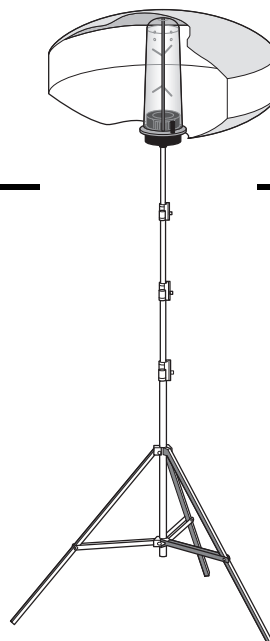


# BALLOON LIGHT

**BL2000B**



## Operation and Maintenance Manual



Doosan purchased Bobcat Company from Ingersoll-Rand Company in 2007. Any reference to Ingersoll-Rand Company or use of trademarks, service marks, logos, or other proprietary identifying marks belonging to Ingersoll-Rand Company in this manual is historical or nominative in nature, and is not meant to suggest a current affiliation between Ingersoll-Rand Company and Doosan Company or the products of either.



**This manual contains important safety information.**

**Do not destroy this manual.**

**This manual must be available to all personnel who operate and maintain this device.**

Models represented in this manual may be used in various locations world-wide. Equipment shipped within European Union territories is required to display a CE mark and conform to various Directives. In these cases the design specification of the equipment is certified as complying with EC Directives listed. Any modification of the part is absolutely prohibited and would result in the CE Certification and Marking being rendered invalid. A declaration of that conformity follows :



## **DECLARATION OF CONFORMITY WITH EC DIRECTIVES**

**89/336/EEC**

**We**

Ingersoll-Rand Company  
P.O. Box 868  
501 Sanford Avenue  
Mocksville, North Carolina 27028

Represented in EC by:

Ingersoll-Rand European Sales  
Company Limited  
Swan Lane, Hindley Green  
Wigan WN2 4EZ  
United Kingdom

**Declare that, under our sole responsibility for manufacture and supply, the models**

**BL2000 - 220/60**

**BL2000 - 220/50**

**BL2000 - 110/50**

**To which this declaration relates, is (are) in conformity with the provisions of the  
directives using the following principal standards:**

**NF EN 50081 - 1&2 ; NF EN 50082 - 1&2 ; NF EN 55015 ; NF EN 60598 - 1, 2 & 4**

Issued at Hindley Green, February 2006

A handwritten signature in black ink, appearing to read 'P. Edgeller', is written over a horizontal line.

Mr. P Edgeller  
Technical Manager

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# Foreword

The contents of this manual are considered to be proprietary and confidential to Ingersoll-Rand and should not be reproduced without the prior written permission of Ingersoll-Rand.

Nothing contained in this document is intended to extend any promise, warranty or representation, expressed or implied, regarding the Ingersoll-Rand products described herein. Any such warranties or other terms and conditions of sale of products shall be in accordance with the standard terms and conditions of sale for such products, which are available upon request.

This manual contains instructions and technical data to cover all routine operation and scheduled maintenance tasks by operation and maintenance staff. Major overhauls are outside the scope of this manual and should be referred to an authorized Ingersoll-Rand service department.

Details of approved equipment are available from Ingersoll-Rand Service departments.

The use of repair parts other than those included within the Ingersoll-Rand approved parts list may create hazardous conditions over which Ingersoll-Rand has no control. Therefore, Ingersoll-Rand cannot be held responsible for equipment in which non-approved repair parts are installed.

Ingersoll-Rand reserves the right to make changes and improvements to products without notice and without incurring any obligation to make such changes or add such improvements to products sold previously.

This company accepts no responsibility for errors in the translation of this manual from the original English version.



# Safety

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## General safety information

Protect the envelope from aggressive external contacts (projectiles, electric wires, walls, trees, animals, etc.)

Do not clean the Balloon BL2000B with a solvent.

If the envelope gets damp, dry before storing.

Do not kick the Balloon BL2000B.

To extend bulb lifetime, avoid touching the bulbs with your bare hands. Use the glove provided.

Do not cut the electric cable.

Do not switch on the Balloon BL2000B if the cable is wound up.

Make sure that the tripod is stable and firmly anchored in windy conditions.

Do not use the Balloon BL2000B if wind speed exceeds 80 km/h.

Generator set: minimum recommended capacity:

- Single phase 230V - 2kVA - 10A minimum.
- Single phase 115V - 2kVA - 20 A minimum.

Be careful of phase unbalance if several devices are connected to the same generator.

## Storage

Store the Balloon BL2000B in its storage bag.

Store in a dry, ventilated area.

Do not store the Balloon BL2000B near a heat source.

Do not store the Balloon BL2000B near chemical products.

Do not store anything else in the storage bag that may interfere with the envelope or equipment provided.

## Transport

Transport the Balloon BL2000B in its storage bag.



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# Operating Instructions

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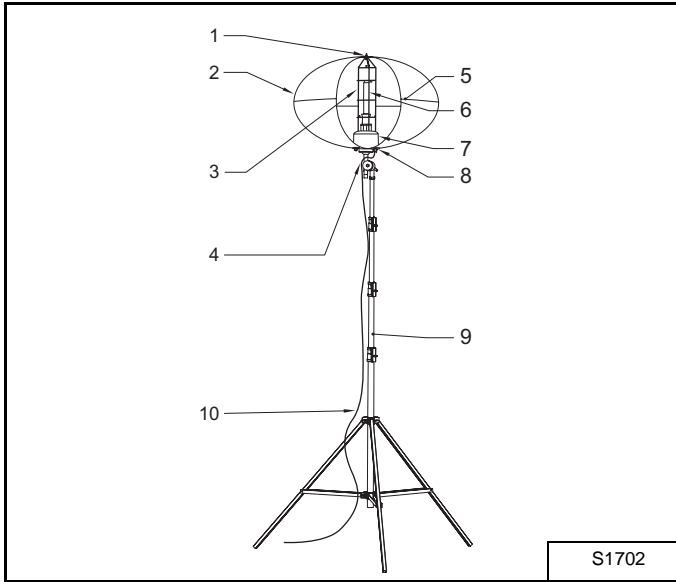
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Overview

The Balloon BL2000B is an illumination device specifically designed for night work inside and outside to assist during rescue, safety, worksite operations etc.

Identification of elements

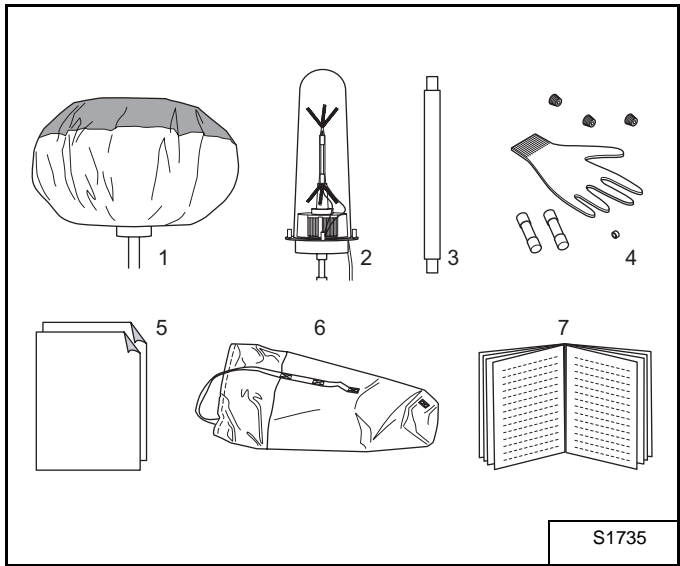
Figure 1



Reference	Description
1	Nut
2	Envelope
3	Protection bowl
4	Support stand
5	Zip
6	Bulbs
7	Cover
8	South pole
9	Telescopic pole (optional)
10	Power supply cable

List of parts

Figure 2



Reference	Description
1	1 Envelope
2	1 Internal equipment (bowl + base + support stand)
3	4 Bulbs
4	1 Accessory kit (glove, thumb wheels, nut, fuses)
5	1 Repair kit (2 sheets)
6	1 Storage bag
7	1 User manual
8	1 Packing foam



## Assembly and installation

### Unfolding the envelope

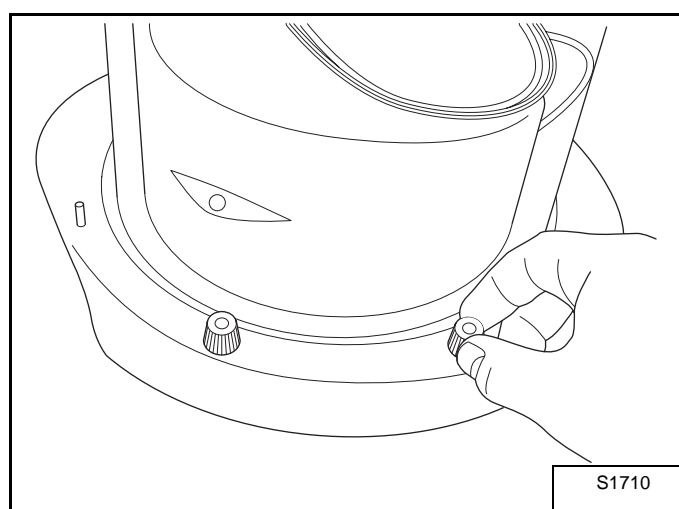
1. Unfold the envelope on a smooth, clean surface.
2. Open the zip.

### Assembling (bulb installation)

**Note:** This operation is necessary before using the equipment for the first time. Afterwards, the bulbs may be left installed for transport.

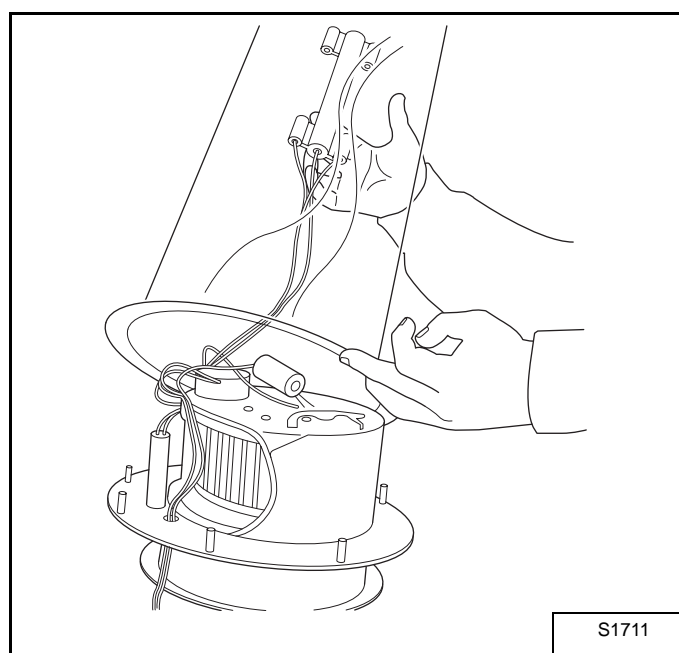
1. Open the zip.
2. Unscrew the plastic thumb wheels and remove the envelope.

Figure 3



3. Remove the protective bowl from the fan part.

Figure 4

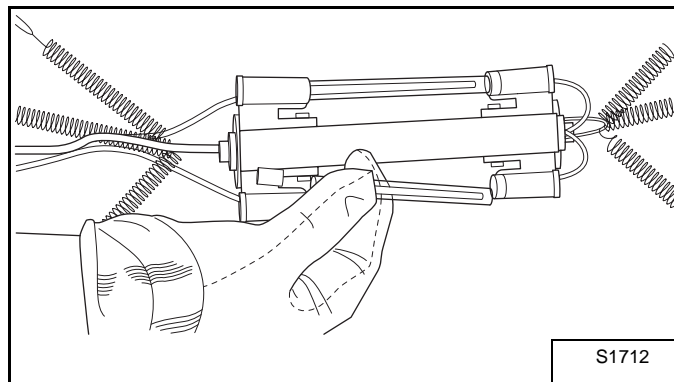


### IMPORTANT

**Handle the bulb with the supplied gloves. We recommend cleaning the bulb with methylated spirits before each use.**

4. Place the 4 bulbs in their respective lamp holders inside the protective bowl.

Figure 5



5. Put the protective bowl back on the fan part.
6. Put the envelope back in place.
7. Tighten the thumb wheels.
8. Close the zip.



### WARNING

**If a bulb breaks or cracks inside the balloon, disconnect the electrical power supply and disassemble the envelope to remove the fragments of glass.**

**Use a vacuum cleaner to clean the equipment. Be careful not to cut your fingers when handling the fragments of glass.**

## Installing the Balloon BL2000B

1. Install the Balloon BL2000B on the telescopic pole.
2. The equipment is now ready for inflation.



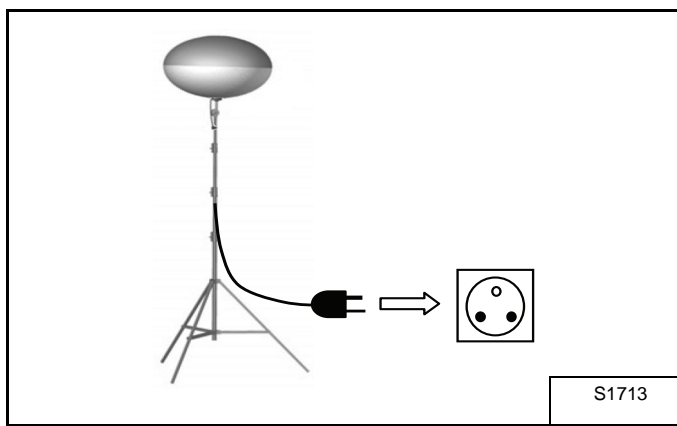
### WARNING

When assembling the telescopic pole, pay attention to carefully lock the tightening rollers of the pole. If the elements of the pole come loose, they might pinch or injure your fingers.

## Inflating and switching on the Balloon BL2000B.

1. Connect the power plug to the mains or generating set.

Figure 6



2. The envelope will start to inflate.

## Disassembly

### Switching off and deflating

1. Disconnect the Balloon BL2000B from its power supply.
2. **Wait 5 minutes** for the bulbs to cool down.
3. Remove the Balloon BL2000B from its telescopic pole.
4. Open the zip to accelerate deflation.

### Folding and storing

1. Place the Balloon BL2000B in its storage bag.

# Maintenance

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## Bulb



### WARNING

It is imperative to replace bulbs showing signs of wear and tear (cracked bulb, small fragments of glass inside the bulb, whitened bulb glass).

Failure to do so could cause explosion of the bulb which might result in body injury and/or damage to the envelope.

## Envelope

### IMPORTANT

A damaged envelope must be immediately repaired or replaced.

### Cleaning

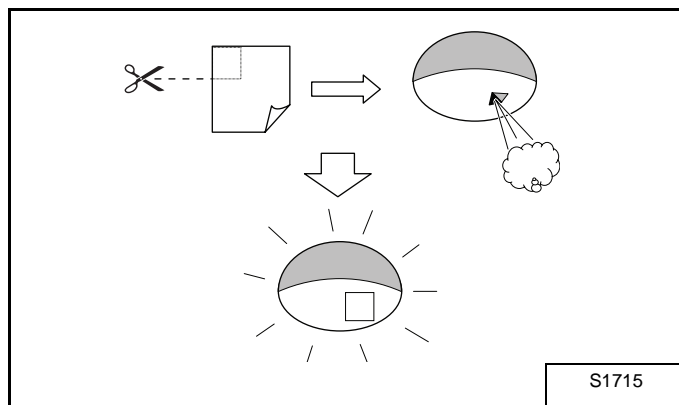
Regularly clean the envelope with soapy water or alcohol.

## Replacement

To replace a bulb, refer to “Assembling (bulb installation)” on page 7.

## Repair

Figure 7

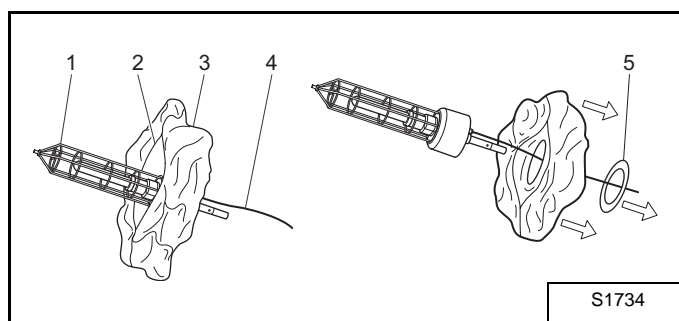


1. Cut a patch out of the self-adhesive fabric sheet of the repair kit, big enough to entirely cover the damaged part of the envelope.
2. Remove the protective film from the self-adhesive side of the created patch.
3. Stick the patch on the damaged part of the envelope.

## Replacement

1. Unscrew the nut located on the top of the Balloon BL2000B.
2. Open the zip.
3. Unscrew and remove the 8 plastic thumb wheels [Figure 3].
4. [Figure 8] Remove the envelope [3] and fabric grip ring [5] via the bottom side of the equipment [1] by sliding it along the power supply cable [4].

Figure 8



Reference	Description
1	Internal equipment
2	Zip
3	Envelope
4	Power supply cable
5	Fabric grip ring

5. Proceed in reverse order to install the new envelope. Make sure that the bottom side of the envelope is properly sealed by the fabric grip ring.

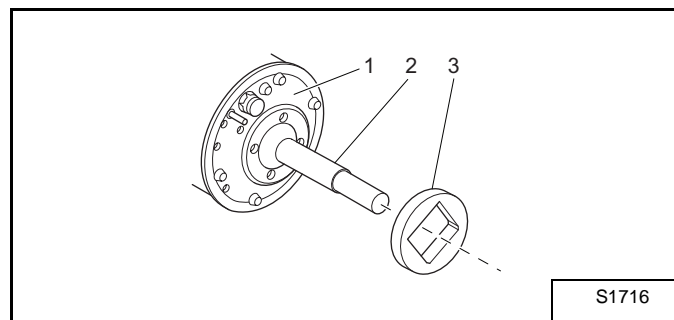
## Air filter

## IMPORTANT

The air filter must be immediately checked & cleaned or replaced if the fan starts to make an abnormally high noise. Failure to do so could cause the fan to overheat and break down.

## Replacement

Figure 9



Reference	Description
1	South pole
2	Support stand
3	Air filter (sponge)

1. Remove the air filter (sponge) [3] from the south pole [1] by making it slide along the support stand [2].
2. Install the new air filter in reverse order.

# Fault finding

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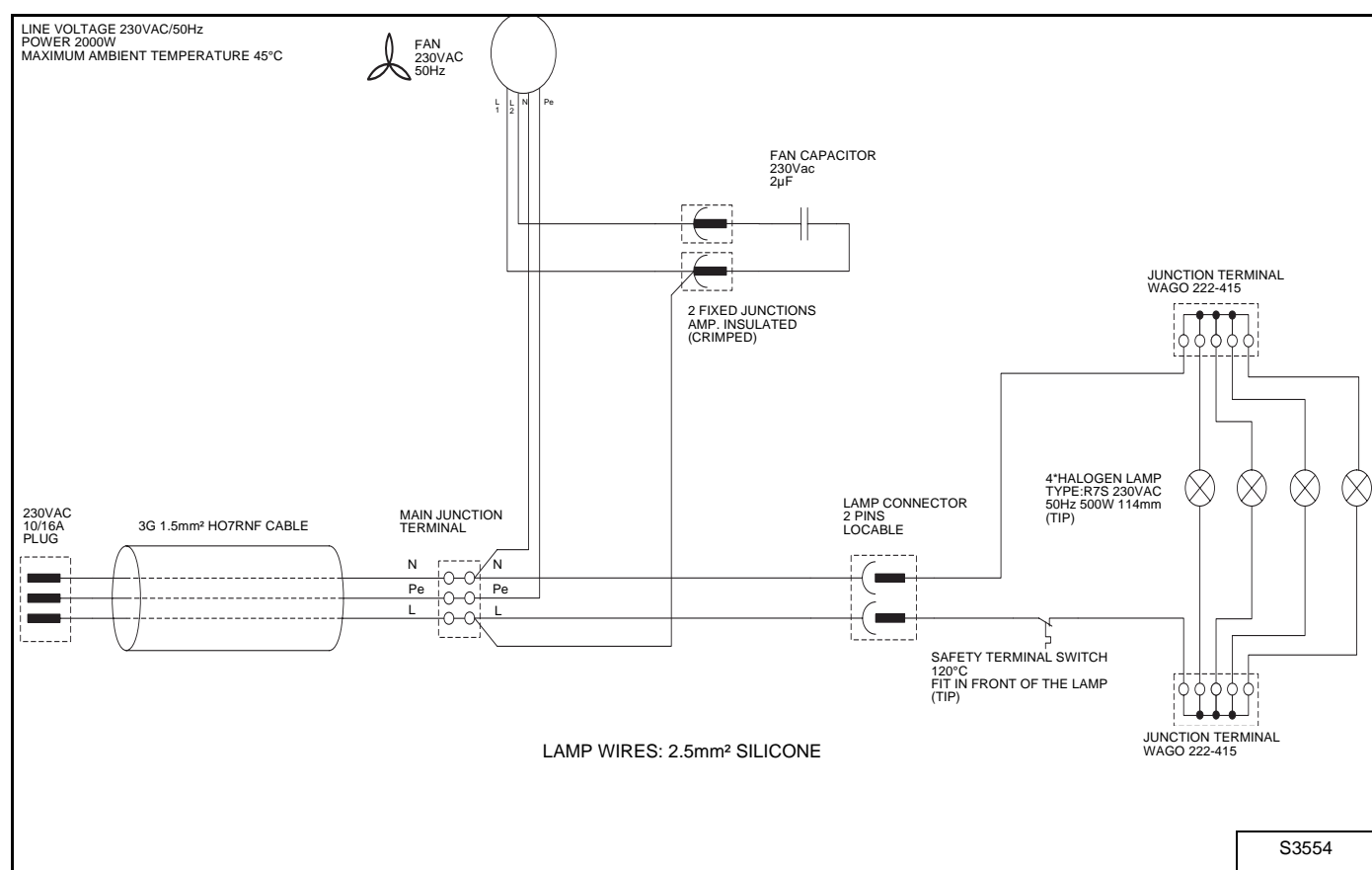
## Introduction

The trouble shooting chart that follows includes some of the problems that an operator may encounter during the operation of the Balloon.

The chart does not attempt to list all of the problems that may occur, nor does it attempt to give all of the answers to solve the problems. The chart does give those problems that are most apt to occur.

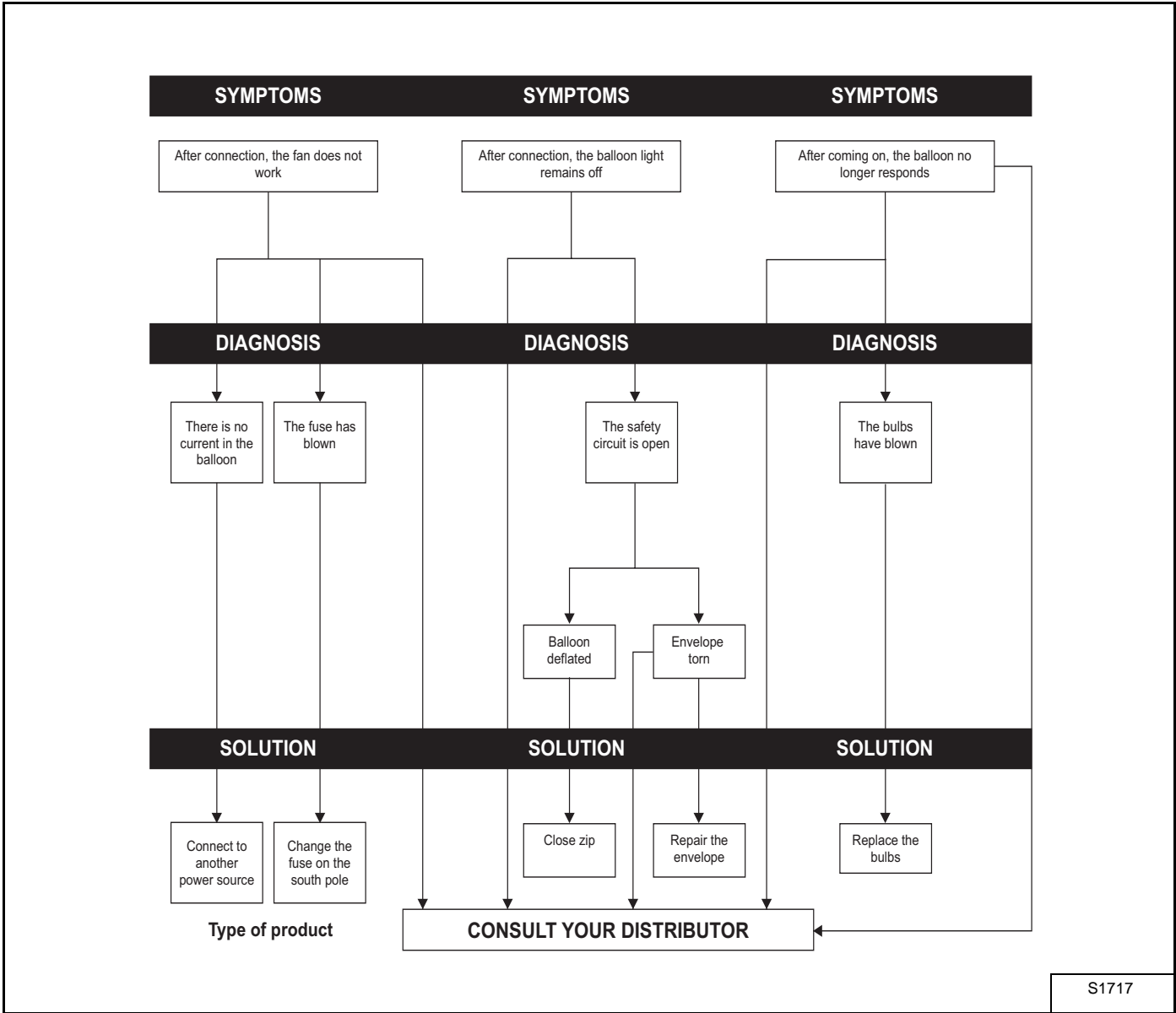
## Electrical diagram

Figure 10



Fault finding chart

Figure 11

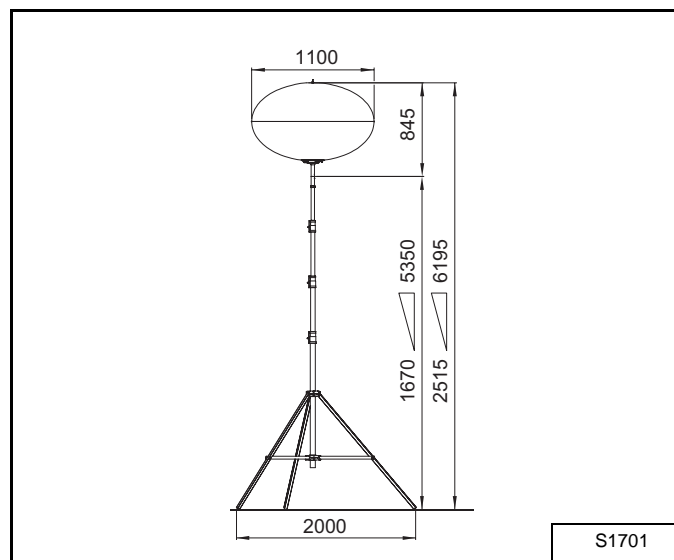


# Specifications

## General specifications

Feature	Value	
Voltage	230 V / 50 Hz	110 V / 50 Hz
Protection (fuse)	10 A	20 A
Power	2000 W	
Number of lamps	4 x 500 W	
Lamp type	Halogen	
Lamp holder type	R7s (4 x 500)	
Maxi lumen	54 000 Lm	54 000 Lm
Average lamp life	2000 h	
Weight balloon	10 kg	
Inflation time	45 s	
Wind speed resistance	100 km/h (62 mp/h)	
Surface area lit	1 400 m <sup>2</sup>	
Dimensions	see <b>[Figure 12]</b>	

**Figure 12**







# Parts

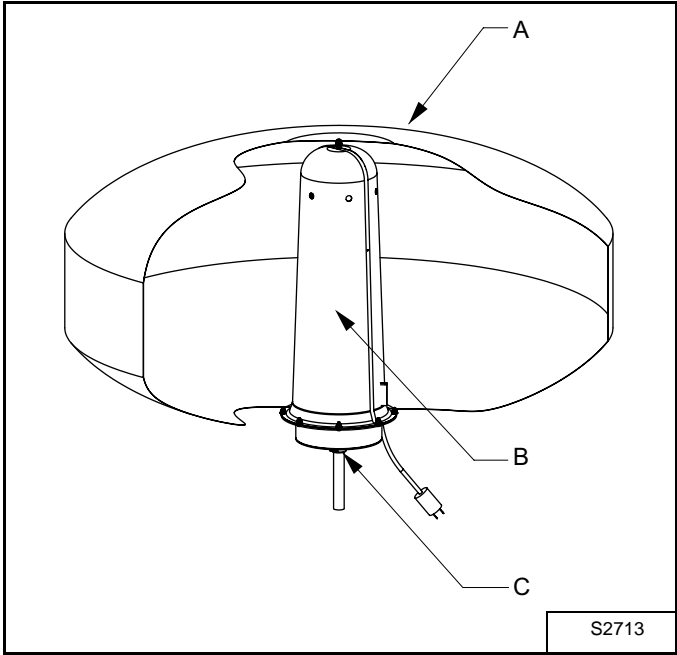
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## Spare parts

### Envelope

Figure 13

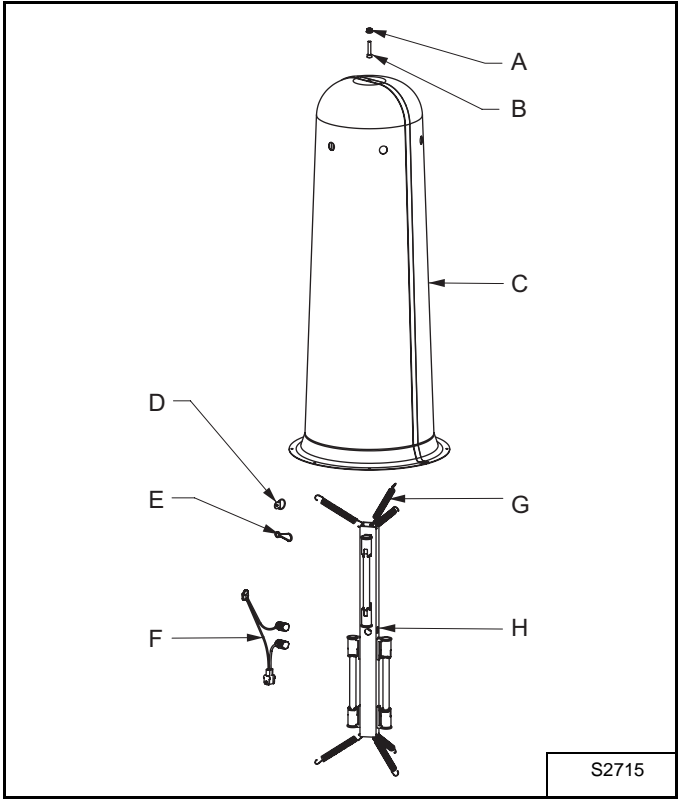


Ref.		Description	Qty
A	17126368	Envelope	1
B	18034298	Internal Harness	1
C	18034306	External Harness EU	1
	18034314	External Harness UK	1
*	17126319	Transport Bag	1
*	18034322	Repair Kit (2 self adhesives leaves)	1

\* Not showed

### Protection bowl & lamps

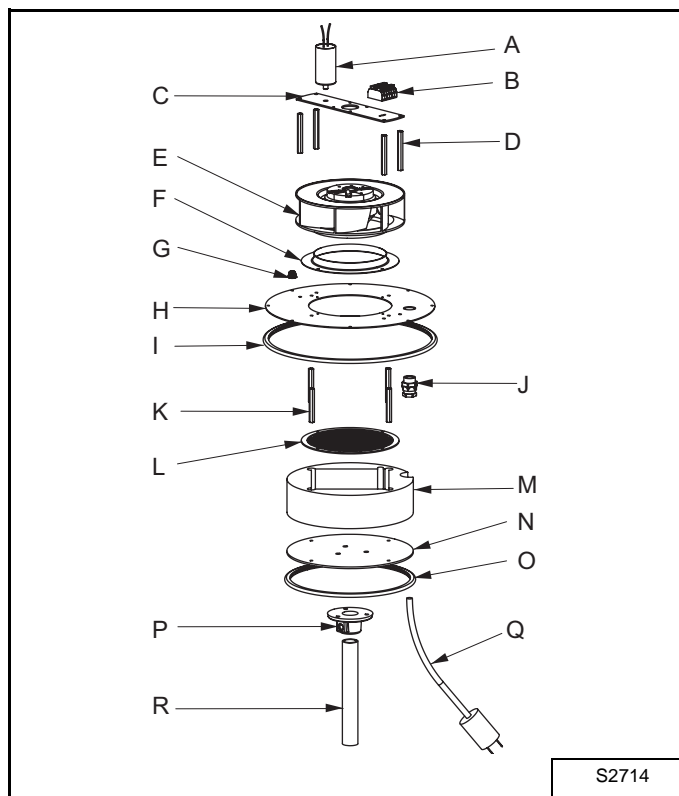
Figure 14



Ref.		Description	Qty
A	17126392	M5 Screw	1
B	17126145	Screw CHC M5*25	1
C	17126152	Polycarbonate Bowl	1
D	17126160	Connector Clip	6
E	17126178	Clip, Light Harness	6
F	18034330	Temperature Sensor	1
G	16534299	Inox Springs	6
H	18034348	R7S Kit	1
	18034355	500W R7S Lamp	4

## Internal equipment

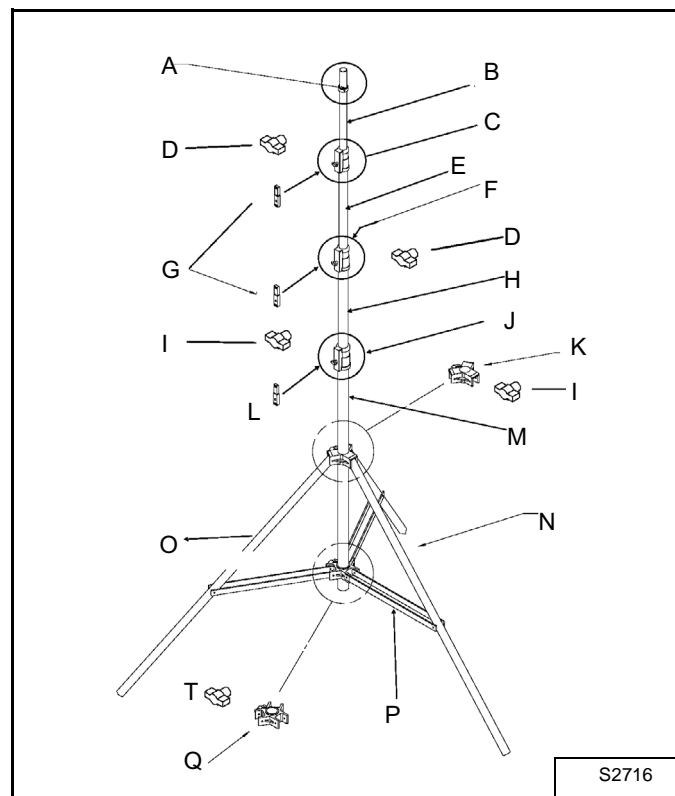
Figure 15



Ref.		Description	Qty
A	18034363	Capacitator EU	1
	18034371	Capacitator UK	1
B	18034389	Wires Terminal	1
C	18034397	Fan Support	1
D	18034405	Spacer	4
E	18034421	Fan 230 V EU	1
	18034439	Fan 110 V UK	1
F	18034413	Draw in Plate	1
G	18034447	M8 Screw	4
H	18034454	Support Plate	1
I	18034462	Protection Ring	1
J	18034470	Glant Bolt	1
K	17126244	Spacer	4
L	18034488	Protection Grid	1
M	18034496	Air Filter	1
N	17126285	South Pole Plate	1
O	18034504	Protection Ring	1
P	17126293	Mount Pole	1
Q	18034512	Cable + Plug Euro	1
	18034520	Cable + Plug UK	1
R	17126301	Pole Mounting	1

## Telescopic pole

Figure 16



Ref.		Description	Qty
	18034280	Mast Assy	1
A	18034538	Top casing 30mm	1
B	18034546	30 mm Tube	1
C	18034553	Cassing 35 mm	1
D	18034561	Handling Screw	2
E	18034579	35 mm Tube	1
F	18034587	Cassing 40 mm	1
G	18034595	Set of 2 caps	1
H	18034603	40 mm Tube	2
I	18034611	Locking Screw	3
J	18034629	Cassing 50 mm	1
K	18034637	Superior Plate	1
L	18034645	Set of 2 caps	1
M	18034652	50 mm Tube	1
N	18034660	Square Leg	2
O	18034678	Leveling Leg	1
P	18034686	Set of 2 bars	3
Q	18034694	Inferior plate	1

# Warranty

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## General

Ingersoll-Rand, through its distributors, warrants to the initial user that each BL2000B, will be free of defects in material and workmanship for a period of twelve (12) months from shipment to the initial user. The balloon envelope for a period of six (6) months from shipment to the initial user.

Consumables such as bulbs, fuses, etc. are not covered by this warranty. Using a bulb of general use may cause destruction of the envelope. All use of such bulb other than IR referenced bulb cancels the warranty.

In the event of a manufacturing defect or incorrect operation, return the balloon to your Ingersoll-Rand distributor. Ingersoll-Rand will provide a new part or repaired part, at its election, in place of any part, which is found upon its inspection to be defective in material and workmanship during the period prescribed above.

Labor cost and/or transport cost to replace the part/unit is the responsibility of the user. User must present proof of purchase at the time of exercising warranty.

The above warranty does not apply to failures occurring as a result of abuse, misuse, negligent repairs, corrosion, erosion and normal wear and tear, alterations or modifications made to the product without express written consent of Ingersoll-Rand; or failure to follow the recommended operating practices and maintenance procedures as provided in the product's operating and maintenance publications.

Accessories or equipment furnished by Ingersoll-Rand, but manufactured by others, including, but not limited to, engines, shall carry whatever warranty the manufacturers have conveyed to Ingersoll-Rand and which can be passed on to the initial user.

**IMPORTANT**

THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES EXPRESSED OR IMPLIED, (EXCEPT THAT OF TITLE), AND THERE ARE NO WARRANTIES OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE.

## Warranty registration

To initiate the machine warranty, fill out the “Warranty Registration” form, supplied as part of the machine documentation.

Keep a copy for your records and mail the original to:

Ingersoll-Rand International  
170/175 Lakeview Drive  
Airside Industrial Park  
Swords  
Co Dublin  
Ireland

Attention : Warranty Department Utility Equipment

**Note: Completion of this form validates the warranty.**

## Warranty registration form

Selling Disitributor	Servicing Distributor	WARRANTY REGISTRATION
Name _____	Name _____	Owner/User Name _____
Address _____	Address _____	Address _____
City _____	City _____	City _____
Zip Code/Postal Code _____	Zip Code/Postal Code _____	Zip Code/Postal Code _____
Country _____	Country _____	Country _____
Telephone _____	Telephone _____	Telephone _____

## Complete the Applicable Blocks Owner/User Type of Business (check one only)

Construction-Heavy (highway, excavation, etc.)	Asphalt Contractor	Coal Mining	Other Mining
Construction-Light (carpentry, plumbing, pools, mason, etc.)	Government (municipal, state, county, etc.)	Quarry	Shallow Oil & Gas
Rental (rental center, rental fleet, etc.)	Building Contractor	Waterwell	Utility Company
Industrial (plant use)	Other specify _____	Exploration	Utility Contractor

Model	Unit S/N	Engine S/N	Date Delivered
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Model	Unit S/N	Engine S/N	Date Delivered
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

## Servicing Disitributor/User Acknowledgement

- The Purchaser has been instructed and/or has read the manual and understands proper preventative maintenance, general operation and safety precautions.
- The warranty and limitation of liability has been reviewed and understood by the owner/user.
- Ingersoll-Rand reserves the right to make design changes or modifications of Ingersoll-Rand products at anytime without incurring any obligation to make similar changes or modifications on previously sold units.