, O, P, Q
Colt 450A	CB1472	D	O, P, Q

Table 5A: Tether Equipment

Item	Part Number	Description
1	CB-6043-1000	V-Bridle
2	CU-3000-0001	Tether Ring, Large
3	CU-9780-0001	Karabiner, 5 Tonne
4	CB-6043-3000	V-Bridle complete with Tether Rings

Note: Item 4 is alternative to items 1 to 3

Table 6: Baskets

Basket Cat.	Drawing Number	Basket Description*	Applicable Cylinders	Applicable Burner Frames (specific)	Applicable Burner Frames (with Assembly check)
B	CB3037	LITE	1a, 1, 2	CB2118, CB2355, CB2356	
B	CB310-1A	31-42 O	1a, 1, 2	CB855, CB871, CB925, CB2203(Fl), CB2224(Fl), CB2231(Fl), CB2598, CB2874	
C	CB300-2A	56-65 O	1a, 1, 2, 3	CB855, CB871, CB925, CB2203(Fl), CB2224(Fl), CB2231(Fl), CB2598 (Fl), CB2643, CB2665, CB2857(Fl), CB2874	CB2203, CB2224, CB2231, CB2598, CB2650, CB2652, CB2857, CB2995, CB8810,CB8810, CB8811, CB8820, CB8821, CB8864,CB8894, CB8902, CB8903, CB8905, Concept (CB994,CB2000), BA-152-A-002 (LBL)**
C	CB310-2A				
C	CB3050-2				
C	CB3115-2				
C	CB3011-2A	56-65 OH			
C	CB3023-2				
C	CB3011-2B				
C	CB3051	C60/70 O	1a, 1, 2, 3	CB855, CB871, CB925, CB2203, CB2224, CB2231, CB2598, CB2665, CB2860, CB2863, CB2874, CQ2018***, CQ2028	CB2643, CB2650, CB2652, CB2665, CB2857, CB2874, CB8810, CB8811, CB8820, CB8821, CB8864,CB8894, CB8902, CB8903, CB8905
D	CB300-3A	77-84 O	1a, 1, 2, 3		
D	CB310-3A				
D	CB3050-3				
D	CB3115-3				
D	CB3011-3A	77-84 OH	1a, 1, 2, 3		
D	CB3023-3				
D	CB3011-3B				
D	CB3052	C80/90 O	1a, 1, 2, 3		
D	CB8001	65-77 O	1a, 1, 2, 3	CB855, CB871, CB925, CB8810, CB8811, CB8820, CB8821, CB8894, CB8902, CB8903, CB8905, CB8912	CB2203, CB2224, CB2231, CB2598,CB2650, CB2652, CB2857, CB2995, Concept (CB994,CB2000), BA-152-A-002 (LBL)**
D	CB8012				
D	CB8006	65-77 OH	1a, 1, 2, 3		
D	CB8017				
D	CB8002	77-90 O	1a, 1, 2, 3		
D	CB8013				
D	CB8007	77-90 OH	1a, 1, 2, 3		
D	CB8018				
E	CB300-4A	90-105 O	1a, 1, 2, 3	CB855, CB871, CB925, CB2203, CB2224, CB2231, CB2598, CB2665, CB2874, CQ2027	CB2203, CB2224, CB2231, CB2598,CB2650, CB2652, CB2857, CB2995, Concept (CB994,CB2000), BA-152-A-002 (LBL)**
E	CB310-4A				
E	CB3050-4				
E	CB3115-4				
E	CB3011-4A	90-105 OH	1a, 1, 2, 3		
E	CB3023-4				
E	CB3011-4B				
E	CB8003	90-105 O	1a, 1, 2, 3	CB8810, CB8811, CB8820, CB8821, CB8894, CB8902, CB8903, CB8905, CB8912	CB2203, CB2224, CB2231, CB2598,CB2650, CB2652, CB2857, CB2995, Concept (CB994,CB2000), BA-152-A-002 (LBL)**
E	CB8014				
E	CB8008	90-105 OH	1a, 1, 2, 3		
E	CB8019				
F	CB8004	105-120 O	1a, 1, 2, 3	CB8822, CB8823, CB8824, CB8825, CB8830, CB8831, CB8846	
F	CB8013				
F	CB8009	105-120 OH	1a, 1, 2, 3		
F	CB8020				
F	CB8200	105-120 T	1a, 1, 2, 3		

* For key see page 9-6

Table 6: Baskets (continued)

Basket Category	Drawing Number	Basket Description*	Applicable Cylinders	Applicable Burner Frames
G	CB303	120 - 133 O	1a, 1, 2, 3	CB855, CB871, CB925, CB2203(Fl), CB2309, CB2312
G	CB3238	120 - 133 P	1a, 1, 2, 3	CB2470, CB2468, CB2856
G	CB3233	120 - 133 T	1a, 1, 2, 3	CB2470, CB2468
H	CB991	140 T	1a, 1, 2, 3	CB993, CB2264, CB2263
H	CB3376	140 T	1a, 1, 2, 3	CB2264, CB2263
H	CB8266	120 - 160 T	1a, 1, 2, 3	CB8900, CB8901
I	CB3310	160 - 180 T	1a, 1, 2, 3	CB2590, CB2591
I	CB8206	180 - 210T	1a, 1, 2, 3	CB8826 CB8832, CB8840
J	CB754	180 - 210 TT	1a, 1, 2, 3	CB750, CB2420, CB2411, CB2261, CB2371
K	CB3164	210 TT Os	1a, 1, 2, 3	CB2050, CB2250, CB2283, CB2303
L	CB3314	210 - 250 T	1a, 1, 2, 3	CB2505, CB2592
M	CB3004	250 TT	1a, 1, 2, 3	CB2050, CB2250, CB2283, CB2303
M	CB971	250 TT D	1a, 1, 2, 3	CB970, CB2260, CB2304
M	CB3387	250TT	1a, 1, 2, 3	CB2613, CB2614
N	CB3200	275 TT Os	1a, 1, 2, 3	CB2427, CB2447
O	CB3042	300 TT	1a, 1, 2, 3	CB2270, CB2258
O	CB3040	300 TT D	1a, 1, 2, 3	CB2271, CB2259
O	CB3049	300 TT S	1a, 1, 2, 3	CB2272, CB2269
O	CB3235	300 TT	1a, 1, 2, 3	CB2390
O	CB3223	300 TT S	1a, 1, 2, 3	CB2427, CB2447
O	CB8250	350 TT	1a, 1, 2, 3	CB8842, CB8843
O	CB3360	350 TT	1a, 1, 2, 3	CB2192, CB2274, CB2282, CB2418, CB2562
P	CB3205	400 TT S	1a, 1, 2, 3	CB2192, CB2274, CB2282, CB2418, CB2562
Q	CB3288	400 - 410 TT S	1a, 1, 2, 3	CB2192, CB2274, CB2282, CB2418, CB2562
R	CB3570	500 TT S	1a, 1, 2, 3	CQ2015
R	CB3370	600 TT S	1a, 1, 2, 3	CB2376
R	CB3550	750 TT S	1a, 1, 2, 3	CB2953

*** Key:** H= Hi-Spec; L=Asymmetric pilot compartment; O = Open; P= single partition; T = T partition; TT = double T partition; Os = offset; D = designed for use in Germany; S = Safari (tough terrain); W = wheelchair access; Fl = Flexi-corner burner frame only.

Burner Frames: **LHABL= Lindstrand, *** = Kubicek Ignis

9.3 ADDITIONAL EQUIPMENT

9.3.1 Hand Fire Extinguisher

Hand fire extinguishers should conform to EN3 or an equivalent specification. The extinguisher should have a minimum capacity of 2 kg when using dry powder, or when the extinguishing means is other than dry powder be at least of comparable effect and capacity.

9.3.2 Fire Blanket

A fire blanket or fire resistant cover should comply with the European Norm EN 1869 or equivalent. The size should be at least 1.2 m × 1.8 m.

Note: Smaller sizes are not recommended as they cannot sufficiently cover the source of developing propane fire.

9.3.3 Knife

A knife, hook knife or equivalent, capable of cutting any control line or handling rope that is accessible to the pilot-in-command or a crew member from the basket.

9.3.4 First Aid Kit

The first-aid kit should be equipped with appropriate and sufficient medication, dressings and other medical equipment to satisfy the characteristics of the operation (scope of operation, flight duration, number and demographics of passengers, etc.).

The following should be included in the first-aid kit:

(1) bandages;
(2) burns dressings;
(3) wound dressings;
(4) adhesive dressings;
(5) antiseptic wound cleaner;
(6) safety scissors; and
(7) disposable gloves.

The first aid kit should be maintained and kept up to date.

Consideration should be given to carrying and additional First Aid Kit in the retrieve vehicle.

9.3.5 Drop Line

The drop line or handling line may be used, by ground crew, to manoeuvre the balloon in light wind conditions. A minimum length of 25 m is recommended. When not in use the drop line is coiled up in a fabric bag and secured inside the basket.

9.3.6 Accurate Time Piece

A means of measuring and displaying the time in hours, minutes and seconds (e.g. wrist watch).